



Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.



Exploring emergent barriers to hospital-based violence intervention programming during the COVID-19 pandemic

William Wical^{a,*}, Melike Harfouche^b, Nakita Lovelady^c, Nathan Aguilar^d, David Ross^e, Joseph B. Richardson^f

^a Department of Anthropology, College of Behavioral and Social Sciences, University of Maryland College Park, 1141 Taliaferro Building, College Park, MD 20742, United States of America

^b Department of Surgery, University of Maryland School of Medicine, 655 W. Baltimore Street, Baltimore, MD 21201, United States of America

^c Department of Health Behavior and Health Education, College of Public Health, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, AR 72205, United States of America

^d Columbia University School of Social Work, Columbia University, 1255 Amsterdam Avenue, New York, NY 10027, United States of America

^e Rebuild, Overcome, and Rise Center, University of Maryland, Baltimore, 520 W Fayette Street, Suite 320, Baltimore, MD 21201, United States of America

^f Department of African American Studies and the Department of Anthropology, College of Behavioral and Social Sciences, University of Maryland College Park, 1141 Taliaferro Building, College Park, MD 20742, United States of America

ARTICLE INFO

Keywords:

Hospital-based violence intervention program
Health
Black Men's health
Gun violence
Trauma
Prevention

ABSTRACT

National rates of gun violence have risen during the COVID-19 pandemic. There are many contributing factors to this increase, including the compounding consequences of social isolation, unstable housing, decreased economic stability, and ineffective and violent policing of communities of color. The effects of these factors are exacerbated by the pandemic's impact on the provision and availability of psychosocial services for individuals in marginalized communities, particularly those who have been violently injured. Hospital-based violence intervention programs (HVIPs) have been identified as a crucial intervention strategy in reducing repeat violent injury. The ongoing COVID-19 pandemic has engendered, significant barriers in HVIPs' attempts to assist program participants in achieving their health-related and social goals. This research offers insight into the complexities of providing social services during the convergence of two public health crises—COVID-19 and gun violence—at the HVIPs associated with the two busiest trauma centers in the state of Maryland. In considering the effects of inadequate financial support and resources, issues with staffing, and the shift to virtual programming due to restrictions on in-person care, we suggest possible changes to violence prevention programming to increase the quality of care provided to participants in a manner reflective of their unique structural positions.

1. Introduction

Black men in the United States are ten times more likely to die from homicide compared to similarly aged white men; the overwhelming majority of these instances are firearm related. These disparities have been consistent for more than a decade (Centers for Disease Control and Prevention, 2020). Black men in Maryland are less than 15% of the state's population; however, they account for 82% of the state's gun homicide victims (Giffords Law Center to Prevent Gun Violence, 2020). While these statistics are an imperfect measure of the disproportionate harm related to gun violence experienced by Black men, they are

reflective of the unique concentration of this form of interpersonal violence and its sequelae at the intersection of race, class, and gender. National rates of gun violence have risen during the COVID-19 pandemic, with recent research reporting an increase of 30% during its first year (Ssentongo et al., 2021). There are many contributing factors to this rise in violence including social isolation, unstable housing, decreased economic stability, and ineffective and violent policing of communities of color (Beckett, 2015; Baciu et al., 2017; Everytown Research and Policy, 2022; Fernandez, 2020; Friedman et al., 2019; Lalchandani et al., 2022; Nass, 2020; Rapier, 2020; Zakrisson et al., 2017). These factors and their cumulative effects have long impacted

Abbreviations: HVIP, Hospital-based violence intervention program.

* Corresponding author.

E-mail addresses: wwical@umd.edu (W. Wical), mharfouche@som.umaryland.edu (M. Harfouche), nnlovelady@uams.edu (N. Lovelady), nja2141@columbia.edu (N. Aguilar), d.ross@law.umaryland.edu (D. Ross), jrichar5@umd.edu (J.B. Richardson).

<https://doi.org/10.1016/j.ypmed.2022.107232>

Received 28 April 2022; Received in revised form 22 August 2022; Accepted 28 August 2022

Available online 6 September 2022

0091-7435/© 2022 Elsevier Inc. All rights reserved.

cities across the country but their impact has been exacerbated by the pandemic (Gauthier et al., 2021; Ruprecht et al., 2021). Additionally, violence prevention/intervention services have experienced disruptions during the pandemic.

Research has identified the ways in which social inequality leads to significantly higher rates of infection, hospitalization, and death from COVID-19 in Black people compared to white people (Alcendor, 2020; Dalsania et al., 2021; Gorges and Konetzka, 2021; Kim and Bostwick, 2020; Rogers et al., 2020). However, little attention has been given to the pandemic's impact on the provision and availability of psychosocial services for individuals in marginalized communities, particularly those who have been violently injured. Hospital-based violence intervention programs (HVIPs) have been identified as a key strategy in reducing gun violence related injuries and death (Bonne and Dicker, 2020; Cooper et al., 2000; Purtle et al., 2013; Richardson et al., 2016; Richardson Jr et al., 2020). These multidisciplinary programs seek to prevent repeat violent injury and improve clients' health status. Although programs differ in the kinds of assistance offered, most include individual psychotherapy, peer group support, and referrals to education, employment, and housing services. HVIP staff typically introduce the program to possible participants at bedside during hospitalization (Dicker et al., 2009; Evans and Vega, 2018). This interaction is critical to the establishment of trust and rapport needed to effectively engage survivors of violence in program services (Wical et al., 2020). Although HVIPs have shown some promise for reducing gun violence related outcomes, the implementation of these programs is typically influenced by organizational buy-in and capacity, funding, and community or external partnerships and resources.

Due to the ongoing COVID-19 pandemic, HVIPs have experienced significant barriers in assisting program participants' achievement of their health-related and social goals. To our knowledge, limited research has been conducted on the impact of the pandemic on violence intervention services (see Altheimer et al., 2020; Njus et al., 2021). There has been no long-term qualitative research or contextual data to describe the impact of the pandemic on HVIPs. The aim of this research is to provide insight into the complexities of providing services during the convergence of two public health crises—COVID-19 and gun violence. While the pandemic has negatively affected multiple aspects of the healthcare system, a careful analysis of the unique difficulties faced by HVIPs reveals broader structural barriers to violence prevention. Using a case study approach, we examine the consequences of the pandemic on the HVIPs associated with the two busiest trauma centers in the state of Maryland. The research team suggests possible changes to violence prevention programming to increase the quality of care provided to participants in a manner reflective of their unique structural positions.

2. Methods

2.1. Setting

Maryland law mandates the existence of an “organized and effective approach to injury prevention that prioritizes those efforts based on local trauma registry and epidemiologic data” —this includes the development and execution of “outreach activities and program development that address one of the major causes of injury in the community” at both Level I and Level II trauma centers (Sec. 30.08.05.15. Injury Prevention and Public Education). These designations describe the volume of patients, kinds of resources available, and research mandates at each location. Centers with a Level I designation see a higher state-mandated minimum volume of patients, provide greater availability of specialty care, and must actively engage in research. In contrast, Level II centers treat a lower volume of patients, have less access to specialty care, and do not have a research mandate. In terms of clinical care, Level I and Level II trauma centers are both able to treat firearm related injuries because of the 24-hour availability of surgeons and intensive care. The busiest Level I trauma center in the state, Maryland I (pseudonym),

is located in Baltimore and treats approximately 1500 violently injured patients each year. This trauma center sees patients from the western side of the city which has the highest rates of gun violence. The number of fatal and non-fatal shootings in Baltimore was relatively stable during the pandemic—maintaining one of the highest rates of gun violence in the country. Maryland II (pseudonym), the busiest Level II trauma center in the state, is located in Prince George's County, MD and borders the District of Columbia. Maryland II sees patients from both areas, treating approximately 750 violently injured patients each year. Prince George's County and Washington, D.C. saw increases in both fatal and non-fatal shootings during the pandemic. There was a 121% increase in homicides in Prince George's County from 2019 to 2021 and a 36% increase in Washington, D.C. from 2019 to 2021. The increases in non-fatal shootings are similar to the rise in homicide rate for each location.

Research at Maryland I revealed the likelihood of repeat injury among Black men was positively associated with substance abuse, fighting or weapon use in the previous year, perceived disrespect, and prior incarceration (Richardson et al., 2016). The HVIP at Maryland I has had success in reducing repeat violent injury, with a recidivism rate of 5% for those who participated in the program compared to 36% for those who did not (Cooper et al., 2006). Although Maryland II has not been formally evaluated for effectiveness, data from the program revealed a less than 1% recidivism rate in the first 18 months of its operation compared to 32% prior to its inception (Richardson Jr et al., 2020). Both programs are entirely grant funded. Based on its close proximity and the volume of violently injured patients from the District of Columbia, Maryland II also receives additional funding support from the DC Office of Victim Services and Justice Grants. While this source of funding has been stable throughout the pandemic, it is limited to supporting residents of the District and is insufficient to support staff salaries. Maryland Governor Larry Hogan's veto of SB 708 at the beginning of the pandemic adversely impacted both programs. This bill was designed to provide \$3.6 million in annual grant funding for Maryland violence intervention programs (both community and hospital-based). While the State Senate overrode the veto in January 2021, there have been prolonged delays in the disbursement of monies. Lack of stable funding significantly exacerbated the already tenuous financial position of the HVIPs.

2.2. Participants and procedures

Institutional Review Board approval was obtained through the University of Maryland, College Park and the University of Maryland, Baltimore. Research was conducted from November 2021 to March 2022. All participants completed written informed consent. The research team used a case study approach, as this method of analysis offers insight into dynamic institutional contexts (LeCompte and Schensul, 1999). This method is appropriate given the dearth of information on how the COVID-19 pandemic has impacted the operation of HVIPs. As a part of a co-author's dissertation (William Wical), ethnographic research and participant observation were conducted for five months at Maryland I and four months at Maryland II. Participant observation was used to examine decision making processes around access to program services, determinations of participants' need, and barriers to service provision. In order to reflect the scope of differing opinions and expertise of the staff at each location, a semi-structured interview with the primary case worker from each program was completed. These case workers were employed by the programs for the entire duration of the study. The research was conducted using a mixture of qualitative research methods. The core component—ethnography—was supplemented with a simultaneously conducted focus group. The concurrent use of these methods of data collection allows for confirmation of data saturation and data triangulation (see Morse, 2010).

At the beginning of this research, the Maryland I program had four primary staff members—three case workers (one of them being a licensed clinical counselor) and one community trauma responder. The

HVIP had no program manager or medical director during the entirety of the research. A focus group was conducted with all three of the Maryland I case workers and the program's community trauma responder to determine differing approaches to their work, training and skills, and barriers they experienced. Over the course of the research, two case workers left, citing a lack of support and burnout, ultimately leaving the clinical counselor as the only routinely available staff member. The absence of these two case workers limited their involvement in the participant observation portion of the research. Maryland II had three primary staff members—one case worker, a trauma program director, and outreach coordinator. The program director and outreach coordinator oversaw all trauma admissions for the hospital (e.g. vehicle accidents, falls, etc.), thus limiting their ability to provide support for the HVIP. A focus group was not conducted at this location because there was only one frontline staff member.

2.3. Measures

The interview guide for the study was developed after at least one month of participant observation at each site. The interviewer iteratively constructed it during this initial period and discussed possible questions with staff members to ensure that their experiences could best be understood. The questions for the semi-structured interviews investigated primary services provided, challenges working with violently injured, socially marginalized populations, changes in service provision due to COVID-19, and strategies used to increase participation during the pandemic. Each interview lasted approximately 80 min. The focus group was conducted in order to determine the training, work experiences, perspectives on violence prevention, and common barriers encountered by staff. The focus group lasted approximately 60 min. The co-author's detailed field notes provided thick descriptions of the socio-spatial contexts in which care provision occurred, reflexive memos, and verbatim quotes from staff.

2.4. Data analysis

The research team used Dedoose qualitative software for data analysis. Two coders were used for the focus group and interview data; they used an iterative coding strategy to determine emergent codes. A priori codes were not used, as little is known about the barriers experienced by HVIP staff related to the ongoing COVID-19 pandemic. Consensus was reached on each code included in the codebook; codes not unanimously agreed upon were not used. Generated codes include approaches to social service provision, perceived client needs, location of service provision, staff expertise, institutional barriers to care, COVID-related barriers to care, funding issues, lack of staffing, program goals, program successes, causes of violence, and personal experiences working in the program. Fieldnotes were discussed and iteratively analyzed each week at a research meeting in order to evaluate changing interpretations of the data, future research questions, and developing themes. Thematic analysis was completed through a comparison of each data source and unanimous agreement by the research team.

In evaluating the trustworthiness of qualitative data, [Lincoln and Guba \(1986\)](#) underscored the significance of credibility, dependability, confirmability, and transferability. These standards were used to increase the likelihood of reflecting participants' perspectives, enhance the repeatability of the research, improve the probability results can be corroborated by other researchers, and evaluate the extent to which the results are generalizable to other social contexts. The specific strategies used by the research team to achieve these standards of qualitative rigor included sustained engagement at the research sites, weekly peer debriefing, team meetings about coding accuracy, maintaining a detailed research design, triangulating data between multiple data sources, and discussing thematic analysis with research participants.

3. Results

Thematic analysis revealed three major barriers limiting the ability of staff to successfully meet the needs of their clients: a lack of institutional support for HVIPs, limited staffing, and restricted access to physical space because of COVID-19. Staff reported that while many issues pre-dated the pandemic, they notably worsened since it began.

3.1. Lack of institutional support for resources

Staff at both programs articulated that inadequate access to vital resources was an issue prior to the pandemic. They all endorsed that the problems got significantly worse during it. When the pandemic first began, the meager funding mechanisms previously used to support the HVIPs were put on hold or completely eliminated, effectively leaving the programs to rely solely on their insufficient reserves for funding. Both programs acutely experienced the consequences of the delay in funds due to the governor's veto of SB 708; this lack of funding was particularly devastating as each program serves a location which experiences some of the highest levels of gun violence in the country. Staff at both HVIPs explained they routinely lacked the necessary financial support and resources to complete their work. A Maryland I case worker contended that the program's ability to address the most pressing needs of clients was a critical avenue for increasing program participation and client satisfaction. In years prior, staff at this program had been able to purchase groceries for clients, assist with paying small bills, offer security deposits for housing, and provide clothes and personal care items. When the pandemic began and the program experienced staff turnover due to burnout, case workers were no longer given access to the funds to purchase these items. He explained the difficulty of trying to recruit for the program knowing they had little to offer patients, "It just feels different when you have nothing to offer...I am not as confident when going into the rooms when all I can offer is counseling." A case worker at Maryland II emphasized his frustration with the limited support, as he said, "I think the issue is just hospital leadership support...I have never felt that the hospital has supported this [program], even with our [positive] ratings and [success stories]." The COVID-19 pandemic exacerbated the pressures of inadequate resources and institutional support. The primary case worker at Maryland I noted,

"All of those things that the pandemic did, piled on top of the stressors that already came with the job. It really bottoms things out... and with the uptick in violence that was occurring throughout the pandemic, to be quite honest, I look at that list (trauma registry) in the morning like (grimaces face), so we are losing colleagues and going back to a place where it is just me by myself."

At both programs, the lack of resources available to staff is inextricably linked to being exclusively grant funded. Staff at Maryland II recalled how the program used to employ a full-time social worker, credible messenger, and psychotherapist who had experience working with Black men who had been violently injured. While these staff members had left the program prior to the beginning of the pandemic, there was no intention of permanently filling these critical positions at any point in the following years—the program manager cited a lack of funding as the principle reason for the decreased level of staffing. Therefore, staff often referred clients to other service providers in the surrounding area to receive any health and social support. In addition to not having guaranteed funds to pay staff year-to-year, the grants limit what the case workers are able to purchase for their clients. The resulting inflexibility of these grants has curtailed the ability of staff to provide food, financial resources, transportation assistance, and personal care items to clients who desperately need them. In effect, the pandemic simultaneously increased the needs of clients and decreased the ability of programs to meet them.

COVID-19 dramatically altered the landscape of available services for survivors of a gunshot wound, as many programs shifted entirely to a virtual model (see [Alzheimer et al., 2020](#)). This resulted in a decrease in

the quantity and quality of available supportive services, with clients citing difficulty in getting responses from multiple programs. Staff at both programs repeated that they and their clients routinely would not hear back from other programs. The primary Maryland I case worker stated,

“You can’t get anyone on the phone, or you are trying to do an application online and you are not understanding what the next steps are or the website has a glitch, or it isn’t doing what it says it should do. And you can’t even contact anybody for that.”

The staff at both programs noted that diminished resource availability has decreased the number of participants contacting them for support. This is particularly significant for clients who have been shot, as they often have several clinical and social needs, including long term mental health services and assistance with transportation to follow-up appointments. One case worker at Maryland II clarified how the provision of these services was critical to supporting clients and their families. He stated that family members told him,

“I can’t believe [the hospital] even does this, I can’t believe somebody from the hospital delivered me [supplies], cared enough for my son to bring me wound care supplies or colostomy bags, or you know, food, or masks when COVID first hit.”

Soon, however, policies changed to restrict the delivery of in-person services, and no one was able to deliver anything to patients.

The lack of funding for vital components of service provision included the Maryland II program limiting the number and duration of rides it offered clients—as the money was needed to pay staff salaries. The decrease in available rides was particularly troubling to clients, as they had appointments at affiliated hospitals that were outside of the range of allowable rides (see Richardson et al., 2021). In some cases, program clients needed additional transportation assistance during the pandemic for COVID-19 testing, thus reducing their available rides for follow-up appointments. The consequences of a lack of available resources to support transportation needs were exacerbated by the slowness of approval from Medicaid transportation services—in some cases resulting in clients not attending follow up appointments. Both staff and clients reported that the inability to meet these needs negatively impacted the health status of participants and increased psychosocial stress.

3.2. Staffing shortages

Prior to the beginning of the pandemic, the Maryland I program hired three new staff members—a psychotherapist, case worker, and special projects coordinator. At the beginning of the pandemic all but one of the program staff were shifted to handing out personal protective equipment (PPE). The redeployment of staff left one caseworker as the sole member of a “skeleton staff” to support current program participants—thereby increasing his workload to unsustainable levels. This staff member remained as the only caseworker for months with no additional help. As a result of the reduced staffing capacity, recruitment of new patients was effectively halted even with the program employing a larger staff. The shift to distributing PPE as a primary job resulted in multiple of the recently hired staff leaving the program to seek employment elsewhere in order to work in a position more closely aligned to their training and expertise. A Maryland I staff member explained how the pandemic contributed to this staff turnover,

“Work morale has been extremely low, like we have been losing all of our workers. And that is in every level. Director gone. Manager gone. Violence intervention specialists [case workers] gone. Some of the people to leave first, they almost felt like their jobs became obsolete ... People get redeployed [to handing out PPE] and they end up leaving...”

The Maryland I staff who did not leave during the switch to PPE delivery eventually returned to their previous roles in the HVIP. However, two case workers quit within the following two months of returning to their previous roles citing poor working conditions—including being mistreated by other hospital staff, mandatory

shift work, and stress surrounding the pandemic. Since their resignations, there have been no additional hires to fill any of the vacant staff positions leaving the sole remaining case worker with the caseload of the entire program.

In contrast, the HVIP at Maryland II was able to maintain their pre-pandemic levels of staffing to continue the provision of services. However, the staffing at this program before the pandemic was insufficient with only one case worker on staff. The lead case worker expressed that the pandemic exacerbated pre-existing issues with being understaffed. He noted,

“I am averaging 40, about 40 to 50, sometimes up to 60 participants on my caseload... and it is in different areas. You are not just doing one city. You are doing two different states (Maryland and District of Columbia), it’s two different things... so we do lose some with the follow up. Some of them don’t get the same amount of attention as others because there are time limits...”

Because Maryland II serves patients from both Prince George’s County and Washington, D.C.—and increasingly other counties in Maryland—the case worker must navigate the complex networks of health, legal, and social service agencies across multiple jurisdictions. This was particularly challenging during the pandemic, as many agencies experienced changes in the services they offered. While the number of clients who received services from the Maryland II case worker remained at a similar level during the pandemic, the changing landscape of social service provision and insufficient level of staffing diminished the program’s ability to meet the needs of violently injured patients.

With extremely limited staffing, the Maryland I program had to curtail the expansion of services and reduce others. Eventually, the low levels of staffing and reduced enthusiasm from clients resulted in the ending of one of the program’s primary therapeutic interventions—the peer support group. This group had provided a space for Maryland I participants to discuss their mental health, job opportunities, post-injury life experiences, and strategies for avoiding reinjury. In contrast, because the Maryland II program was able to avoid a decrease in staff it was able to maintain their peer support group in a virtual format. However, the lead case worker reported that clients did not respond as well to this approach, often commenting that they desired to return to in-person peer support. The Maryland II program director indicated that even when restrictions for in-person care were lifted, the lack of grant funding—exacerbated by the pandemic—precluded providing transportation to the program for in-person peer support. The program director clarified that the grant funding was only enough to support the salaries of the current staff and not enough to hire additional full-time staff nor to improve services.

Maryland I staff indicated that their ability to meet the needs of clients was greatly diminished after the program manager rapidly left in the fall of 2021. This loss of leadership further reduced the program’s access to institutional resources and support, ultimately leaving the sole case worker with limited ability to accomplish his work and no assistance with managing complex cases. The shortage of staff resulted in the complete cessation of recruitment for the program. The primary case worker at Maryland I stated,

“We don’t have the capacity to take on new people that might potentially be complex cases... [But that’s] the case for most of the patients we see, they need a lot of attention. I just don’t, or the program doesn’t have the capacity to take that on. Especially for a program that is open ended, where they could be in forever if they need to... If we had the staff, we could do so.”

Similarly, the Maryland II program had to refer clients to therapists at other organizations because the HVIP did not have a licensed clinician. While referrals to other organizations may be useful in increasing the scope of available services, program staff noted that participants did not feel trusting toward other service providers or felt as though the quality of services were poor. These issues resulted in participants either refusing services or failing to continue to use them after initial attempts.

Thus, the lack of adequate staffing at both programs precluded the possibility of providing comprehensive care to their clients. This reduced capacity intensified levels of stress for staff, as they felt that limited resources and support undermined their ability to best support clients. Burnout posed a serious issue for both programs. Staff cited their marginal position within the hospital, insufficient support for the stressors of working with a highly marginalized population, and excessive caseloads as the most significant contributing factors. The level of burnout experienced by staff invariably impacted their ability to offer the highest quality of care for HVIP participants and in some cases reduced the number of patients who were contacted at bedside.

3.3. Restrictions on entering the hospital and HVIP

As a response to changes in COVID-19 infection, hospitalizations, and death rates, the HVIPs experienced mandated altered accessibility to the primary institutional spaces where staff work. This barrier was particularly significant for the Maryland I program, as it is located in a professional building approximately two blocks from the main hospital. Because of its location, HVIP clients experienced different restrictions for receiving services compared to other outpatients who received care in the hospital. These guidelines dramatically limited in-person interaction for both staff and participants. At the beginning of 2022, the changes in access to services included barring the entrance for all program participants to the building where the HVIP was located. The primary case worker at Maryland I noted how this impeded service provision, “[Clients] not being able to do things in person anymore is frustrating. Because now they are relegated to strictly doing it by phone or over the computer, and those things have barriers themselves.” These barriers include clients’ limited access to appropriate technology, unreliable access to Wi-Fi or cellular data, and unfamiliarity with the applications used to conduct telehealth. The case worker stated that restrictions to in-person meetings were detrimental to his ability to support clients, as he emphasized that violence intervention work is predicated upon developing strong relationships. The inability to foster these connections was particularly challenging for those clients who had mental health issues, as they felt isolated from the program and desired in-person services.

The shift to an online service provision model is an issue in Baltimore, as over 40% of households do not have wireline internet access. The lack of stable access to the internet is concentrated in the poorest neighborhoods where HVIP participants frequently live. Additionally, one third of homes lack a computer or tablet, with the majority again concentrated in poor neighborhoods (see [Horrigan, 2020](#)). Similarly, in Wards 7 and 8 where most Maryland II participants from Washington, D. C. live, the rates of inadequate or non-existent internet access are three times higher compared to the District overall (see [Hendey and Su, 2018](#)). One Maryland I case worker noted “virtual isn’t working too well, so you know, you try to be optimists, like, okay, well we are going to have group and everybody will get on zoom, [but that just doesn’t work].” The Maryland II case worker stated that those who most regularly participated in the virtual group meetings were the ones who had developed a connection with each other and staff at the in-person meetings prior to the pandemic. He explained that it was much harder to achieve the deeper level of connection needed with participants in a strictly virtual setting. These differing levels of interaction adversely impacted services at Maryland II’s HVIP, with less programmatic and peer support. Maryland I essentially shut down access to services for potential new participants and greatly lessened those for existing program members.

While the Maryland I case worker, who was a licensed clinical social worker, was able to maintain individual virtual therapy appointments with some clients, he noted that most participants who received individual therapy indicated virtual sessions were not as useful in discussing their psychological well-being. The majority of the clients with access to the internet felt virtual therapy sessions invaded their personal space

and were uncomfortable discussing their mental health in their places of residence. This was particularly true for those who were living with other people during the pandemic. During the Maryland II attempts at a virtual peer group there were often other people in the background of other participants who could overhear the experiences from other HVIP clients. This lack of confidentiality undermined the ability to comfortably discuss psychological wellbeing and coping strategies. Moreover, as restrictions for in-person interactions were lifted, difficulties continuing group sessions persisted. The Maryland I primary case manager described,

“With the pandemic, everything came to a halt. I’ve been trying to get [the peer support group] restarted... It’s been really hard to get back in. [Some participants] don’t want to wear masks. They have their own reservations about being in public.”

Overall, these barriers to service provision are significant for staff given that they were tasked with addressing pandemic-related social insecurity and psychological distress without being able to work in-person with clients. This was particularly difficult when trying to assist with clients’ fears about being evicted or re-incarcerated, delayed court hearings, inability to connect with their parole officers, increased substance use, post-traumatic stress disorders, and depressive symptoms.

4. Discussion

While all HVIPs experience implementation challenges, barriers to service provision were heightened during the COVID-19 pandemic due to worsening of already insufficient financial support and resources, inadequate staffing, and a shift to virtual programming or loss of program services due to restrictions on in-person care. In Maryland, programs had hoped to secure funding through the state government to support their work during the pandemic. The governor’s initial veto of SB 708 occurred nearly two months after the COVID-19 shutdown and at the height of the first wave of infections—this veto would not be overturned until the following January. In an official letter to the President of the Senate and Speaker of the House of Maryland, the governor noted that he vetoed the bill because the legislature had not passed other bills that he had wanted passed. In acknowledging that gun violence remains a central issue for the state, he emphasized support for increasingly punitive approaches to violence prevention, including *The Violent Firearms Offenders Act* which greatly increases the penalties for individuals who possess illegal firearms. Support for these types of measures underscores the governor’s reluctance to treat gun violence as a public health crisis, again mirrored in his office’s failure to release mandated violence intervention funding to the state’s two busiest programs. These findings underscore the tenuous position that HVIPs in Maryland are placed in because of their reliance on grants such as the Maryland Violence Intervention and Prevention Program Fund administered by the governor’s office.

The lack of funding support during the convergence of two public health crises severely limited the delivery of critical psychosocial services to violently injured patients, all of whom experienced physical and psychological trauma. These issues were compounded by poor institutional awareness of the vital services provided by HVIPs—exemplified by redeploying critical staff to deliver PPE—and an apparent lack of commitment to the health of program participants. We regard this shift of resources away from a vulnerable population, of disproportionately low-income young Black men, as a form of structural injustice in the healthcare system.

While there are unique contextual factors in Maryland, it is likely that issues surrounding a lack of support broadly impact grant funded HVIPs across the country. The narratives of staff at both programs highlight the need for more robust support for HVIPs and a greater awareness of their role in caring for survivors of gun violence. While programs are able to secure grants to initially pay staff, purchase supplies, and offer services for participants, the uncertainty of receiving

these grants dramatically undermines staff morale and the long-term feasibility of these programs. A shift toward supporting programs through state sponsored hospital funding offers a viable means of stabilizing these programs to ensure the delivery of critical psychosocial services and reduce staff turnover. Staff were clear that sufficient institutional support must include adequate staffing to reduce the number of active cases for each case worker, funds to meet the basic needs of clients (emergency food, transportation, telephone), and procedures to reduce burnout. While these violence prevention programs remain hospital-based, they can no longer be relegated to second-rate programs within the hospital system. A recognition of the very complex, long-term needs of survivors is also essential, as staffing decisions need to take this in account.

The failure to provide adequate support ultimately restricts the recruitment of new patients and precludes the efficient delivery of services to current program participants. Unfortunately, new violently injured trauma patients, many who could benefit from services, did not have the opportunity to engage with the programs at all. The inability to address the needs of new and current participants has the potential to affect long term health outcomes. Research has shown that the COVID-19 and gun violence disproportionately impact poor communities of color resulting in increased mental illness, stress, social isolation, and substance abuse. For survivors of gun violence in HVIPs with limited psychosocial services and for new patients offered none at all, the likelihood of repeat violent victimization and/or offending may be increased. Although the data presented has limitations, the findings are indicative of—at least in Maryland—a failed public health response to the gun violence epidemic. The fundamental challenges presented to the typical methods of HVIP work during the pandemic, including the limiting of approaching and recruiting patients at bedside and in-person service provision, have underscored the importance of developing alternative methods of fostering trust and rapport with participants. Going forward, policies and practices of HVIPs must be conducive to building relationships with populations that have historically been marginalized by the healthcare, criminal justice, and social service systems.

Further exploration of the negative impact of COVID-19 on HVIP implementation and health outcomes as well as strategies for optimal program operation during a public health crisis are warranted. The pandemic-imposed challenges HVIPs experienced highlight larger sustainability issues that call for governmental financial support of HVIPs. While this work provides an initial understanding of the challenges HVIPs face during the ongoing COVID-19 pandemic, a broader examination of the long-term negative health impacts on young Black men who survive violent assaults is needed. The results of these case studies suggest that the current method of delivering virtual psychosocial services/telehealth interventions for HVIP participants was not an effective nor efficient alternative approach to in-person programming. This finding supports similar research on the impact of COVID-19 on community violence intervention (CVI) programs and HVIPs (see [Alzheimer et al., 2020](#)). Participants described the desire for in-person services, specifically peer support groups. They also discussed how virtual services affected their ability to make connections to staff and other participants, raising concerns regarding confidentiality and privacy. These findings suggest the need for more research on digital health interventions for survivors of violent injury in a ways that they find most useful.

These recommendations for future research and policy offer a viable means to address the marginal position of HVIPs and the need for innovative intervention strategies. In order for HVIPs to meaningfully engage in injury prevention, they must be sensitive to the broader social milieu in which they operate. Violence prevention cannot be done effectively with limited support and stability—future policy decisions must ensure that prevention remains a priority even when hospital systems experiences stressors. Centering the perspectives of frontline workers and the participants they work with must be coupled with

robust institutional support.

5. Limitations

A case study design was used for this research, thus limiting the findings to two HVIPs in Maryland. Expansion of this research with a larger sample size is needed to further saturate themes to deepen an understanding of how local contextual factors shape staff and participant experiences with pandemic-related barriers to care. There is a dearth of data on how CVIs and HVIPs have been responding to increased gun violence during the pandemic. More quantitative and qualitative studies are urgently needed to assess the impact of the pandemic on staffing, institutional support, resources, the delivery of services, and social and health outcomes for young Black men participating in these programs. We recommend that academic institutions and national CVI organizations, such as The Health Alliance for Violence Intervention and Cure Violence, conduct large scale studies on the impact of the pandemic on violence intervention work. This will allow a more comprehensive understanding of pandemic-related barriers and their impact across multiple programs in the United States. These studies must center the perspectives of those most impacted by the intersection of both public health crises, including the strategies they have used to stay safe with limited support from violence intervention programs and society as a whole. While this research found burnout was a significant issue for HVIP staff members, further studies must examine how staff experiences with burnout are specifically related to the lack of institutional support in working with highly stigmatized populations as well as unrealistic workloads. This focus must include attention to the ways in which HVIPs are positioned within institutional contexts that have long legacies of racial discrimination.

6. Conclusion

The COVID-19 pandemic exposed how poor social determinants of health and inadequate healthcare resources disproportionately increased infection rates and deaths among Black Americans; we similarly argue that the pandemic also exposed the deficiencies in how HVIPs operated pre-pandemic. This research, coupled with the emergent literature examining the impact of the pandemic on violence prevention strategies, suggests that the challenges experienced by these programs during the pandemic are largely systemic. These findings are supported by systematic reviews of the effectiveness of HVIPs which show mixed effectiveness. More data is needed from a broader set of institutions for conclusive answers on the impact of the COVID-19 pandemic on the provision of HVIP services. A call to action by stakeholders for federal support is key to ensure the sustainability of HVIPs. While the proposed \$5 billion dollars allocated for CVIs under President Biden's *Build Back Better* jobs and infrastructure plan is a start, increased research funding through federal, state, and local initiatives to evaluate the effectiveness of HVIPs is needed. We contend this must include specific process evaluation during the current pandemic and a commitment to centering the perspectives of those most impacted by the convergence of these two public health crises.

Disclosure of funding and possible conflicts of interest

The collection of data by William Wical was supported by a National Science Foundation, Doctoral Dissertation Research Improvement Grant (Award # 2117054) and a Wenner-Gren Foundation, Dissertation Fieldwork Grant (Award #5383152402). The efforts of Nakita Lovelady were supported by the UAMS NIDA T32 Addiction Research Training Program (#T32 DA022981); NIMHD Arkansas Center for Health Disparities (#U54 MD002329); and the NCATS funded UAMS Translational Research Institute (#KL2 TR003108). The authors have no conflicts of interest to report.

CRedit authorship contribution statement

William Wical: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft, Writing – review & editing. **Melike Harfouche:** Conceptualization, Methodology, Investigation, Writing – original draft. **Nakita Lovelady:** Conceptualization, Writing – original draft. **Nathan Aguilar:** Conceptualization, Formal analysis, Writing – original draft. **David Ross:** Conceptualization, Methodology, Writing – original draft. **Joseph B. Richardson:** Conceptualization, Methodology, Formal analysis, Writing – original draft, Writing – review & editing.

Declaration of Competing Interest

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

Data availability

The data that has been used is confidential.

References

- Alcendor, D.J., 2020. Racial disparities-associated COVID-19 mortality among minority populations in the U.S. *J. Clin. Med.* 9 (8), 2442.
- Altheimer, L., Duda-Banwar, J., Schreck, C.J., 2020. The impact of CoViD-19 on community-based violence interventions. *Am. J. Crim. Justice* 45 (4), 810–819.
- Baciu, A., Negussie, Y., Geller, A., Weinstein, J.N., National Academies of Sciences, Engineering, and Medicine, 2017. The root causes of health inequity. In: *Communities in Action: Pathways to Health Equity*. National Academies Press (US).
- Beckett, L., 2015. How the gun control debate ignores black lives. In: *Propublica*. November, 24.
- Bonne, S., Dicker, R.A., 2020. Hospital-based violence intervention programs to address social determinants of health and violence. *Curr. Trauma Rep.* 1–6.
- Centers for Disease Control and Prevention, 2020. Web-Based Injury Statistics Query and Reporting System (WISQARS). *Injury Mortality Reports*. Accessed 2020.
- Cooper, C., Eslinger, D., Nash, D., Al Zawahri, J., Stolley, P., 2000. Repeat victims of violence: report of a large concurrent case-control study. *Arch. Surg.* 135 (7), 837–843.
- Cooper, C., Eslinger, D.M., Stolley, P.D., 2006. Hospital-based violence intervention programs work. *J. Trauma Acute Care Surg.* 61 (3), 534–540.
- Dalsania, A.K., Fastiggi, M.J., Kahlam, A., Shah, R., Patel, K., Shiau, S., DallaPiazza, M., 2021. The relationship between social determinants of health and racial disparities in COVID-19 mortality. *J. Racial Ethn. Health Disparities* 1–8.
- Dicker, R.A., Jaeger, S., Knudson, M.M., Mackersie, R.C., Morabito, D.J., Antezana, J., Texada, M., 2009. Where do we go from here? Interim analysis to forge ahead in violence prevention. *J. Trauma Acute Care Surg.* 67 (6), 1169–1175.
- Evans, D., Vega, A., 2018. Critical care: the important role of hospital-based violence intervention programs. In: *Denormalizing Violence: A Series of Reports From the John Jay College Evaluation of Cure Violence Programs in New York City*. Research and Evaluation Center, John Jay College of Criminal Justice, City University of New York, New York, NY.
- Everytown Research & Policy, 2022, March 11. Gun violence and covid-19 in 2020: A year of colliding crises. In: *Everytown Research & Policy*. Retrieved April 15, 2022, from <https://everytownresearch.org/report/gun-violence-and-covid-19-in-2020-a-year-of-colliding-crises>.
- Fernandez, M., 2020, May 7. U.S. still has a gun violence problem despite coronavirus lockdowns. In: *Axios*. Retrieved April 15, 2022, from <https://www.axios.com/coronavirus-gun-violence-shootings-crime-rate>.
- Friedman, J., Karandinos, G., Hart, L.K., Castrillo, F.M., Graetz, N., Bourgois, P., 2019. Structural vulnerability to narcotics-driven firearm violence: an ethnographic and epidemiological study of Philadelphia's Puerto Rican inner-city. *PLoS one* 14 (11), e0225376.
- Gauthier, G.R., Smith, J.A., García, C., Garcia, M.A., Thomas, P.A., 2021. Exacerbating inequalities: social networks, racial/ethnic disparities, and the COVID-19 pandemic in the United States. *J. Gerontol. Ser. B* 76 (3), e88–e92.
- Giffords Law Center to Prevent Gun Violence, 2020. Statistics. In: *Giffords*. <https://giffords.org/lawcenter/gun-violence-statistics/>.
- Gorges, R.J., Konetzka, R.T., 2021. Factors associated with racial differences in deaths among nursing home residents with COVID-19 infection in the US. *JAMA Netw. Open* 4 (2), e2037431.
- Hendey, L., Su, Y., 2018. Closing Equity Gaps in DC's Wards and Neighborhoods. *Urban Institute*.
- Horrigan, J.B., 2020. Baltimore's Digital Divide: Gaps in Internet Connectivity and the Impact on Low-Income City Residents. *The Abell Report*. Volume 33, No. 4. Abell Foundation.
- Kim, S.J., Bostwick, W., 2020. Social vulnerability and racial inequality in COVID-19 deaths in Chicago. *Health Educ. Behav.* 47 (4), 509–513.
- Lalchandani, P., Strong, B.L., Harfouche, M.N., Diaz, J.J., Scalea, T.M., 2022. Influence of CoViD-19 restrictions on urban violence. *Am. Surg.* 88 (11), 1928–1930.
- LeCompte, M.D., Schensul, J.J., 1999. *Analyzing & Interpreting Ethnographic Data* (Vol. 5). Rowman Altamira.
- Lincoln, Y.S., Guba, E.G., 1986. But is it rigorous? Trustworthiness and authenticity in naturalistic evaluation. *New Dir. Program Eval.* 1986 (30), 73–84.
- Morse, J.M., 2010. Simultaneous and sequential qualitative mixed method designs. *Qual. Inq.* 16 (6), 483–491.
- Nass, D., 2020, November 24. Shootings are a glaring exception to the coronavirus crime drop. In: *The Trace*. Retrieved April 15, 2022, from <https://www.thetrace.org/2020/04/coronavirus-gun-violence-stay-at-home-orders/>.
- Njus, M., Vil, C., Sheppard, M., Hall, E., 2021. Hospital-based violence intervention programs: an essential relief system in the COVID-19 pandemic. *J. Am. Coll. Surg.* 233 (5), S296.
- Purtile, J., Dicker, R., Cooper, C., Corbin, T., Greene, M.B., Marks, A., Creaser, D., Topp, D., Moreland, D., 2013. Hospital-based violence intervention programs save lives and money. *J. Trauma Acute Care Surg.* 75 (2), 331–333.
- Rapier, G., 2020, June 4. This chart shows fewer than half of black Americans were employed in April, highlighting how coronavirus layoffs have disproportionately affected black communities. In: *Business Insider*. Retrieved April 15, 2022, from <https://www.businessinsider.com/black-americans-unemployment-coronavirus-layoffs-disproportionately-high-april-bls-data-2020-6>.
- Richardson, J.B., Vil, C.S., Sharpe, T., Wagner, M., Cooper, C., 2016. Risk factors for recurrent violent injury among black men. *J. Surg. Res.* 204 (1), 261–266.
- Richardson, J.B., Wical, W., Kottage, N., Galloway, N., Bullock, C., 2021. Staying out of the way: perceptions of digital non-emergency medical transportation services, barriers, and access to care among young black male survivors of firearm violence. *J. Prim. Prev.* 42 (1), 43–58.
- Richardson Jr., J.B., Wical, W., Kottage, N., Bullock, C., 2020. Shook ones: understanding the intersection of nonfatal violent firearm injury, incarceration, and traumatic stress among young black men. *Am. J. Mens Health* 14 (6).
- Rogers, T.N., Rogers, C.R., VanSant-Webb, E., Gu, L.Y., Yan, B., Qeadan, F., 2020. Racial disparities in COVID-19 mortality among essential workers in the United States. *World Med. Health Pol.* 12 (3), 311–327.
- Ruprecht, M.M., Wang, X., Johnson, A.K., Xu, J., Felt, D., Ihenacho, S., Phillips II, G., 2021. Evidence of social and structural COVID-19 disparities by sexual orientation, gender identity, and race/ethnicity in an urban environment. *J. Urban Health* 98 (1), 27–40.
- Ssentongo, P., Fronterre, C., Ssentongo, A.E., Advani, S., Heilbrunn, E.S., Hazelton, J.P., Chinchilli, V.M., 2021. Gun violence incidence during the COVID-19 pandemic is higher than before the pandemic in the United States. *Sci. Rep.* 11 (1), 1–8.
- Wical, W., Richardson, J., Bullock, C., 2020. A credible messenger: the role of the violence intervention specialist in the lives of young black male survivors of violence. *Violence Gend.* 7 (2), 66–69.
- Zakrisson, T.L., Puyana, J.C., Britt, L.D., 2017. Gun violence is structural violence: our role as trauma surgeons. *J. Trauma Acute Care Surg.* 82 (1), 224.