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Activity Space Assessments to Investigate Neighborhood Exposure to Racism-Related Stress and Related Substance Use Among Young Black Men: Connecticut, 2019

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ABSTRACT (ENGLISH)

Objectives. To use activity space assessments to investigate neighborhood exposures that may heighten young Black men's vulnerability to substance use and misuse. Methods. We surveyed young Black men in New Haven, Connecticut in 2019 on the locations (activity spaces) they traveled to in a typical week and their experiences of racism and any alcohol and cannabis use at each location. Results. A total of 112 young Black men (mean age = 23.57 years; SD = 3.20) identified 583 activity spaces. There was significant overlap between racism-related events and substance use (alcohol and cannabis use) at specific locations. Areas with a higher prevalence of violent crime also had a greater frequency of racism-related events and substance use. Conclusions. An activity space approach is a promising method for integrating objective and subjective experiences within neighborhood contexts to better understand the frequency and co-occurrence of racism-related stress and substance use among young Black men. (Am J Public Health. 2023;113(S2): S136-S139. https://doi.org/10.2105/AJPH.2023.307254)

FULL TEXT

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Objectives. To use activity space assessments to investigate neighborhood exposures that may heighten young Black men's vulnerability to substance use and misuse.

Methods. We surveyed young Black men in New Haven, Connecticut in 2019 on the locations (activity spaces) they traveled to in a typical week and their experiences of racism and any alcohol and cannabis use at each location.

Results. A total of 112 young Black men (mean age = 23.57 years; SD = 3.20) identified 583 activity spaces. There was significant overlap between racism-related events and substance use (alcohol and cannabis use) at specific locations. Areas with a higher prevalence of violent crime also had a greater frequency of racism-related events and substance use.

Conclusions. An activity space approach is a promising method for integrating objective and subjective experiences within neighborhood contexts to better understand the frequency and co-occurrence of racism-related stress and substance use among young Black men. (Am J Public Health. 2023;113(S2): S136-S139. https://doi.org/10.2105/AJPH.2023.307254)

Young Black men experience a disproportionate amount of racism-related stressors, including social disadvantage, violence, and aggressive and racialized policing.1 Racism-related stress (the physical embodiment of these stressors) is a unique predictor of psychosocial distress and is associated with negative health outcomes, including alcohol and cannabis misuse amongyoung Black men.2,3 Neighborhoods have historically been a consistent source of racismrelated stressors, which manifest through racialized risk environments. Racialized risk environment models conceptualize how physical, social, economic, and political components of a space can be racialized to perpetuate racial health inequities and maintain structural oppression.4 Current conceptualizations of neighborhoods often focus on racialized policing, which may be modified through legislative policy (e.g., reorganizing police funding).5 Missing, however, is the centering of young Black men's subjective experiences in these neighborhoods. We discuss 1 method to investigate neighborhood contexts that may advance research and interventions to address young Black men's vulnerability to alcohol and cannabis use.

Despite recent advances, methodological weaknesses for assessing neighborhood effects on health remain.6 First, these methods do not adequately capture how neighborhood contexts are experienced differently by individuals during their routine activities. Second, reliance on residence alone to determine risk can lead to inaccuracies and does not account for the extraneighborhood settings young people experience during their routine activities. Third, current methods often focus on 1 risk factor at a time but rarely investigate the colocation and co-occurrence of risk. An activity space approach has the potential to address these limitations by providing information on how individuals perceive and experience the varied social and physical spaces they inhabit during their daily activities.7 By gathering specific information about racism-related stressors, as well as substance use, within these spaces, we can more thoroughly investigate the specific social and physical characteristics of neighborhood structures that elevate the co-occurrence ofthese health risks.

One key finding from the application of racialized risk environment models is that the proliferation of violent crime within Black communities is a salient driver of health risks. In this study, we integrate components of activity space assessments, racialized risk environment models, and models of community violence to investigate the co-occurrence of racism-related stress and substance use among young Black men in New Haven, a small urban center in Connecticut.

METHODS

We conducted a cross-sectional activity space assessment of a community sample of Black men in 2019. Eligible participants were Black men aged 18 to 29 years who had resided in New Haven for at least 6 months, self-reported vaginal intercourse in the past 3 months, and were HIV negative. We recruited participants using social media, flyers in relevant venues, and community referrals. We captured activity spaces using an in-person ecological interview (i.e., activity space assessment) in which participants listed and described all the locations (activity spaces) they traveled to in a typical week.7 For each location, participants reported whether they used any alcohol or cannabis at the location (substance use; yes = 1 and no = 0) and were unfairly treated, harassed, or ridiculed at the location (racism-related event; yes = 1 and no = 0). Participants who responded yes were provided a checklist to select the reasons why they thought they were unfairly treated (e.g., race, gender, physical appearance, and intoxication). We combined race and physical appearance and coded it "racism-related event" based on participants' description ofthe event and previous work with this population.8,9 Participants received a $25 gift card for completing an activity space assessment and a Qualtrics survey on demographics, psychosocial factors, substance use, and sexual behaviors. Detailed study methods are published elsewhere.9

We plotted the X-Y coordinates of racism-related and substance use events using ArcGIS (10.9; Redlands, CA). Using publicly available New Haven police data, we plotted the coordinates over violent crime (e.g., robbery, assault, and crimes involving firearms; Figure 1)to illustrate how these health risks varied across 1 indicator of racialized risk environments. We conducted a point pattern analysis using the nearest distance analysis and Ripley's K-function to ensure that our statistics were unbiased.10 Nearest distance measures whether the different events co-occurred by calculating the summary ofthe nearest distance from 1 type of event to another. The Ripley's K-function computes the number of events within the given distance from any event in the data set. Under the null hypothesis of complete spatial randomness, the expected value of K(r) given the distance r is the same as the area of a circle with radius r, pr2.1

RESULTS

A total of 112 Black men (mean age = 23.57 years; SD = 3.20 years) identified 583 activity spaces. They reported 186 substance use and racism-related events; substance use events (n = 156) were reported about 2.5 times more frequently than racism-related events (n 5 65) and 35 events co-occurred (Figure 1). The mean nearest distance between substance use and racismrelated events was 151.60 meters (SD 5 417.97 meters). All events were strongly clustered compared with the pattern from the complete spatial randomness hypothesis. We identified significant event co-occurrence by inspecting the observed data that were not inside the 95% confidence envelope from 999 Monte Carlo simulations. Areas with a higher prevalence of violent crime also had a greater frequency of substance use and racism-related events.

DISCUSSION

This study used activity space assessments along with concepts from models of racialized risk environments and community violence to identify racismrelated stress and its co-occurrence with substance use. Our findings suggest that the frequency and co-clustering of these health risks vary by the distribution of violent crime within New Haven. Comprehensive approaches to addressing alcohol and cannabis misuse among young Black men should attend to the role of racism-related stress in substance use. Interventions that seek to increase health-promotive neighborhood contexts and reduce racism-related stressors through community capacity building and economic development could be coupled with individual-level capacitance and resiliency-building programs to promote positive coping strategies that reduce substance use.1,12

Study findings support the utility of activity space assessments as a method to capture both the subjective and objective experiences of young Black men in the neighborhoods they traverse.6 Conducting subjective and objective assessments of an activity space may provide a more nuanced understanding of how young Black men perceive risk, safety, and opportunity within the locations they frequent-residential and nonhome. This method also promotes the design of location- and event-based substance use prevention interventions tailored to counter the spatial manifestations of racism-related stressors within neighborhood contexts. Moreover, activity space assessments may also facilitate the development of individual- and community-level metrics to assess subjective experiences, which may lead to creating and assessing identity-affirming spaces for young Black men and policies to combat the negative effects community violence has on health.

Although it is cross-sectional, to our knowledge, this is the first study to examine the frequency and co-occurrence of racism-related stress and substance use employing an activity space approach. It focused on 1 small urban environment with high violent crime and may not be generalizable to other contexts. The methods used in this study did not allow us to determine whether 1 event preceded the other, which will be important for future investigations. Future research may also benefit from using activity space assessments to determine how overlapping marginalized social positions (e.g., socioeconomic status and sexual identities) may differentially heighten health risks within neighborhoods.

PUBLIC HEALTH IMPLICATIONS

An activity space approach is a promising method for integrating objective and subjective experiences within neighborhood contexts to better understand racism-related stress and substance use among young Black men.

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T. Taggart, T. Kershaw, and N. Milburn contributed to the conceptualization, funding acquisition, and design of the study. All authors contributed to the acquisition, analysis, or interpretation of data. T. Taggart, Y. Ransome, and I. Song conducted the statistical analyses. Project administration, technical, and material support were provided by T. Taggart and A. Andreou. T. Taggart drafted the article. All authors contributed to the revisions of the article and reviewed and approved the final draft.

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The authors have no conflicts of interest to declare.

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Achieving Health Equity and Continuity of Care for Black and Latinx People Living With HIV

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FULL TEXT

The COVID-19 outbreak and public health response have exacerbated racial health inequities, including those related to HIV. Black and Latinx communities are disproportionately impacted by morbidity and mortality associated with the intersecting pandemics of HIV and COVID-19. Structural racism has manifested in race-related social determinants of health (SDOH) that underlie these health inequities.1

Black and Latinx people living with HIV(PLWH) are disproportionately exposed to poverty, barriers to health care access, and trauma, all of which increase the risk of substance use and mental health symptoms that interact with SDOH and compromise treatment adherence.2 In addition, PLWH are more likely to experience medical comorbidities, including cardiovascular disease, the leading cause of mortality in the United States and an independent risk factor for poor COVID-19-related outcomes.3 As these underlying risk factors increase Black and Latinx PLWH's vulnerability to morbidity related to both HIV and COVID-19, understanding their health strategies during these intersecting health crises could reveal important strength-based approaches for mitigating the impact of SDOH among these populations.

In this editorial, we consider how the care experiences of Black and Latinx PLWH could inform culturally relevant, multilevel strategies for managing public health crises like COVID-19 in the context of structural racism and bolster care for PLWH facing new health threats. We focus on two conditions of the COVID-19 pandemic: (1) disease prevention and management and (2) in-person care disruptions and the rapid uptake of telehealth.

TRANSLATING PUBLIC HEALTH STRATEGIES FOR HIV TO COVID-19

Public health efforts to mitigate COVID-19 risks have relied on behavioral and social change strategies, many stemming from lessons learned from the HIV pandemic.4 Accordingly, research has called for expansions of investments in HIV infrastructure, policies, and research, as well as the engagement of PLWH communities, to develop effective COVID-19 public health responses.5 While there are obvious differences between HIV and COVID-19 (e.g., mode of transmission),5 individual-level mitigation efforts have failed to identify and leverage PLWH's use of patientcentered strategies to minimize COVID-19 risks. This is a missed opportunity.

Identifying attitudes and skills that PLWH may have transferred from their management of HIV to the mitigation of COVID-19 risk could inform prevention efforts aimed at minimizing new public health threats. For example, health care professionals could be empowered to foster self-efficacy among patients living with chronic illness (and, thus, at risk for emerging public health crises) by building on known care strategies and highlighting similarities in risk management approaches across varying health threats. In addition, public health messages for inevitable, emerging health crises could be improved by understanding whether HIV-specific self-management strategies are translatable to manage COVID-19 risks and whether they vary as a function of common health comorbidities and SDOH that affect PLWH.

Like responses to HIV, COVID-19 responses must address race-related inequities in SDOH that confer disease risk and decrease service utilization.5 While structural-level interventions are necessary to achieve racial health equity, novel patient-centered approaches to navigating inequities should not be overlooked. Among Black and Latinx PLWH specifically, experiences navigating a racialized and chronic health condition like HIV could be translated to other public health crises as they intersect with structural racism. For instance, while living with HIV may have heightened perceptions of COVID-19 risk and engagement in protective health coping strategies for some patients, it may have increased medical mistrust, compromising ongoing HIV self-management and new COVID19 risk management for others from minoritized racial/ethnic groups.

Approaches like these could be applied not only to health equity interventions for future public health crises but also to those for PLWH. Public health responses could incorporate culturally relevant interventions that empower racialized PLWH to apply their management of previous health and social challenges to new problems. For example, resilience and critical race consciousness have been identified as facilitators of HIV care and predictors of improved immune function among Black PLWH.6,7

Interventions incorporating critical consciousness that promote awareness of and adaptive action against structural racism and other forces of oppression may increase self-efficacy and reduce HIV risk behavior and other risks associated with racialized public health crises (e.g., the opioid overdose crisis).8 Such interventions should be developed in collaboration with Black and Latinx PLWH to ensure their cultural and clinical relevance. These patientcentered strategies are an important component of risk-reduction efforts in the context of enduring race-related SDOH; however, to achieve health equity, the onus remains on institutions and policymakers to dismantle policies that maintain structural inequities perpetuating health disparities.

CONTINUITY OF CARE AND DIGITAL INCLUSION

Continuity of care has been identified by PLWH as an important component of effective treatment.9 Preventing discontinuity of care is especially important for those living with chronic illness and who experience race-related inequities in access to SDOH as these patients' treatment adherence relies on maintenance of established relationships with trusted providers. COVID-19-related public health mandates forced changes in health service delivery, including clinic closures and scaling back or suspension of non-COVID-19-related health appointments.2 Restricted in-person contact with providers led to fears of disruptions in patient health care utilization and adherence despite the rapid transition to digital platforms.

Transitioning health services to digital platforms has potential to increase the reach and frequency of care and may reduce concerns about continuity of care forthose with chronic health conditions like HIV. However, it may also widen existing health disparities among those who experience digital barriers. Like many with chronic conditions, PLWH made the transition to remote health care during the pandemic. However, inequities in digital inclusion, including health literacy, digital skills, and access to technology, as well as limited English proficiency, greatly restricted the ability of some PLWH to participate in remote monitoring of clinical care and other telehealth services.2,10 Digital inclusion itself is an SDOH that interacts with others: older, racially/ethnically minoritized, and low-income PLWH are more likely to experience lack of access to technology and low electronic health literacy, which, in turn, threaten continuity of care.11

While many Black and Latinx people lack consistent access to digital technology,10 those that do have computer or smartphone access may not have the needed skills to effectively use their device to access telemedicine or telehealth services; indeed, these populations were less likely to use video platforms than other racial/ethnic groups early in the pandemic.12 For Latinx PLWH, language barriers may further exacerbate these inequities.12 Although the challenges and successes of the COVID-19-related growth oftelemedicine have been welldocumented, understanding the health care experiences of a population that requires consistent multidisciplinary care (i.e., PLWH) during this period could inform ongoing improvements to telemedicine and ensure continuity of care for those who need it most.

This information is particularly important as COVID-19 becomes endemic. Documented inequities in telehealth access as a function of race, socioeconomic status, and language must be addressed at multiple levels to prevent the exacerbation of current inequities in health care access. Provider solutions include offering preappointment sessions that could be scheduled to aid those with difficulties accessing or utilizing technology for telehealth visits and problem-solve barriers.13

Patient-related factors associated with the effectiveness oftelemedicine must also be identified. For example, some patients report greater satisfaction with telemedicinethan in-person appointments, particularly those engaged in behavioral health treatment or facing transportation barriers to treatment.14 However, without policy solutions to increase access to and knowledge of digital technology solutions among people who are Black, Latinx, non-English speaking, and living in poverty, members of these groups will continue to be excluded from the benefits of telemedicine and experience discontinuity of care. Given the aforementioned intersectionality of Black and Latinx PLWH, this population is wellpositioned to serve as key participants in the development of such solutions.

CONCLUSION

Mitigating public health crises requires multilevel intervention, including policies and programs to address structural inequities and barriers to health care access experienced by vulnerable subpopulations. In addition, patientcentered behavioral strategies can be leveraged to mitigate health risks among those disproportionately impacted by race-related SDOH. By understanding the adaptation of public health strategies for management and continuity of care in HIV, tailored public health messages can be used to lower the risks associated with COVID-19 and other public health crises as they intersect with race-related SDOH.

Because PLWH have an increased risk of future comorbidities and complications associated with COVID-19, the management of their HIV status could be adapted to reduce exposure and risk of COVID-19 and other public health problems. For example, these management strategies have potential translations to harm reduction and drug overdose prevention, which are increasingly and disproportionately affecting Black and Latinx people with and without HIV. In addition, the telemedicine experiences of Black and Latinx PLWH during the COVID-19 pandemic could inform programs and policies that increase digital inclusion and reduce the impact of structural inequities on continuity of care in an increasingly digital health care space.

Given the enduring and pernicious nature of race-related SDOH, the skills and challenges of PLWH in morbidity prevention and care continuity should be better understood with the ultimate goal of improving health equity for Black and Latinx PLWH in the face of current and emergent health threats. .4JPH

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DETAILS

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The Promise of Racial Healing to Achieve Health Equity Through School-Based Prevention

Tan, Kevin, PhD, MSW; Mahoney, Jenna, MSW, LCSW; Campbell, Jeanna, MSW; Laursen, Tiffany, ALM; Kemp, Durriyyah, EdD; Kim, Bo-Kyung Elizabeth, PhD, MSW

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ABSTRACT (ENGLISH)

In the wake of the American Public Health Association's formal declaration of racism as a public health crisis, there is an urgent need for more approaches to promoting the socioemotional well-being of K-12 Black, Indigenous, people of color (BIPOC) students, educators, and families.1 Cumulative exposures and reexposures to direct and indirect acts of racism can adversely affect emotion regulation and the ability to sustain meaningful relationships, disrupting socioemotional health and well-being.2 Race-based stress can lead to racial trauma, and merely perceived experiences of racial discrimination can produce such stress.2

Household and community-level experiences of racial trauma have effects similar to those of other adverse childhood experiences,3,4 and calls to address racism within K-12 schools by interrupting and preventing the transmission of intergenerational cycles of trauma at the systemic, institutional, and individual levels are well placed.5,6 Such action will need to counteract the whitewashing of the public K-12 curriculum, evident through the censoring of antiracist books and the movement to ban the teaching of accurate US history about race, exacerbating generations of systemic disadvantage in BIPOC communities.7

FULL TEXT

In the wake of the American Public Health Association's formal declaration of racism as a public health crisis, there is an urgent need for more approaches to promoting the socioemotional well-being of K-12 Black, Indigenous, people of color (BIPOC) students, educators, and families.1 Cumulative exposures and reexposures to direct and indirect acts of racism can adversely affect emotion regulation and the ability to sustain meaningful relationships, disrupting socioemotional health and well-being.2 Race-based stress can lead to racial trauma, and merely perceived experiences of racial discrimination can produce such stress.2

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ANTIRACISM AND SCHOOL-BASED APPROACHES

Theory and research highlight the critical role of schools in promoting socioemotional wellness through culturally responsive programs and practices8; efforts to eradicate racism in our schools must be a priority. Interracial dialogue and programs aimed at fostering perspective taking can catalyze antiracism action and promote overall school socioemotional well-being.9 Broadly, best practices in addressing racial trauma and stress emphasize the role of radical healing, transformation, liberation, and empowerment as conduits for remedial action from the racialized cycles of stress and trauma.10,11

Social-emotional learning programs are a vital response, and they have been widely implemented across K-12 schools to address individual wellbeing.8 Yet, many existing programs fail to explicitly address interpersonal, institutional, and structural racism- manifested in a spectrum of racist acts and policies-and their harm to socialemotional well-being.12 Critics have described social-emotional learning programs that focus on interpersonal skills at the individual level without countering the ills of institutional and structural racism as promoting "White supremacy with a hug."13 Evaluations of school-based prejudice reduction programs demonstrate that simply reducing prejudice among ethnoracial majority students does not change social behaviors.14 More attention is therefore needed on strategies that challenge the system of racism. The need for more work that promotes antiracism and socioemotional wellness among K-12 populations is urgent.

THE PROMISE OF RACIAL HEALING AS PREVENTION

We believe that racial healing can offer promise as a prevention tool by directly addressing the ills of racism at both the interpersonal and broader institutional and structural levels. Racial healing is recognizing and unlearning to overcome one's internalized messages about one's own ethnoracial identity and those of others. It can promote student, educator, and parent socioemotional well-being and foster individual and collective agentic action toward dismantling White supremacy.15

Racial healing is a process that is both introspective and interpersonal. It begins with exploring our internalized racism and cycles of racial socialization in ways that bring about an integrated awareness of our own ethnoracial identities as a means of challenging privilege and fostering collective healing and systemic reforms.15 For BIPOC individuals, this may involve rejecting norms around White superiority; celebrating cultural heritage, traditions, and identities; and fostering hope and strength through solidarity with other BIPOC individuals. Among White individuals, this process could mean unlearning and challenging their own privilege that stems from White supremacy toward interrupting and disrupting cycles of interpersonal and institutional racism.15,16

Given the insidious nature of racism, schools should no longer be neutral toward racism. Instead, schools should directly address the racial healing of students, educators, and parents to positively impact individuals and communities. Much like the restorative justice work that engages all parties involved to heal and restore what is broken,17 racial healing should engage both BIPOC and White individuals in healing from historical trauma we have incurred collectively through racism. Restorative justice brings together those who have created harm with those who have been harmed in efforts to promote sustainable growth toward collective healing for the betterment of society.17

Relatedly, racial healing seeks to foster "emergence and integrative awareness"15(p20) among White individuals to deal with how they benefit both historically and contemporaneously from structural racism, but also how much they lose as a result of racism. A true recognition is necessary that undoing racism and letting go of the privilege gained at the expense of BIPOC suffering does not create new racial hierarchy with White individuals at the bottom. In fact, this recognition will liberate them from racial resentment stemming from guilt and shame.18 Racial healing, thus, can address the harms of racism collectively while seeking to repair and restore relationships in working toward a vision of a racially diverse, just, equitable, and harmonious country.

To clarify, racial healing work is not to create space for BIPOC individuals to educate and empathize with White individuals. To emphasize, this work cannot and should never be used as another mundane "diversity training" that focuses on White individuals' learning while silencing BIPOC voices. Instead, racial healing is about bringing diverse individuals together to explore their lived experiences while developing restorative actions within individuals and society.

Our research team from the School of Social Work and Cooperative Extension at the University of Illinois, UrbanaChampaign received funding from the state's Healing Illinois9 initiative to explore the promise of racial healing as an essential strategy to promote socioemotional wellness (details on Healing Illinois are provided in the Appendix, available as a supplement to the online version of this article at http://www. ajph.org). Between December 2020 and March 2021, we hosted 17 focus groups centered around racial healing involving 88 Illinois students (aged 12-18years), parents, and educators. The project aimed to understand the need, desire, and capacity for racial healing of the students, parents, and educators.

Groups were organized based on status (students, parents, and educators) and separated by their ethnoracial identity: White only, BIPOC, and mixed (both White and BIPOC individuals). The purpose of organizing groups based on status and ethnoracial identities was to explore whether themes associated with racial healing and student socioemotional needs would differ.

Overall, our study revealed the need to center students' voices in furthering this work around racial healing. Participants generally recognized the socioemotional impact of the dual stresses ofthe pandemic and racial reckoning on young people. However, students, parents, and educators alike were unprepared to talk about their fear, vulnerability, and suffering induced by racism and the political divide. Repeated calls were also made across all our groups for parents and educators to be accepting of, comfortable with, and trained in racial healing. Nonetheless, despite the hesitation to engage in racial healing and to engage in the difficult conversation on racism, we found hope in the promise of racial healing.

Students were notably far more optimistic than parents and teachers that the ills of racism can be overcome, and this optimism was particularly strong in the group of mixed White and BIPOC students. A student in this group noted that "I think [to make positive change] we need to be more self-aware with each other and be more open." One student in the BIPOC group noted that "There's been, like, a huge spark in everyone just trying to educate themselves and, like, bring awareness to everything, and it's just really good to see how many people are just willing to hop on that." Another BIPOC student emphasized that "If we are not better ourselves right now, we are bettering for our future generation." Still another student in the mixed-race group noted that addressing the harms of racism was significant not only for young people but also for parents and educators: "I think they [adults] just need to do better."

Our experience highlights the incredible resilience of students in the face of racial stress and trauma. Despite their fear, vulnerability, and suffering, they displayed a restless desire to bring about change, illustrating the importance of focusing on student voices in furthering racial healing work. Students demanded more of both themselves and adults to do something about racism, for now and for the future. The expectation is that engaging students in racial healing dialogues will cultivate a sense of optimism for the future, as indicated by our participants, consistent with preexisting approaches to addressing racial stress and trauma such as radical healing, transformation, and liberation.10,11

HOW TO PROMOTE RACIAL HEALING

Given our work in school settings, we fully recognize that multiple challenges exist in implementing the process described here in schools. For example, individuals generally rarely engage in conversations around interpersonal racism and its harms,15 teachers commonly struggle with high workloads and burnout,19 and significant institutional and structural barriers exist with respect to discussing the impact of racism with students in K-12 schools specifically.20 If racial healing is to occur, it must move beyond the traditional delivery of school programming efforts and be interwoven into day-to-day conversations with our young people. We provide four strategies to promote racial healing in schools based on our study findings.

Develop Diversity-Oriented Competencies

Many participants highlighted the need for educators to develop cultural competencies. One White student called for greater inclusion and infusion in teaching curricula concerning race, religion, and "everything." White students suggested that social media etiquette be taught, and all students stated that it is important to include young people in conversations. White parents and one BIPOC parent suggested that educators teach positive race relations through cultural competency and cultural humility. According to one White parent, students could learn that "there is diversity" that goes beyond appearance and relates to "identities, customs, and traditions." White and BIPOC parents further suggested teaching students coping skills, emotional intelligence, and conflict resolution strategies while promoting racial healing.

Coordinate Open Community Dialogues

BIPOC educators, and sometimes White educators, suggested that schools host community dialogues focusing on diverse race relations and socioemotional wellness. As part of their outreach in bridging the home-school interlinkage, schools can consider hosting racial healing workshops to provide parents with the necessary skills and support to mitigate the adverse impacts of racialized trauma and stress within their households. Attention to the composition of a school's student body and teaching and administrative force and to the quality of the school climate is critical in promoting racial healing and open conversations about race.7

BIPOC educators cautioned that BIPOC students appeared "a little bit more hesitant" when discussing "extremely touchy and sensitive topics" with White teachers. Echoing this, a BIPOC parent described conversations as necessary but "uncomfortable" and, in advocating for community dialogues, highlighted the need to acknowledge "our own humanity." Creating a safe space for BIPOC students is needed, and this means that societal and mainstream racism within non-BIPOC communities must be addressed.

Improve Schools' Socioemotional Climate

Although all groups highlighted the need to improve schools' socioemotional climate, BIPOC and White educators were more inclined to suggest it. One White educator lamented, calling out insufficiency and requesting more flexible and culturally responsive curricula, "I don't have a lot of time to diverge from [standard] content. But I also don't want to completely ignore current events." White parents wanted more communication from educators and school administrators (e.g., resources such as electronic newsletters and emails that would help parents navigate sociopolitical issues with their children). BIPOC students suggested promoting conversations about politics, assemblies to enhance awareness of diversity and civil rights, and structured time for diverse classmates to come together.

In this push to improve the school socioemotional climate, it is also essential to protect BIPOC students, educators, and families to ensure that such initiatives do not impose a "minority tax."21 In our focus groups, we observed a sense of weariness among BIPOC individuals, an example of what is known as "Black fatigue": physical and mental strain faced by BIPOC individuals as a result of the persistent and intergenerational impact of racism.22 As mentioned, racial healing cannot levy the added burden on BIPOC individuals. If true liberation and empowerment are to occur through racial healing, White individuals should proactively engage and stand up as allies with intentional learning and unlearning. Racism cannot be undone without White individuals so far as we live in a White supremacist world.

Develop Macro-Level Systems of Support

All the groups suggested macro-level systems of support in advancingthe need for racial healing. Participants highlighted the importance of increasing the number of mental health and counseling professionals in schools who can support the process of racial healing. Suggestions included creating parent-teacher apps to improve communication, increasing support, including funding and resources to allow difficult classroom discussions and conversations about race, and adding trained professionals to help in implement these suggestions. A BIPOC educator aptly summarized: "Looking ahead, there's just so much unknown. We don't know how [current events are] going to impact these kids.. .I think just really having those resources ready, the professionals out there that can help us navigate some of these difficult situations." Another BIPOC educator addressed why we need preventive strategies intersecting race relations and socioemotional well-being in schools: "The suicide rate is up, drug use is up, alcohol use is up; we have got big issues coming."

The benefits of developing systems of support for BIPOC individuals were evident in our study. At the end of our focus groups, our BIPOC participants, despite sharing that they felt overwhelmed, often expressed appreciation for the conversation and relief that it had occurred.

RACIAL HEALING AND BEYOND

We believe that schools should play an essential role in addressing the impact of racial trauma and stress and engaging in antiracism efforts across the spectrum of interpersonal, institutional, and structural barriers,20 and participants in the dialogues seemed to agree. Although there are significant challenges in K-12 schools in addressing the impacts of racism,20 we need to redouble efforts to prevent poor socioemotional outcomes caused by racial stress and trauma. Given Florida governor Ron DeSantis's recent decision to prevent the teaching of Black history in schools, urgent attention is needed to curb the impact of such structural assaults on teaching about racism; there is a strong likelihood that other states will follow suit with similar policies.23

These types of backlash further demonstrate the need for collective racial healing. We, as a country, are suffering from divisive thinking that in countering racist history, we somehow diminish the accomplishments of this country. Learning from history and standing against racism will be an enormous feat as a society. Legislative action at the federal level is necessary to elicit support and protection for racial healing work. Lobbying legislators to take a stand on racism and support racial healing is necessary. Most important, White and BIPOC individuals must work together toward racial healing. We all need to heal.

Racial healing must come first to achieve socioemotional well-being among all students. This truly is the first step toward achieving health equity among school-aged children, and this healing must occur across ethnoracial groups, students, and adults. As the students held firm to their hope in our focus groups, we must be as hopeful as they are that schools can be sites of healing and liberation and catalysts for societal changes. Our young people deserve nothing less. >4JPH

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K. Tan, J. Mahoney, and B.-K. E. Kim originated and discussed the original conceptual ideas. J. Mahoney, J. Campbell, and T. Laursen conducted the literature review. J. Campbell and T. Laursen performed the analysis. D. Kemp and B.-K. E. Kim provided critical feedback. K. Tan took the lead in writing the article, but all authors contributed to and helped shape the article.

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CONFLICTS OF INTEREST

The authors have no conflicts of Interest to disclose.

HUMAN PARTICIPANT PROTECTION

The institutional review board ofthe University of Illinois, Urbana-Champaign, approved the study procedures.

Sidebar

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Toward a Socioecological Model of Training and Mentoring to Reduce Disparities in Mental Health Service Use Among Black Youths

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ABSTRACT (ENGLISH)

Across clinical settings, significant racial disparities exist in access to and the quality of mental health services. Relative to other racial/ethnic groups, Black youths are universally underserved in mental health care, despite the profoundly increasing rates of unmet psychological need within this population.1 Although the reasons behind these disparities are multifaceted, attention is often placed on individualor community-level characteristics (e.g., stigma, mistrust, socioeconomic factors) to explain why such disparities continue to persist. However, public health professionals (PHPs) may also contribute to and perpetuate these disparities, as their lack of culturally responsive training and mentorship leave them ill-equipped to appropriately respond to the unique challenges that Black youths encounter in our highly racialized society.2

The article by Hampton-Anderson et al. (p. S140) is an important contribution to the literature; it asserts that the reduction of mental health care disparities is closely tied to the provision (or lack thereof) of culturally relevant trainings and mentorship to PHPs. Specifically, the authors ground their article within a socioecological framework and articulate the critical need for culturally responsive trainings and mentorship across three key areas. First, they contend that training and mentorship are needed to bolster the awareness and skills of PHPs to understand how risk and resilience among Black youths are shaped by social and cultural factors embedded across ecological systems (e.g., schools, neighborhoods). Second, Hampton-Anderson et al. assert that training and mentorship are also needed to assist PHPs in flexibly balancing treating and advocating for Black youths seeking mental health services who may also be navigating inequitable systemsand policies that may further compound presenting problems (e.g., encounters with law enforcement). Third, they note that training and mentorship are needed to enhance case conceptualization and approaches to treatment selection from a strengths-based perspective. They call upon such case conceptualizations to build upon cultural strengths, values, and practices (e.g., incorporation of the family) to address presenting concerns more effectively. Targeting training as an intervention point to reduce disparities has significant downstream effects that can fundamentally alter how future generations of PHPs are taught, how clinical interventions are approached, and how issues pertaining to race and culture are prioritized within clinical practice.

FULL TEXT

Across clinical settings, significant racial disparities exist in access to and the quality of mental health services. Relative to other racial/ethnic groups, Black youths are universally underserved in mental health care, despite the profoundly increasing rates of unmet psychological need within this population.1 Although the reasons behind these disparities are multifaceted, attention is often placed on individualor community-level characteristics (e.g., stigma, mistrust, socioeconomic factors) to explain why such disparities continue to persist. However, public health professionals (PHPs) may also contribute to and perpetuate these disparities, as their lack of culturally responsive training and mentorship leave them ill-equipped to appropriately respond to the unique challenges that Black youths encounter in our highly racialized society.2

The article by Hampton-Anderson et al. (p. S140) is an important contribution to the literature; it asserts that the reduction of mental health care disparities is closely tied to the provision (or lack thereof) of culturally relevant trainings and mentorship to PHPs. Specifically, the authors ground their article within a socioecological framework and articulate the critical need for culturally responsive trainings and mentorship across three key areas. First, they contend that training and mentorship are needed to bolster the awareness and skills of PHPs to understand how risk and resilience among Black youths are shaped by social and cultural factors embedded across ecological systems (e.g., schools, neighborhoods). Second, Hampton-Anderson et al. assert that training and mentorship are also needed to assist PHPs in flexibly balancing treating and advocating for Black youths seeking mental health services who may also be navigating inequitable systemsand policies that may further compound presenting problems (e.g., encounters with law enforcement). Third, they note that training and mentorship are needed to enhance case conceptualization and approaches to treatment selection from a strengths-based perspective. They call upon such case conceptualizations to build upon cultural strengths, values, and practices (e.g., incorporation of the family) to

address presenting concerns more effectively. Targeting training as an intervention point to reduce disparities has significant downstream effects that can fundamentally alter how future generations of PHPs are taught, how clinical interventions are approached, and how issues pertaining to race and culture are prioritized within clinical practice. Collectively, the recommendations in the article underscore that systemslevel changes are a necessary but not sufficient step to promote positive mental health outcomes among Black youths. In other words, increasing access to mental health care services has relatively little impact on reducing disparities if providers are not competently trained to address the needs of the populations requiring such services. Indeed, despite changes in policy (e.g., Children's Health Insurance Program) and clinical practice approaches (e.g., telehealth) that aim to reduce barriers to mental health care access and engagement, significant racial disparities remain.3 Further, scholars have found that PHPs may not possess a strong understanding of how health systems shape health disparities.4 Critically, even when current or emergent PHPs have an awareness of structural barriers that hinder mental health treatment access and engagement, PHPs still disproportionately focus on individualistic factors that unduly fault clients of color for not accessing or completing mental health services.5 Thus, systemslevel change without foundational-level training for PHPs that focuses on how or why such change can promote equitable service delivery may inadvertently create resistance from practitioners, agencies, and institutions. This resistance may reinforce racially biased beliefs and attributions as to why racial inequities persist that ultimately inform how Black youths are perceived and served in mental health care.

Importantly, although education and mentorship focusing on systems and structures of inequity are critical in the development of culturally competent PHPs, so too are opportunities to learn about and incorporate cultural strengths into mental health care practices. However, Hampton-Anderson et al. explain that conventional education and mentorship approaches often build from and reinforce deficit-based frameworks that unduly emphasize risk without highlighting cultural strengths that Black youths possess across ecological systems. This deficit-based approach is also embedded within standard evidence-based treatments, which seldom allow space for PHPs to integrate and target cultural strengths (e.g., racial identity, racial socialization) that may be useful in mitigating presenting problems. Concerningly, the exclusion of cultural strengths in clinical interventions has been highlighted as a primary contributing factor to poorer engagement and treatment completion rates among Black youths.6 As such, there is significant value in teaching PHPs strength-based paradigms and culturally relevant strength-based interventions, which have been associated with reductions in mental health concerns, including racism-related stress and trauma among Black youths.7 In addition, competency in strengthbased case conceptualizations and treatment approaches would facilitate important opportunities for advocacy across ecological settings,8 which is particularly important given recent pushes for interdisciplinary clinical health teams and community-based mental health approaches. As an example, engaging with stakeholders about Black youths from a culturally informed, strength-based framework holds promise to contextualize and normalize presenting problems, while reducing or challenging inequitable diagnostic patterns that disparately label Black youths with more severe behavioral problems.

As Hampton-Anderson et al. adeptly note, culturally responsive courses need to be embedded within curricula as opposed to being a supplement to PHP education. However, there are a myriad of structural barriers that prevent the widespread adoption of successful pedagogical approaches that broach topics of multiculturalism, race, and racism,9 and these barriers have significant downstream consequences that contribute to inequities in clinical practice. For example, despite the growing awareness of health disparities and systemic inequity across mental health professions, courses pertaining to diversity and multiculturalism seldom exist and, even when they do, are rarely required for students to earn their degree.10 The general lack of courses may be closely tied to the relative racial homogeny of mental health care providers, who are overwhelmingly White. Indeed, White individuals often have difficulty with effectively teaching content or facilitating discussions relating to race and racism,11 which may lead to such topics being taught superficially, in isolation from other coursework, or not at all. And yet, when clinical training integrates topics of race and culture, such issues are more likely to be explored in clinical practice, and can considerably bolster rapport, engagement, and treatment outcomes.12 Thus, there is a critical need to integrate and prioritize curricula that train current and future PHPs to be knowledgeable and conversant on topics pertaining to issues of race, racism, and structural inequity, so as to enhance the quality of teaching and care provided to clients of color. However, doing so necessitates systemic change across academic institutions and clinical settings that prioritize (1) the diversification of the PHP workforce, (2) an emphasis on required courses pertaining to diversity science, and (3) ongoing multiculturalism trainings for PHPs in teaching and mentorship roles.

In conclusion, the present article by Hampton-Anderson etal. highlights that racial disparities in mental health care among Black youths reflect a multidimensional issue that stems in part from the lack of culturally relevant teaching and mentorship provided to PHPs. It is clear that systems-level change targeting macro-level policies and practice is required to reduce mental health care disparities. However, systems-level change is also needed to augment training programs that bolster PHP's multicultural awareness, knowledge, and skills to address important issues pertaining to race, culture, and inequity that are too often minimized in mental health care. _4jPU

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CONFLICTS OF INTEREST

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DETAILS

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Intergenerational Trauma and Structural Racism: New Mentorship Approaches to HIV and Substance Use Prevention and Treatment

Bowleg, Lisa; Landers, Stewart

ProQuest document link

ABSTRACT (ENGLISH)

This issue features a collection ofarticles under the umbrella of "HIV, Substance Use, and Trauma: Mentoringto DismantleStructural Racism." Historically, most research on racial discrimination and trauma and HIVand substance use has examined these issues primarily as individual-level processes. Echoingthemes from Krieger's ecosocial theory (https://bit.ly/3MC6vIk), the articles in this collection seekto advance knowledge about how structural racism and intergenerational trauma are embodied for racialized US communities, resulting in disproportionate rates ofHIV and substance abuse.

FULL TEXT

This issue features a collection ofarticles under the umbrella of "HIV, Substance Use, and Trauma: Mentoringto DismantleStructural Racism." Historically, most research on racial discrimination and trauma and HIVand substance use has examined these issues primarily as individual-level processes. Echoingthemes from Krieger's ecosocial theory (https://bit.ly/3MC6vIk), the articles in this collection seekto advance knowledge about how structural racism and intergenerational trauma are embodied for racialized US communities, resulting in disproportionate rates ofHIV and substance abuse.

Leveraging theoretical and empirical insights from the intergenerational trauma and structural racism literature, this collection seeks to contextualize racialized health inequities and pinpoint opportunities for multilevel (i.e., individual, community, and structural) intervention. These structural racism and intergenerational trauma contexts are vital because, as Resmaa Menakem writes in his book, My Grandmother's Hands: Racialized Trauma and the Pathway to Mending Our Hearts and Bodies (Las Vegas, NV: Central Recovery; 2017),

Many African Americans know trauma Intimately- from their own nervous systems, from the experiences of people they love, and most often, from both. But African Americans are not alone in this. A different but equally real form or racialized trauma lives in the bodies of most white Americans. And a third, often deeply toxic type of racialized trauma lives and breathes in the bodies of many of America's law enforcement officers. All three types of trauma are routinely passed on from person to person and from generation to generation. (p. 9)

Understandingthe link between structural racism and intergenerational trauma provides health equity researchers and mental health practitioners with a critically grounded lens to understand the structural and historical moorings ofhealth inequities such as HIV and substance use. Although there is a place and need for ameliorative solutions to mend, as Menakem writes, "our bodies ... Blackfolks, white folks, and America's police" (p. 10), the collection also spotlights an urgent need fortransformative solutions to dismantle structural racism. Collectively, these articles suggest thatthe field cannot (andwill not) clinicallytreat individuals and communities out ofintergenerational trauma when the main source ofthattrauma-structural racism and interlockingstructural heterosexism, sexism, cisgenderism (to name a few)-thrives unchecked.

This collection's subtitle spotlights another important need: mentoring and training. George Floyd's 2020 murder sparked widespread awareness about the deleterious health effects ofstructural racism.Thefactthat awareness ofstructural racismwas novelformany White people in the United States has serious implications for mentorship ofthe next generation ofhealth equity researchers and public health professionals. At a minimum, there is a need to expand the undergraduate and graduate curriculum to include education abouttopics such as intergenerational trauma and structural racism, and relevant critical frameworks such as ecosocial theory, critical race theory, and intersectionality. That such training will occur in a political climate in which these same topics have been weaponized highlights the precarious terrain that researchers and practitioners seeking to research and develop interventions on these topics must traverse. As such, this collection shows a bold and needed approach to recontextualize understandingaboutthe root causes ofhealth inequities such as HIVand substance use, and seeds the ground for future mentorship and trainingforthe next generation.

Lisa Bowleg, PhD, MA
AJPH Associate Editor
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AJPH Associate Editor

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Sidebar

11 Years Ago

Methods for the Scientific Study of Discrimination and Health: An Ecosocial Approach

[T]he ecosocial theory ofdisease distribution ... concerns who and whatdrive social inequalities in health.... A central focus is on how we literally biologically embody exposures arisingfrom oursocietal and ecological context, thereby producing population rates and distributions of health.... [E]cosocial theory posits that inequitable race relations simultaneously-and not sequentially-(1) benefitthegroups who claim racial superiorityatthe expense of those whom they deem intrinsically inferior, (2) racialize biology to produce and justifythe very categories used to demarcate racial/ethnicgroups, and (3) generate inequitable living and working conditionsthat, via embodiment, result in the biological expression of racism-and hence racial/ethnic health inequities.... [Discrimination harms health [via] economicand social deprivation; excess exposureto toxins,hazards,and pathogens;socialtrauma; health-harming responsesto discrimination; targeted marketing ofharmful commodities; inadequate medical care; and, especially (but notonly) for indigenous peoples, ecosystem degradation and alienation from the land. Moreover, as emphasized by ecosocial theory's simultaneous focus on exposure, susceptibility, and resistance, how people resist injustice and its health-harmingeffects, individually and collectively, and the resilience that enables them to do soalso mustbe examined.

From AJPH, May 2012, pp. 936-937

67 Years Ago

Segregation and Discrimination in Medical Care in the United States

Health agencies and organizations have a responsibility to go on record in favorofintegrated facilities and the abolition of discriminatory practices, sincethe achievementofthiswill betranslated in the reduction of morbidity and mortalityand an increase in the average expectation oflife of[BlackAmericans]. Segregation and discrimination are environmental factors and arejust as damaging to health aswater pollution, unpasteurized milkor smog. The American Public Health Association and certainly this Section have a responsibility in this area. Every public health worker, whether in the North orSouth, ought not to accept the patterns ofhis community as sacrosanct, but rather should help setthewheels in motion whereby responsible community leaders can cometogether and work out solutions forthe improvement of the health of everysingle individual inthat community.

From AJPH, September 1956, p. 1081

DETAILS

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Document 8 of 42

Women-Centered Program for Women of Color (WC4WC): A Community- Based Participatory, Culturally Congruent Sexual Health Intervention in Los Angeles County, California

Wyatt, Gail E, PhD; Chin, Dorothy, PhD; Loeb, Tamra B, PhD; Norwood-Scott, Enricka; McEwan, Jenna A, MPH; Zhang, Muyu, MS; Smith-Clapham, Amber M, MA; Cooley-Strickland, Michele, PhD; Trinidad, Cheryl; Flint, Janette R; Wells, Yvette; Divinity, Rosalynd; Liu, Honghu, PhD

ProQuest document link

ABSTRACT (ENGLISH)

The Women-Centered Program for Women of Color, a culturally congruent sexual health intervention, was implemented in 2018 in Los Angeles County, California, according to the principles of community-based participatory research: enhancing community capacity, establishing sustainable programs, and translating research findings to community settings. Participants exhibited significantly increased knowledge of and interest in preexposure prophylaxis (PrEP) and postexposure prophylaxis (PEP) over time, but no significant change in condom use was evident. Booster sessions are needed to maintain interest in PrEP and PEP given concerns about reproductive and sexual health. (Am J Public Health. 2023; 113(S2):S110-S114. https://doi.org/10.2105/AJPH.2023.307296)

FULL TEXT

Headnote

The Women-Centered Program for Women of Color, a culturally congruent sexual health intervention, was implemented in 2018 in Los Angeles County, California, according to the principles of community-based participatory research: enhancing community capacity, establishing sustainable programs, and translating research findings to community settings. Participants exhibited significantly increased knowledge of and interest in preexposure prophylaxis (PrEP) and postexposure prophylaxis (PEP) over time, but no significant change in condom use was evident. Booster sessions are needed to maintain interest in PrEP and PEP given concerns about reproductive and sexual health. (Am J Public Health. 2023; 113(S2):S110-S114. https://doi.org/10.2105/AJPH.2023.307296)

For nearly 17 years, the Center for Culture, Trauma and Mental Health Disparities at the University of California, Los Angeles, has specialized in community-based participatory approaches and trained public health professionals and clinic personnel to implement culturally congruent, evidence-based interventions. At-risk people of color are the focus of treatment programs across the United States, but few interventions are developed by women of color for women of color.

INTERVENTION AND IMPLEMENTATION

The objective ofthe Women-Centered Program for Women of Color (WC4WC) was to reduce sexual health risks among women of color in a low-income area of Los Angeles County, California. The program was implemented according to community-based participatory research principles in a three-year collaboration with public health organizations. The goals of community-based participatory research are to enhance community capacity by supporting equal community participation in research leading to direct benefits, establish sustainable programs that improve health behaviors and health outcomes, and accelerate the translation of research findings to communities with health disparities through the design of effective and culturally tailored interventions.1 The aims, procedures, and results of WC4WC align with these goals.

WC4WC incorporated concepts from Eban, a Yoruba word meaning fence that symbolizes good practices (e.g., selfprotection and partner protection) and elimination of unhealthy ones.2,3 The intervention, which included sexual health facts provided on anatomical charts to increase condom and contraceptive use,2 involved four sessions of two hours each with eight to 10 women per group. Pretest, posttest, and one-month follow-up assessments were administered 30 days apart. Leaders of sessions with Spanish speakers were bilingual and bicultural.

Session 1: Preparing for the Journey

Participants learned the historical context of gender, race/ethnicity-based trauma, oppression, and other systemic health barriers and shared their traumatic experiences with violence and discrimination. They calculated their index of risky partners and behaviors to build resilience (e.g., bodily autonomy, sobriety, resisting coercion and violence). Homework included journaling and initiating discussions of love and harm protection with partners.

Session 2: Tools for the Journey

Participants were provided information on male and female anatomy, howto use condoms and other contraceptives,4 and preexposure prophylaxis (PrEP) and postexposure prophylaxis (PEP). They were also offered a safer sex menu, a problem-solving mnemonic (FENCE) to teach self-protection strategies, and art by women of color for empowerment. Homework focused on "talk and listen" communication techniques.2

Session 3: It Takes a Village

Women redefined their racial/ethnic status and gender status as powerful tools to build self-esteem and shared what made them proud as women of color and as WC4WC "village" members.5 Homework focused on bonding with supportive, reliable individuals and defining personal and sexual safety with partners.

Session 4: Expanding the Village

Participants played sexual health games to reinforce knowledge and received prizes. Ujima (collective work and responsibility) was applied to inform community-based villages and future goals. Women shared how they passed their knowledge on to others.

The team met monthly with community partners. With key aims established, each site took the lead in implementation with consultation and research team support.

PLACE, TIME, AND PERSONS

Three sites were located in a service planning area of South Los Angeles (SPA-6) severely affected by unintended pregnancies, HIV/AIDS, sexually transmitted infections (STIs), COVID-19, and limited health literacy and services. More than 60% of SPA-6 residents are people of color, 32% are not US citizens, 41.1% are unemployed, and 22.5% live in poverty.6 WC4WC was offered in person from September 2018 to March 20, 2020, and virtually after the COVID-19 shutdown (March 2020 to September 2021; Table 1). On-site project staff facilitated each session. All eligible, consenting women were accepted as similar programs were not available in SPA-6 (see the Appendix, available as a supplement to the online version of this article at http://www. ajph.org).

PURPOSE

Women in SPA-6 account for 11 % of new infections in Los Angeles County.7 Efforts to provide sexual health services have been thwarted by restrictive state and federal funds. Services for pregnancy and disease transmission are separated from each other.8 Biomedical HIV strategies, including PrEP and PEP, are used only marginally among women of color at risk for HIV.9 Research in medical settings has shown that women are not asked about their sexual health to the same degree as men.10 A history of racial/ethnic discrimination has sensitized women to be suspicious of studies that do not offer all services to everyone.11

EVALUATION AND ADVERSE EFFECTS

The primary outcomes were condom use over the past 30 days, contraceptive use, STI and HIV knowledge, awareness of PrEP, and consideration oftaking PrEP. Calculations for condom-protected intercourse acts in the past 30 days were adapted from an evidence-based intervention.2 STI and HIV knowledge was assessed via 10 true or false statements.

Data and Statistical Analysis

Univariate and bivariate analyses were calculated for each measure and between predictors and outcomes at baseline, after program completion, and at a one-month follow-up. Using a repeated measures design with three data points, we fit mixed-effects linear models estimating fixed and random effects through SAS PROC MIXED (SAS Institute Inc, Cary, NC) for continuous outcomes (e.g., proportion of condom use) and PROC GLIMMIX(North Carolina State University, Raleigh, NC) with logit link for binary outcomes (e.g., awareness of PrEP).

Findings

Among the 379 women screened, 292 were enrolled. Attrition rates were 34.2% from pretest to posttest and 27.7% from posttest to the one-month follow-up; overall attrition was 46%. The primary reasons for dropping out were time constraints and privacy concerns. Those who dropped out after the assessment (P = .035) and at the one-month follow-up (P = .029) had significantly less education relative to the baseline sample.

The mean percentage of condom use was 23%; nearly 30% of women reported always using contraceptives other than condoms, either ongoing methods (e.g., the pill, IUD [intrauterine device], diaphragm) or one-time methods (sterilization). The mean STI and HIV knowledge score was 6.88 (of a possible 10). Almost 40% of women had heard of PrEP, and 45.2% reported that they would consider taking PrEP (Table 1).

Changes Over Time

There were significant increases from baseline to posttest with respect to HIV knowledge score (P< .001), awareness of PrEP (P< .001), and consideration of taking PrEP (P 5 .001). The changes from posttest to the one-month followup for these three outcomes trended in the right direction but did not reach statistical significance. Condom use increased from baseline to the one-month follow-up but was not statistically significant. Knowledge about STIs and HIV (P< .001), awareness of PrEP (P<.001), and consideration oftaking PrEP (P 5 .003) increased significantly over time (Table 2). Despite the intervention, participants expressed a reluctance to take medication owing to concerns about effects on future children. Apprehension about medication toxicity may reflect uncertainty surrounding long-term HIV prevention safety.12 However, participants were more likely to consider using PrEP or PEP as the program progressed.

SUSTAINABILITY

SPA-6 community, local, and statewide health providers attended a town hall to discuss the WC4WC results. The collaboration broadened staff networks and increased referrals; sites integrated the curriculum into ongoing women's programs, although ongoing funding was challenging. Federal, state, and private foundations are potential funding sources for sexual health intervention sustainability (e.g., hiring of permanent intervention staff).

PUBLIC HEALTH SIGNIFICANCE

Given the overrepresentation ofwomen of color living in poverty, recent US Supreme Court rulings (e.g., Dobbs v Jackson Women's Health) significantly restrict reproductive choices and sexual health, exacerbating a public health crisis.13 Increased information and skills that prevent unintended pregnancies and STI and HIV transmission and increase condom use need to be more easily accessible in communities of color where disease transmission is high. It is important to acknowledge women's reluctance to engage in prevention regimens that may protect their sexual health but undermine their reproductive health. Future public health campaigns focusing on the safety and efficacy of new prevention medications should increase trust, compliance, and health care uptake among women of color.14/4JPH

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G. E. Wyatt conceptualized the intervention, wrote sections focused on community-based participatory research, and participated in all aspects of data collection and article preparation. D. Chin and T. B. Loeb reviewed the literature and participated in the data analysis and the writing and editing of the article. E. Norwood-Scott andJ.A. McEwan participated in data collection and modifying the curriculum content for the intervention and contributed to the literature review and drafting and revising the article. M. Zhang was responsible for data coding, data entry, conducting analyses, and write-up of findings and tables. A. M. Smith-Clapham assisted with modifying the curriculum during the study, contributed to the literature review and writing, and provided oversight of article preparation and editing. M. Cooley-Strickland contributed to the literature review and the writing and editing of the article. C. Trinidad, J. R. Flynt, Y. Wells, and R. Divinity helped to conceptualize the study, monitored the well-being of women enrolled and staff, and made referrals when needed. H. Liu contributed to conceptualization, analysis, and write-up and editing of the article.

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The authors have no competing interests to declare that are relevant to the content of this article.

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The study was approved by the institutional review board ofthe University of California, Los Angeles.

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Inclusion of Expanded Adverse Childhood Experiences in Research About Racial/Ethnic Substance Use Disparities

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ABSTRACT (ENGLISH)

Investigations of the impact of adverse childhood experiences (ACEs) on health outcomes have been of major public health importance in the past several decades. The original studies of ACEs were monumental because they unveiled that seemingly common family-level childhood stressors (e.g., maltreatment, family dysfunction) affected individuals' health throughout their lifetime.1 Individuals who experience ACEs, which are stressful and potentially traumatic experiences during childhood, are more likely to engage in substance use2,3 and suffer from the main leading causes of death (e.g., cardiovascular and respiratory diseases, cancer).4 However, a major limitation of the original ACE studies was that participants were mostly White, middleincome, highly educated adults.5 Thus, although public health interventions have been developed to target ACE prevention and detection, these were developed while the experiences of a substantial portion ofthe population were neglected. In addition, assessments of community-level stressors that particularly affect racially/ethnically minoritized and economically diverse populations, many of which are rooted in structural racism and discrimination,6 remain excluded from this work. We argue that it is imperative to expand the conceptualization and assessment of adversity in substance use research, as exposure to both family and community-related ACEs (e.g., community violence, discrimination) increases the risk of alcohol and drug misuse, which is causally associated with disease, disability, and early death. We posit that increasing the number of studies focused on examining the ways community-level adversities affect substance use risk is crucial in health equity research, as community-level adversities disproportionately affect individuals of color and those of low-income backgrounds.

FULL TEXT

Investigations of the impact of adverse childhood experiences (ACEs) on health outcomes have been of major public health importance in the past several decades. The original studies of ACEs were monumental because they unveiled that seemingly common family-level childhood stressors (e.g., maltreatment, family dysfunction) affected individuals' health throughout their lifetime.1 Individuals who experience ACEs, which are stressful and potentially traumatic experiences during childhood, are more likely to engage in substance use2,3 and suffer from the main leading causes of death (e.g., cardiovascular and respiratory diseases, cancer).4 However, a major limitation of the original ACE studies was that participants were mostly White, middleincome, highly educated adults.5 Thus, although public health interventions have been developed to target ACE prevention and detection, these were developed while the experiences of a substantial portion ofthe population were neglected. In addition, assessments of community-level stressors that particularly affect racially/ethnically minoritized and economically diverse populations, many of which are rooted in structural racism and discrimination,6 remain excluded from this work.

We argue that it is imperative to expand the conceptualization and assessment of adversity in substance use research, as exposure to both familyand community-related ACEs (e.g., community violence, discrimination) increases the risk of alcohol and drug misuse, which is causally associated with disease, disability, and early death. We posit that increasing the number of studies focused on examining the ways community-level adversities affect substance use risk is crucial in health equity research, as community-level adversities disproportionately affect individuals of color and those of low-income backgrounds.

ADVERSITIES ROOTED IN STRUCTURAL RACISM AND DISCRIMINATION

To elucidate pathways affecting the health of minoritized communities, it is necessary to expand our understanding of what constitutes adversities, and how we measure them. The Philadelphia ACEs Study was launched with the goal of identifying childhood adversities particularly salient to racially/ethnically and socioeconomically diverse participants residing in urban settings.5 Results from the study showed that, among this population, certain adversities were described as being more salient stressors than those traditionally captured in most ACE studies7 (herein referred to as "traditional ACEs"). For example, parental separation was deemed a less salient stressor during childhood than community violence and economic hardships.7 These "expanded ACEs" include experiencing poverty, discrimination, bullying, community violence, migration-related stressors, and foster care involvement.7,8 Expanded ACEs are mainly community-level stressors and differ from traditional ACEs, which focus on family-level adversities (e.g., abuse and neglect, household dysfunction).8 Subsequent studies on expanded ACEs have been conducted, including secondary data analysis of a prospective longitudinal study that followed a majority low-income Black cohort. Twenty percent of this cohort only endorsed expanded ACEs,9 meaning that had they been surveyed for traditional ACEs only, they would have been incorrectly assessed as not exposed to ACEs.

Expanded ACEs reflect stressors that are fundamentally caused by structural racism and structural violence and play out in policies and practices that perpetually marginalize communities of color.6,10 Many expanded ACEs, such as living in an unsafe neighborhood or experiencing poverty, represent experiences that are concentrated in particular geographic areas, whereas others, such as experiencing racism or the deportation of a family member, are predominantly experienced by individuals from racially/ethnically minoritized groups. The conceptualization of these ACEs cannot be separated from the social environment or from the intergenerational impacts of segregation, historical trauma, and racial trauma.6 Fundamental cause theory demonstrates how socioeconomic status and racism are persistent and enduring causes of health inequities, even though the specific mechanisms linking these fundamental causes with health outcomes can change overtime.11-13 These two fundamental causes can work in concert (e.g., structural racism causes socioeconomic inequality) but also separately (e.g., racial inequalities in health outcomes persist even when socioeconomic status is held equal between two groups). Williams et al.13 highlighted how racism operates to affect health via structural factors, including residential segregation, concentrated poverty, disproportionate incarceration, and anti-immigrant policies; these in turn result in the disproportionate impact of toxic stress on children of color over the lifespan.14 Studying how racism and inequality shape exposure to traditional and expanded ACEs, and how these in turn affect substance use outcomes, therefore requires conceptual and methodological attention to analytic approaches that model complexity, dynamic change overtime, and interactions between individuals and their environment.

EXPANDED ADVERSITIES AND THEIR ROLE IN SUBSTANCE USE

Racial/ethnic disparities in substance use have been previously documented, but research on why and how these disparities exist in the first place remains underdeveloped.15 The ACE literature has established that experiencing traditional ACEs increases the risk of developing substance use disorders in adulthood (for a review, see Leza et al.3). Theoretical frameworks linking ACEs and health outcomes throughout the lifetime posit that exposure to ACEs can lead to impairments in socioemotional, cognitive, and biological domains.16 Therefore, individuals with these disruptions in development can adopt health-risk behaviors, such as substance use, to cope with stress, which then places them at higher risk for disease, disability, and early death.17 Given that expanded ACEs are rooted in structural racism and discrimination, substance use may be a major mechanism linking ACEs and poor health in racially/ethnically minoritized individuals.

Research on traditional ACEs and substance use consistently finds that individuals exposed to traditional ACEs are more likely to engage in alcohol and drug misuse, and develop a substance use disorder.3 However, investigations into racial/ethnic differences in the association between traditional ACEs and substance use have yielded mixed findings. For instance, although the association between traditional ACEs and alcohol use was weakest for White respondents compared with racially/ ethnically minoritized individuals, the relation between traditional ACEs and illicit drug use was significant only for White and Asian/Pacific Islander respondents.18,19 This type of nuanced finding points to the possibility that the behavioral risks associated with traditional ACEs vary among racially/ethnically diverse groups, and it merits additional attention.

It is plausible that other risk patterns specific to racial/ethnic subgroups will emerge as studies examining expanded ACEs increase. For example, Latinx youths experiencing the expanded ACE of deportation-migration stressors had higher odds of alcohol use than those who did not experience them.20 Research suggests that, in addition to being differentially affected by ACEs, certain groups are also disproportionately exposed to them. Black youths were more likely to experience expanded ACEs, whereas White youths were more likely to report traditional ACEs.21 Researchers have also found that males are more likely to experience expanded ACEs (e.g., community violence) and females are more likely to experience traditional ACEs, although these findings are not specific to race/ ethnicity.5,9 Thus, an intersectional approach, such as one that examines ways in which individuals with multiple marginalized and minoritized identities experience ACEs, is needed but remains underdeveloped.

Most studies have not explicitly examined ways traditional ACEs differentially affect racially/ethnically minoritized groups. Further, no studies to our knowledge have studied racial/ethnic differences in studies focused on expanded ACEs and substance use, but expanded ACEs have been associated with health risks such as substance misuse and a history of sexually transmitted infections.7 Moving forward, we need to incorporate both traditional and expanded ACEs into studies that are adequately powered to assess differential levels of risk for population subgroups. By doing so, we will gain a deeper understanding of risk and resilience pathways for racially/ethnically minoritized groups that move beyond those narrowly defined by traditional ACEs models, which were derived from the experiences of White and middle-income participant samples. If certain ACEs are related to substance use for some racial/ethnic groups and not others, it is imperative to identify which protective mechanisms are at play to harness those findings into prevention efforts.

TARGETING INTERVENTIONS TO REDUCE DISPARITIES

Although ACEs are assessed via a checklist and their cumulative scores are used to estimate health behaviors, all ACEs do not "weigh" equally. For instance, in traditional ACE studies, sexual abuse has a stronger weight than other ACEs in predicting health outcomes in the general population.22 Elucidating pathways of risk for traditional and expanded ACEs among racially/ethnically minoritized individuals will better allow us to target interventions aimed at eliminating racial/ ethnic health disparities.

A multilevel conceptualization of ACEs, including expanded ACEs, emphasizes the structural and social determinants of ACEs exposure,23 including income inequality and structural racism. Moreover, a multilevel conceptualization also illuminates how traditional ACEs are related to social conditions. For example, at the community level, financial stress and high rates of unemployment can increase the likelihood an individual is exposed to adversities within the home. At the national level, immigration policies and enforcement practices result in individual-level trauma that affects the health of children of immigrant-origin parents.10 Increased societal awareness of the impact of ACEs has led to a focus on identifying ACEs in childhood to provide appropriate interventions and mitigate the impacts of these potentially traumatic events. However, if these efforts are focused only on individual-level interventions for coping with trauma, they risk pathologizing individuals and families without changing the underlying social conditions that cause trauma in the first place.

Efforts to address expanded ACEs should include upstream interventions at the community and structural levels-rather than focusing only on the individual level-to more effectively address racial/ethnic mental health disparities.24 Disparities-reducing, evidence-based community interventions range from policies focused on increasing generational wealth11 to place-based interventions that address social and environmental conditions by leveraging community expertise and cross-sector collaborations.14 Approaches such as these may be particularly powerful in decreasing exposure to expanded ACEs because they increase family economic stability and improve neighborhood conditions. For example, in a recent cluster randomized trial focused on predominantly Black neighborhoods with high percentages of low-income households, South et al.25 demonstrated that remediation of abandoned houses was associated with reduced weapons violations and reduced gun assaults in those neighborhoods. For both traditional and expanded ACEs, an emphasis on addressing these structural and social conditions via policies and structural interventions will have a greater impact on disparities in ACE exposure than attempting to mitigate the impact of these adversities at the individual level. Given that socioeconomic status and racism are fundamental causes of health disparities,12 including disproportionate exposure to expanded ACEs and their health effects, structural interventions aimed at reducing socioeconomic inequalities and dismantling racist policies and practices are necessary to make long-term progress in improving health equity.

CONCLUSION

Investigations into the impact of ACEs and health outcomes in the past decades have focused on the causal impact of ACEs on disease and early death-the last two levels of the ACE conceptual model.17 The expansion of the ACE framework to include expanded ACEs is a way to address a critical gap in the original ACE study-namely, a focus on how social and structural inequalities further shape adversity. We urge the field to shift the focus to the first two levels of the ACE conceptual model-(1) generational embodiment and historical trauma and (2) social conditions and local context17-by expanding the conceptualization and assessment of adversities in future substance use studies. In turn, this knowledge can advance structural and community-level interventions to prevent ACEs and promote health equity.

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J. Zhen-Duan and K. Alvarez led the study conceptualization and manuscript preparation.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

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Toward a Community- Led, Public Health Approach to Multilevel Violence Prevention for Black and Brown Transgender and Gender- Diverse Communities

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ABSTRACT (ENGLISH)

There is currently a war on Black and Brown transgender and nonbinary (TNB) people in America. TNB people include those whose gender differs from the sex assigned to them at birth, those who do not identify with gender binary constructs of "man" or "woman," and those who are expansive or fluid in their gender. The year 2021 was the deadliest on record for TNB communities, with at least 57 documented murders ofTNB individuals; 66% of the victims were Black women, 86% were people of color, and 69% were killed with a gun.1 These numbers are likely an underestimate, as TNB victims are often misgendered in official reports1 and most murders of TNB people remain unsolved. Beyond lethal violence, data indicate that nearly one in 10 TNB individuals have been physically assaulted in the past year and 47% experience sexual violence in their lifetimes.2

Victimization ofTNB people must be understood within the larger context of discrimination at the intersection of interlocking systems of oppression (e.g., racism, sexism, heterosexism, and cisgenderism). Discrimination against individuals and structural sources of oppression are mutually reinforcing or co-constitutive and jointly contribute to interpersonal violence against TNB people. For Black and Brown TNB people, community violence linked to cisgenderism and gender oppression is intertwined with White supremacy.2 TNB people of color are uniquely targeted and criminalized by police, government, and media, as evident by widespread dissemination of misinformation in news, political scapegoating, biased law enforcement, and legislation designed to exclude Black and Brown TNB people from public life (e.g., "walking while trans" bills).3

Because of discrimination, TNB people of color experience disproportionately higher rates of unemployment, housing insecurity, and incarceration compared with White TNB people. In the National Transgender Discrimination Survey (NTDS),2 Black TNB people had nearly twice the unemployment rate of all TNB respondents (26% vs 14%) and over three times the unemployment rate of the broader US population (7%). Black transgender respondents also reported a much lower rate of homeownership (14%) compared with transgender respondents of all races (32%) and the general US population (67%). An alarming 41% of Black respondents reported experiencing homelessness compared with 19% of all transgender respondents. Thirty-five percent of Black respondents had been arrested or held in a cell because of bias compared with 7% of all transgender respondents. These disparities are directly linked to the pervasive violence to which Black and Brown TNB people are exposed in the public sector (e.g., employment, housing, health care, prisons).2

In addition to its direct influence on morbidity and mortality, community violence and discrimination have significant health impacts, elevating risk for depression, anxiety, suicidality, substance use disorder, and HIV.4,5 Further, community violence perpetrated in the public sector disproportionately erodes trust in the very organizations upon which TNB communities of color depend to access life-saving and quality of life-supporting services. For example, 34% of Black NTDS respondents, compared with 23% of respondents of all races, reported delaying necessary health care because of anticipated violence or mistreatment by providers.

FULL TEXT

There is currently a war on Black and Brown transgender and nonbinary (TNB) people in America. TNB people include those whose gender differs from the sex assigned to them at birth, those who do not identify with gender binary constructs of "man" or "woman," and those who are expansive or fluid in their gender. The year 2021 was the deadliest on record for TNB communities, with at least 57 documented murders ofTNB individuals; 66% of the victims were Black women, 86% were people of color, and 69% were killed with a gun.1 These numbers are likely an underestimate, as TNB victims are often misgendered in official reports1 and most murders of TNB people remain unsolved. Beyond lethal violence, data indicate that nearly one in 10 TNB individuals have been physically assaulted in the past year and 47% experience sexual violence in their lifetimes.2

Victimization ofTNB people must be understood within the larger context of discrimination at the intersection of interlocking systems of oppression (e.g., racism, sexism, heterosexism, and cisgenderism). Discrimination against individuals and structural sources of oppression are mutually reinforcing or co-constitutive and jointly contribute to interpersonal violence against TNB people. For Black and Brown TNB people, community violence linked to cisgenderism and gender oppression is intertwined with White supremacy.2 TNB people of color are uniquely targeted and criminalized by police, government, and media, as evident by widespread dissemination of misinformation in news, political scapegoating, biased law enforcement, and legislation designed to exclude Black and Brown TNB people from public life (e.g., "walking while trans" bills).3

Because of discrimination, TNB people of color experience disproportionately higher rates of unemployment, housing insecurity, and incarceration compared with White TNB people. In the National Transgender Discrimination Survey (NTDS),2 Black TNB people had nearly twice the unemployment rate of all TNB respondents (26% vs 14%) and over three times the unemployment rate of the broader US population (7%). Black transgender respondents also reported a much lower rate of homeownership (14%) compared with transgender respondents of all races (32%) and the general US population (67%). An alarming 41% of Black respondents reported experiencing homelessness compared with 19% of all transgender respondents. Thirty-five percent of Black respondents had been arrested or held in a cell because of bias compared with 7% of all transgender respondents. These disparities are directly linked to the pervasive violence to which Black and Brown TNB people are exposed in the public sector (e.g., employment, housing, health care, prisons).2

In addition to its direct influence on morbidity and mortality, community violence and discrimination have significant health impacts, elevating risk for depression, anxiety, suicidality, substance use disorder, and HIV.4,5 Further, community violence perpetrated in the public sector disproportionately erodes trust in the very organizations upon which TNB communities of color depend to access life-saving and quality of life-supporting services. For example, 34% of Black NTDS respondents, compared with 23% of respondents of all races, reported delaying necessary health care because of anticipated violence or mistreatment by providers.2

These impacts further reinforce health inequities and cycles of poverty.2

PRIORITIES FOR MULTILEVEL INTERVENTION

Given the mutually reinforcing contributions of individual and structural discrimination to violence-linked health inequities for Black and Brown TNB people, a multilevel approach to violence prevention for these communities is essential. Here, we outline a set of strategic priority areas for interrupting this epidemic of violence, its intersecting drivers, and its downstream consequences.

Empowerment Self-Defense

Black and Brown TNB individuals deserve tools and strategies for resisting the onslaught of victimization that pervades daily life. Empowerment selfdefense (ESD) approaches are groupbased interventions that empower participants with physical, verbal, and psychological tools to understand their bodies as sources of strength while explicitly holding perpetrators responsible for violence.6 Despite the demonstrated efficacy of ESD programs to prevent violence in presumably cisgender samples,6 research and the dissemination of ESD for TNB populations are scarce.

Trans women and transfeminine people of color face specific experiences of oppression at the intersections of racism, cisgenderism, and sexism (termed "transmisogynoir")7 associated with a constellation of victimization types (e.g., hate crimes, police violence, workplace violence, violence in sex work, community gun violence) distinct from that predominately examined in ESD research (i.e., cisgender women's risk of campus sexual assault). Although emerging evidence suggests that community-based support in the development of selfdefense strategies is protective for Black trans women survivors of violence,8 public health initiatives promoting cultural attunement and effectiveness of ESD for structurally vulnerable Black and Brown TNB women are needed.

In a series of pilot studies, our team has documented high perceived credibility of and demand for ESD programming among Black and Brown trans women. In a pilot trial in which the majority of participants were Black and Brown trans women, we found high rates of acceptability, feasibility, and preliminary efficacy9 of an ESD violence prevention approach tailored for and embedded in the Brooklyn Ghost Project,10 a Black and Brown TNB-led grassroots community-based organization (CBO) in New York City founded by the second author. In the program implementation process, we created formal peer-support employment opportunities in ESDtrainingforTNB people.9,11 This aspect of implementation provided an opportunity to disrupt cycles of poverty comprising the socio-ecological context of interpersonal victimization.

Further, numerous community-led (rather than research-driven) selfdefense initiatives currently exist in CBOs that serve TNB people of color, includingTHORN,11 a Chicago-based project arming Black and Brown TNB people with self-defense tools (e.g., stun guns, pepper spray), and Trans Wellness Center,12 a Los Angeles, California-based coalition of CBOs providing comprehensive services for TNB individuals, including a free selfdefense class led by a trans woman of color who is a former national judo champion. Public health efforts to support and strengthen self-defense initiatives must amplify and credit the work of community leaders and commit to avoid co-opting, exploiting, or threateningTNB community control. THORN distributes self-defense resources only in situations in which recipients are not asked to do anything in return (e.g., issue payment, participate in research or health programming) for accessing these resources.12 This policy of nonextractive investment in the safety of Black and Brown TNB people is a sound model for the field. Additionally, we refer readers to several excellent selfauditing guidelines13,14 for critically evaluating community partner engagementto promote nonexploitative dynamics (i.e., relationships that ensure lasting benefits to community members).

Equitable CommunityGovernment Partnerships

Public service organizations mandated with enforcement of antidiscrimination policy often fail to recognize or utilize the much-needed expertise ofTNB-led organizations. Not only is this exclusion a missed opportunity for enhancing civil rights, it also perpetuates alienation of TNB individuals from the public sector and further desensitizes broader society to the community's suffering. Community-government partnerships that equitably invest in TNB community expertise to support the implementation and enforcement of policy-level violence prevention efforts are a promising intervention avenue.

In 2019, New York State passed the Gender Expression Nondiscrimination Act, prohibiting discrimination against TNB persons in public accommodations. Despite the promise of this policy, Black and Brown TNB New Yorkers have been largely excluded from its implementation and enforcement. Leveraging constituent expertise of TNB-led CBOs in New York City to evaluate the impact of this legislation and to deliver trainings to fill implementation and enforcement gaps presents a clear opportunity for change. Compensating and empowering structurally vulnerable community members to enforce antidiscrimination policies is one way to counter the dehumanization experienced byTNB individuals in institutional settings and increase the community's visibility as experts, rather than victims.

Funding Grassroots Community-Based Organizations

The continued survival and thriving of Black and Brown TNB communities in the face of ongoing violent oppression reflects community resilience and leadership. Black and Brown trans-led grassroots CBOs have always been and continue to be the primary line of defense against the harms of community violence.8 Unfortunately, these organizations are grossly underfunded. The inadequate funding of Black and Brown trans-led organizations and operations ensures that services and programs delivered for the community are designed, created, facilitated, and organized with minimal community input.

In the last decade, federal and foundation funding for TNB issues has increased tremendously. However,TNB communities are rarely the primary recipients of these funds, which instead accrue to White cisgender-led organizations that become gatekeepers of these funds to funnel down to Black and Brown trans-led grassroots CBOs forming what they call "partnerships." However, all too often these "partnerships" are strategically designed and implemented to proclaim ownership and extract the expertise and labor of Black and Brown TNB communities. Reorganization of funding priorities and policies to incentivize the funding of Black and Brown TNB-led CBOs is urgently needed. We urge public health professionals and funding agencies to trust the expertise and vision of Black and Brown TNB leaders, who embody transformation and survival, by investing in bold violence-prevention solutions that resist and reimagine the structural conditions of violence that prevent Black TNBs from thriving.15 This includes, but is not limited to, strategies targeting economic empowerment, housingjustice, and decriminalization and decarceration.15

CONCLUSION

Community violence against TNB people is a public health crisis in the United States warranting a multilevel public health intervention approach. We amplify the work of BlackTNB community leaders to highlight high-priority components of a multilevel public health approach to violence prevention for these communities that emphasizes empoweringTNB community and interrupting structural contributions to victimization. >4JPH

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to disclose.

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Redefining the Role of Public Health Professionals Serving Black Youths Seeking Mental Health Care: Implications for Training and Mentoring

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ABSTRACT (ENGLISH)

Attrition rates for Black youths in mental health treatment settings are high, and the extant literature suggests this may be because treatment is not meeting their unique needs. Public health professionals, defined here as all individuals who work to increase the well-being of youths, can play a major role in changing these outcomes. The purpose of this article is to suggest a broader scope of practice, or a redefined role, for public health professionals who work with Black youths seeking outpatient mental health care and to explicate ways in which training and mentoring can help accomplish this goal. Bolstered by a socioecological conceptual model, we suggest 3 standards of practice that we believe must be satisfied to meet the requirement for this redefined public health professional role: using a sociocultural framework, exercising flexibility in one's assigned role, and understanding and incorporating culturally specific strengths and protective factors into care. (Am J Public Health. 2023;113(S2):S140-S148. https://doi.org/10.2105/AJPH.2022.3071 94)

FULL TEXT

Headnote

Attrition rates for Black youths in mental health treatment settings are high, and the extant literature suggests this may be because treatment is not meeting their unique needs. Public health professionals, defined here as all individuals who work to increase the well-being of youths, can play a major role in changing these outcomes.

The purpose of this article is to suggest a broader scope of practice, or a redefined role, for public health professionals who work with Black youths seeking outpatient mental health care and to explicate ways in which training and mentoring can help accomplish this goal.

Bolstered by a socioecological conceptual model, we suggest 3 standards of practice that we believe must be satisfied to meet the requirement for this redefined public health professional role: using a sociocultural framework, exercising flexibility in one's assigned role, and understanding and incorporating culturally specific strengths and protective factors into care. (Am J Public Health. 2023;113(S2):S140-S148. https://doi.org/10.2105/AJPH.2022.307194)

Untreated mental health concerns among youths can negatively influence long-term emotional and physical health, making early intervention necessary to reduce public health impacts.1 Black youths experience a number of unique, systemic stressors, such as racial discrimination, increased trauma exposure, and microaggressions, that can cause or exacerbate mental health distress.2 Furthermore, as a result of stigma, healthy mistrust ofthe medical establishment, and experiences with clinicians providing an unequal standard of care, standard outpatient treatment models may not meet the unique sociocultural needs of Blackyouths, who are then less likely to engage and remain in outpatient mental health services.3-8

Minorities overall in the United States have less access to adequate facilities for mental health care than other groups. Kodjo and Auinger reported that 8% of distressed Black adolescents received counseling services, as compared to 19% of non-Hispanic Whites, even after control for income and parental education.9 According to another study, Black Americans used medical care such as pharmacotherapy and psychotherapy for major depressive disorder at a rate of 39.7% (as compared with 54.1 % among Whites).10

These disparities, which are consistent among Black Americans regardless of age and gender and have persisted for decades,11 are notable because they mean that Blackyouths may not benefit from the unique aspects of outpatient care that may prove to be beneficial for symptom reduction. These potential benefits include a team-based approach to mental health care, sustained contact with a mental health care provider who may provide a point of contact outside of sessions, and support for chronic and sustained mental health concerns that may vary In severity. A better understanding of how public health professionals can be trained and mentored to work In outpatient mental health centers to deliver comprehensive, culturally responsive Interventions for Black youths Is key In eliminating racial disparities In mental health treatment. Here, culturally responsive care means a collaborative approach to Intervention that responds to the stated needs of the Individual and takes Into account systemic, contextual, and cultural Influences that affect the Individual and the resulting symptom presentation.

In 2020, Halkitis12 proposed "a new public health psychology" to better join public health concerns with clinical care Issues. He argued that neither arena fully Incorporates critical sociocultural factors that affect health.12 We agree that this disconnect Is especially Impactful for Black youths seeking mental health care. As such, here we expand the term "public health professional" to Include mental health practitioners as well as anyone who Interacts with youths In a preventive or clinical capacity (e.g., psychologists, psychiatrists, pediatricians, social workers, school psychologists, case managers).

In this article, we review disparities In mental health service use among Black youths and discuss common clinical presentations of youths seeking treatment In outpatient treatment settings. In addition, we outline 3 standards of practice that we believe must be satisfied to meet the requirement for a "redefined public health professional" role, a skill set we believe Is necessary for working with all Individuals but especially so If one seeks to provide comprehensive, culturally responsive care for Black youths. We conclude by discussing how public health professionals can satisfy these standards of practice using a socioecological framework, which we define as considering societal, community, and Individual-level factors. In using the term socioecological, we are calling for the systemic Inclusion of cultural factors within this definition, which we define as Influences outside of the Individual that affect mental health and the potential for therapeutic engagement.13,14

To support our assertions, we propose a conceptual model (Figure A, available as a supplement to the online version of this article at http://www. ajph.org) In which attention to these critical factors Is presented as a potential way to reduce attrition of Black youths from outpatient care settings and support the training and mentoring of public health professionals working with this population. Using a critical conceptualization of ecological systems theory, we seek to Interrogate existing care systems as they pertain to the mental health treatment of Black youths and families as a means of supporting changes In the fabric of how clinical care Is provided. With an Increased focus on systemic frameworks, flexibility, and strengths-based perspectives In our training programs for public health professionals in all disciplines, we can achieve a care environment that serves the needs of not only Black youths and families but all Individuals.

DISPARITIES IN MENTAL HEALTH SERVICE USE AMONG BLACK YOUTHS

Black youths who need mental health care are less likelyto receive It than their White counterparts.3 This Is especially of concern now given recent statistics highlighting grave mental health service needs. For the first time since 1957, rates of anxiety disorders among Black Americans have exceeded those among White Americans,15 and from 2011 to 2015 there was more than a 50% Increase In psychiatric emergency room visits among Black youths.16 Furthermore, suicide rates among Black youths 5 to 12 years old exceed those among White youths.17 These statistics can be coupled with data regarding critical mental health risk factors. For example, Black youths are disproportionately affected bytraumatic stressors, with studies showing thatthey are at Increased likelihood of experiencing adverse childhood experiences.18 Furthermore, Black youths are more likelyto experience race-related adversity not accounted for In the original adverse childhood experience frameworks; such experiences are positively related to Internalizing symptoms and Increased risk for experiencing additional adverse childhood experiences.19,20 These findings are notable given that childhood adversity Is associated with poorer mental health across the life span.2 In the context of these disparities, Black youths have higher rates of attrition from mental health treatment, with estimates hovering around 61.5%.21

In efforts to reduce these mental health service disparities, significant health care and policy reforms have been established In the past decade with the aim of making mental health care more accessible.22 Researchers have found that despite these efforts, Black Americans, In particular, continue to lag In obtaining the mental health care they need relative to White and Latinx Individuals.23 Income-related barriers, lack of Insurance, and underinsurance have been cited as the main barriers to obtaining mental health care.24 However, socioeconomic factors and logistical barriers (e.g., transportation issues) cannot fully explain racial/ethnic disparities in mental health care use.25

Disparities in accessing mental health care among Black youths are also influenced by structural and cultural factors that are not accounted for in provision of services.26 For example, negative experiences with the health care system affect mental health care service use by Black youths. This healthy mistrust of the medical system comes from a long-standing history of exploitation and discriminatory treatment by health care providers.5 Furthermore, widespread public and self-stigma relating to mental health problems pose significant barriers to engaging Black youths and their families in treatment.27 Thus, public health professionals working in outpatient treatment settings must contend with myriad contributions to disparities. Understanding all of these contributors is necessary to establish a foundational therapeutic alliance with youths presenting to outpatient care with mental health symptoms.

YOUTHS SEEKING MENTAL HEALTH TREATMENT

Common clinical presentations for youths dealing with mental health symptoms fall into cognitive (e.g., trouble concentrating, thought distortions), behavioral (e.g., poor academic performance, sleep problems, social withdrawal), and emotional (e.g., irritability, anger, fear) domains.28 It is critical to understand the socioecological factors that contribute to the onset and maintenance of such clinical symptomology and the interlocking set of stressors that may contribute to youths ultimately presenting for clinical care. This understanding will ultimately promote more sustained improvement in clinical symptoms.

Black youths contend with many stressors that are developmentally expected14 as well as racialized.29,30 This group not only must manage common stressors, such as peer and family relationships and academic expectations, but also must navigate and cope with discriminatory experiences. Indeed, a recent study reported that Black youths reported an average of 5 discriminatory experiences each day.31 Furthermore, the COVID-19 pandemic, alongside a worldwide reckoning with racial injustice, has disrupted the lives ofyouths. The onset of virtual school, increased isolation, heightened exposure to racial trauma through widespread media exposure of police killings of unarmed

Black people, the subsequent discourse regarding the sociopolitical precedent for these behaviors, and the expectations for the future all serve to increase youths' stress burden.32 Understanding the sociocultural nuance behind clinical symptom presentation leads to the need for a broader skill set than one that solely relies on symptom count and the administration of manualized treatments. In the next section, we outline 3 standards of practice that support this more responsive approach to practice.

THE REDEFINED PUBLIC HEALTH PROFESSIONAL: STANDARDS OF PRACTICE

Practitioners working in the preventive or clinical realm with individuals, and with Black youths in particular, must contextualize presenting symptoms and concerns in a broader socioecological framework and adjust how they work with clients accordingly. In this section, we explicate this approach by highlighting 3 standards of practice that we believe would improve the standard of care for Black youths with mental health symptoms and constitute what we call a redefined public health professional role. We also address how public health professionals can be trained and mentored on incorporating these standards of practice.

Operate From a Sociocultural Framework

Stern et al.33 highlight the necessity of a socioecological framework with particular attention to cultural factors for those concerned with the development of Black youths.33 Social (e.g., peer and familial relationships) and cultural (e.g., racial identity and socialization, culturally specific strengths) factors are embedded within systems (e.g., mental health treatment settings, schools, neighborhoods) and constantly affect an individual's profile of risk and resilience over time. Therefore, to best serve Black youths as a public health professional, one must be willing to consider the effects of all of these simultaneous influences. Drawing from multicultural counseling theory, or a therapeutic process that draws on life experiences, cultural values, and intersecting identities of the client and focuses on culturespecific integration of intervention modalities,34 this work must be embedded within case conceptualizations, treatment plans, and follow-ups.35 Clarity around these influences may also highlight basic needs that must be met to achieve sustainable symptom reduction.35,36 Furthermore, attention to intersectionality theory, or the nexus between various forms of group membership and how that affects individual lived experiences, is necessary within this framework.37 This requires practitioners to examine structural inequalities and issues of social justice,38 have comfort with naming and understanding identities they hold, and discuss the impact of intersecting identities with the patient as they become critical to the therapeutic process.39

Be Flexible in One's Role

To incorporate a sociocultural framework into care delivery, one must be flexible in one's defined role. Public health professionals may be accustomed to working in silos, effectively delegating tasks that could be helpful to clients to other providers, and for practitioners, rigidly adhering to treatment manuals. Although at times this is the most appropriate choice if the task is outside of one's realm of expertise, or manualized approaches are best indicated, the difficulty with this approach is that it may undermine therapeutic rapport and discourage clients from returningto care if they feel that there was no immediate utility in the visit. The act of showing personalized care for another, on the other hand, is intricately linked to collectivism and the cultural value of interconnectedness, and it may best serve clients who hold those values. For example, for Black youths and families who may be disproportionately affected by systemic factors that compromise maintenance of basic needs, provision of resources (e.g., provision of food or snacks before therapy sessions, immediate connection to a social worker or case manager40) may be considered a small representation of a collectivist cultural understanding and alignment and therefore is critical to keep in mind when considering service offerings and how one works with clients as a practitioner.41 Given the systemic sociocultural factors that contribute to mental health symptoms, it is conceivable that this holistic assumption of responsibility for the clients with whom one works will ultimately help contribute to symptom reduction.

Understand Culturally Specific Strengths and Protective Factors

Given that much of the research literature regarding psychopathology is focused on risk factors and that much work involving underrepresented racial and ethnic minority groups involves comparative studies from a deficit model as opposed to within-group study designs, mental health practitioners may not always be aware of the abundance of cultural strengths that Blackyouths and communities hold when considering culturally responsive care models.42

This process represents a value incongruence between the assumptions traditional care settings were built upon and the values of Black youths and families. It is imperative that these cultural strengths are highlighted in work with clients as resources that can be leveraged in service of healing. Early work highlighted the central role of family, extensive kinship networks, the influence of religious and spiritual values, positive racial identity building, and race socialization as hallmarks of Black family strengths.43 More recent work supports these factors as being protective in the face of stress. For example, the Engaging, Managing, and Bonding through Race (EMBRace) intervention has been shown to reduce experiences of racialized stress by helping parents and youths navigate the race socialization process.44 Furthermore, the Celebrating the Strengths of Black Youth program, a preventive intervention focused on building positive racial identity, has been shown to increase self-esteem among Black youths 7 to 11 years old.45 This literature suggests that a rigid focus on treatments with minimal empirical support among Blackyouths can lead to the unintentional oversight of key cultural protective factors.46 If outpatient clinics are not equipped to capitalize on existing strengths and meet clients' cultural needs and preferences, attrition may become a problem and lead to mental health care access barriers.47

INFLUENCE OF SYSTEMS

Societal, community, and individuallevel influences also affect how we are able to navigate as professionals within our respective fields. These systems have an impact on how we are trained to do our jobs as well as the research and clinical practices we employ. In this section, we discuss how redefined public health professionals can be trained and mentored to operate and advocate within these different ecological systems in ways that may have significant positive effects on mental health outcomes among Blackyouths.

Societal Level

At the societal level, to better serve Black youths in outpatient mental health care settings, the workforce needs to better reflect the population that it serves. For example, Black Americans are underrepresented in the professions of psychology48 and psychiatry.49 Black psychologists account for only 5% of the profession, as compared with 13% of the general population. By contrast, Black individuals are well represented among social workers, accounting for 22% of new workers entering the profession.50 Given the number of Black social workers, they may play an especially critical role in the outpatient treatment of Black youths. Public health professions must be prepared not only to recruit more providers of color but to also address the structural barriers (e.g., financial costs of education programs, student debt, low wages) that lead to burnout and early exit from the field among Black providers. Ensuring that these structural barriers are addressed with special attention to increasing the number of Black providers and reducing the burden on working individuals remains crucial to retainment.

For example, retention efforts might include more comprehensive and accessible student loan repayment programs for providers. Public health professional training programs more broadly would also do well to further expand training and mentoring to include mental health topics such as diagnoses and familiarity with common treatments as well as guidance on consultation and interdisciplinary work with mental health professionals. This will allow for more seamless collaborations pertaining to public health outreach, clinical care, and mental health research.

In addition to increased representation, the training clinicians receive needs to be culturally responsive and aligned with the 3 standards of practice outlined here so that clinicians are prepared to address the needs of Black youths. Culturally responsive training needs to be provided throughout different career stages and levels. For instance, at the institutional level, infrastructure and appropriate time and compensation with respect to receiving early training and retraining and being exposed to working with diverse families are vital. At the individual level, multicultural training needs to be embedded in course curricula and not provided in isolation. Furthermore, postgraduate training opportunities need to be prioritized by employers (e.g., bias reduction training to decrease cultural bias in health care settings51 or attention to broader themes in health equity work52).

There are several recent calls to action to integrate social justice and antiracism into the education and training of mental health providers.39,53 These calls emphasize providing training in multicultural therapy, cultural humility, and intersectionality. Moreover, providers need to be prepared to address the mental health consequences of racism and racial trauma and understand the racial/ethnic heterogeneity of Black youths.54 Although many training programs provide opportunities to learn standard evidence-based treatments such as cognitive-behavioral therapy and dialectical behavior therapy, a growing number of culturally adapted interventions have been developed. For example, Metzger et al.55 adapted trauma-focused cognitive-behavioral therapy to integrate racial socialization to address experiences of racial trauma.55 To produce culturally responsive providers, it will be critical for training programs across mental health professions to provide clinical training in delivering these culturally responsive interventions with diverse client populations.

Finally, advocating for increased insurance reimbursement that supports the comprehensive care we propose in this article is critical to the sustainability of the multitiered work required to care for the entire individual.56 The use of technology has been presented as a way to improve coordination of care and thereby resolution of some ofthe time constraints that impede providers from optimizing care coordination, but more research is needed to delineate its use to facilitate more comprehensive services. Some studies have correlated the rise of telemedicine, touted as a significant mechanism to resolve health care inequality, during the coronavirus pandemic with resolving disparities in care through improved access.

The near ubiquity of smartphones has been posited as a tacit leveling of the playing field in health care access.57 However, this technology can also serve to further exacerbate inequality, especially as it relates to artificial intelligence and algorithms that routinely draw on racial differences as a mechanism of determining care. This echoes a long-standing tradition of "race-based medicine" in which race essentialism has reared its head in perceived biological roots of difference (e.g., pain tolerance, risks related to body mass index among different races).

Although these practices represent a historically racialized perspective on medical treatment, they have been mapped into modern technology implicitly (e.g., when health insurance companies use race in risk prediction scoring algorithms to determine coverage). Because seemingly equalized technologies are layered over a structurally unequal society, we have to be wary that technology does not serve as a flashy albeit superficial resolution to a more nuanced problem. Thus, addressing minority youth mental health concerns requires unique approaches that are dynamic and involve responsible use of technology.58

Community Level

Outpatient treatment settings nestled in communities are critical to setting the foundation for culturally responsive care. The onus is on leaders in outpatient care settings (i.e., training directors and department heads) to support initiatives and clinic-wide expectations for culturally responsive research and client care. These structural changes have the potential to address the foundational concerns that promote health disparities and may positively affect clients in a sustainable way. Increasing cultural responsivity in outpatient treatment settings requires resources to support changes in how interventions are typically developed, prioritized, and administered.36

Another important consideration for working with Black youths in outpatient settings is training and advocacy around providing adequate, nonstigmatizing crisis response interventions. There are a number of clinical issues that may affect youths and their families and lead to mental health crises, including housing insecurity, financial difficulties, incarceration, and symptomology related to serious medical illness.

Advocating for the use of multitiered collaborations between law enforcement, mental health providers, and social service providers to support a collaborative approach to responding to mental health crises may help remove the added layer of criminalization that often comes along with sole law enforcement responses to mental health crises among youths.59 With the increased prevalence of mental health issues affecting Black youths' physical and social health, advocating for the training of all relevant stakeholders to work together to better serve and help this population when in crisis aligns directly with the aims of public health more broadly, as it supports the promotion of healthy lifestyles and the prevention of chronic impairment related to mental health problems.

Finally, public health interventions focused on providing psychoeducation through trusted organizations in the community (e.g., churches, grassroot organizations), peers, and social support networks have shown promise in reducing public and self-stigma in Black communities and should be continued. Knifton et al.60 reported on communitybased mental health conversations that significantly reduced reported mental health stigma.60 In addition, Codjoe61 et al. identified key components of community-based approaches to reducing mental health stigma. They found that co-production and partnership with community members were essential in implementing interventions that were acceptable and accessible to individuals.61

Individual Level

In work with any client, culturally responsive care must be empirically informed, with flexibility, rapport building, and common factors at the forefront. In work with Black youths in particular, allowing space to discuss experiences with racism and race-based stress may be critical. Meyer and Zane62 conducted a study of individuals who had received treatment from outpatient mental health clinics. They found that issues related to race and ethnicity were more important to racial/ethnic minority clients than to White clients; clients who reported these issues as important were less likely to be satisfied with the services they received if these elements were not incorporated into their care.62 Therefore, clinicians in outpatient care settings must be willing to broach conversations around racism and racebased stress as they become relevant in the therapeutic environment.63

In addition, working from a strengthsbased perspective requires incorporating the family within individual-based treatments, as family support is one of the most important sources of support for Black families. Black youths are more likely to turn to family members when experiencing mental health distress than other youths and more often want to include them in treatment.64 Research has shown that family functioning both directly and indirectly relates to improved mental health among Black American clients; thus, it remains imperative to include families and, if clinically indicated, improve family functioning and communication in the treatment of Black American clients.

Provider stigma can also deter Black youths from mental health treatment through prejudicial beliefs and derogatory behaviors practiced in care settings.65 Providers not trained to work with Black youths may overpathologize normative behaviors and fail to assess traumatic stressors such as racism in their mental health conceptualization.66 Charles67 conducted an ethnographic content analysis of clients' and family members' thoughts about provider stigma and found that clients experienced stigma from providers owing to factors such as blame and shame, disinterest, annoyance, degradation and dehumanization, coercion, and lack of "real" choice. The author noted that sensitizing providers to these perceptions might reduce the likelihood of the occurrence of such behaviors.67

Furthermore, similar to our discussion regarding client stigma, public health interventions to reduce provider stigma have emphasized the need to involve clients, in this case Black youths and families, in providing input on the development of treatment policies and procedures addressing provider and systemic stigma.68 This emphasis needs to continue.

CONCLUSIONS

Taken together, the 3 standards of practice described here-using a sociocultural framework, exercising flexibility in one's assigned role, and understanding and incorporating culturally specific strengths and protective factors into care-embedded within a critical conceptualization of ecological systems theory, highlight the ongoing need for systemic mental health treatment reform at all ecological levels and challenge epistemological assumptions that are central to treatment environments as they currently stand.

Black youths experience many barriers when seeking mental health services in a system not designed for them. To eliminate disparities in mental health treatment and meet the unique needs of Black youths, public health professionals must redefine their role. It is our hope that the approach described in this manuscript will build toward a new standard of care and become embedded in our public health professional training programs. We believe this will shift what is normative practice in our varied fields for the betterment of service to Black youths and families and, thereby, all. This will require rethinking public health professions at the societal, community, and individual levels. It is incumbent on all of us as clinicians, researchers, and service providers to rise to the challenge. It is our hope that this discussion ignites culturally responsive research and redefined care models to equitably serve Black youths experiencing mental health concerns. Âfpu

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DETAILS

Subject:	Mental health services; Mental health; Public health; Training; Help seeking behavior; Sociocultural factors; Mental health care; Health care; Medical personnel; Attrition; Mentoring; Protective factors; Adverse childhood experiences; Psychologists; System theory; Professional practice; Well being; Professionals; African Americans; Health services
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Structural Racism and Racial Trauma Among African Americans at Elevated Risk for HIV Infection

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ABSTRACT (ENGLISH)

Forty years into the HIV epidemic, we have witnessed remarkable achievements. People living with HIV (PLWH) can thrive because of the availability of antiretroviral therapy (ART), with a lifespan like those without HIV. We learned that "U = U"; that is, we now know that PLWH whose HIV cannot be detected by laboratory testing cannot sexually transmit the virus to their partners. The advent of preexposure prophylaxis (PrEP) expanded biomedical HIV prevention tools, enabling people without HIV to protect themselves from infection. While we have the necessary HIV prevention and treatment tools to end the HIV epidemic, such a goal remains elusive. Unfortunately, these great achievements in research and practice have been accompanied by profound failures, including inequitable access to new HIV prevention and treatment options among African Americans.

Despite accounting for only 13% of the US population, African Americans comprise 42% of all new HIV diagnoses.1 For members of key subpopulations, the situation is even more dire; approximately half of African American men who have sex with men (MSM) are expected to contract HIV in their lifetime.1 Among all cisgender women, African Americans identifying as cisgender comprise 54% of new diagnoses, and African American transgender women comprise 46% of new diagnoses among all women.1 Compared with their peers from other racial/ethnic backgrounds, African Americans have lower rates of engagement in the HIV treatment continuum.1 In 2019 alone, for every 100 African Americans diagnosed with HIV, 74 received some HIV care, 56 were retained in care, and 61 were virally suppressed, indicating lower engagement than their White and Hispanic/Latino peers.1 While individual and social factors (e.g., HIV-related stigma, HIV knowledge, poverty, sexual risk) are frequently cited as the primary contributors to low engagement in the HIV prevention and treatment continuum, the spotlight on such factors masks the broader social, political, and economic conditions that generate and maintain observed racial disparities in HIV infections and related outcomes, such as structural racism and repeated exposures to racial trauma.2,3

In this article, we discuss the influence of structural racism (i.e., the way in which society promotes and sustains racial discrimination through larger systems and macro-level conditions that limit the opportunities, resources, power, and well-being of racial minorities) and racial trauma (i.e., the emotional injury resulting from exposure to various forms of racism, racial discrimination, and racial bias) on HIV-related outcomes among African Americans. We conclude with recommendations aimed at addressing these factors to end racial disparities observed in the HIV epidemic.

FULL TEXT

Forty years into the HIV epidemic, we have witnessed remarkable achievements. People living with HIV (PLWH) can thrive because of the availability of antiretroviral therapy (ART), with a lifespan like those without HIV. We learned that "U = U"; that is, we now know that PLWH whose HIV cannot be detected by laboratory testing cannot sexually transmit the virus to their partners. The advent of preexposure prophylaxis (PrEP) expanded biomedical HIV prevention tools, enabling people without HIV to protect themselves from infection. While we have the necessary HIV prevention and treatment tools to end the HIV epidemic, such a goal remains elusive. Unfortunately, these great achievements in research and practice have been accompanied by profound failures, including inequitable access to new HIV prevention and treatment options among African Americans.

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STRUCTURAL RACISM AND HIV

Structural racism is a key source of racial disparities in HIV-related outcomes2,4 and can occur in various social domains, including schools, corporations, legal systems, and health care. One of the most blatant and impactful examples ofthe influence of structural racism on HIV-related outcomes among African Americans was drug policy concerning controlled or illicit substances- policies that disproportionately targeted people of color.5 In 1971, led bythenPresident Richard Nixon, the US federal government declared drug abuse "public enemy number one," launching the War on Drugs-a federal campaign that sought to end the illicit drug trade in the United States, wherein the federal government budgeted billions for drugcontrol agencies, established harsh penalties for drug possession, and increased police presence in predominately ethnic minority communities.

Biases in the US drug policies and policing and sentencing practices led to harsher legal penalties for people of color who bought or sold drugs compared with their White peers; despite the similarities in illicit drug use between African Americans and White Americans,5 law enforcement agencies and state prosecutors inequitably targeted people of color for investigation and incarceration.5,6 Decades of failed policies and practices led to the mass incarceration of people of color, with incarceration of African American men skyrocketing. By 1980, the African American arrest rate for drug possession and drug sale was three times higher than for their White counterparts. Unfortunately, racial disparities in incarceration rates have worsened, with African American arrest rates being up to five times higher than for White Americans.7

The impact of the mass incarceration of African Americans on racial disparities in HIV-related outcomes is multilevel. At the individual and community levels, higher incarceration rates among African Americans disturbed sexual networks within the African American communities, limiting the pool of available sexual partnersand increasing the likelihood of overlapping sexual partnerships, thereby increasing HIV risk.5 Moreover, stigma and employment practices limited opportunities for those who were formerly incarcerated, including access to health insurance, leading to social and financial stressors, all of which had generational impacts on families and entire communities.4,6,8 Together, these policies contributed to the rise in HIV infection and transmission in African American communities.9

The impact of structural racism on HIV risk and transmission extends to the health care system. Previous research, for example, has linked poor health care quality to provider and systemic biases, including HIV-related stigma.10 Personal or vicarious experiences of racism, discrimination, and stigma within such systems has been linked to health care disengagement, including with preventive and HIV care.11,12 A study among African American women living with HIV, for example, found that perceptions of structural racism and discrimination in HIV care settings contributed to skepticism or distrust of medical advice and mistrust in the health care system.13

Taken together, structural racism operates through various social systems, including policy and health care provision, and has harmed generations of people of color by limiting access to HIV prevention and treatment resources, and exacerbating personal and communal experiences of racism and discrimination, leadingto experiences of racial trauma.14

RACIAL TRAUMA AND HIV

Racial trauma can result from both direct and vicarious experiences of racism12 and has been linked to psychological distress.14^ our knowledge, there are no studies exploring the effects of racial trauma on HIV risk behaviors. However, exposure to racial discrimination has been linked to poor HIV-related outcomes.15 One study, for example, linked more experiences with racial discrimination to greater engagement in risky sexual behaviors among heterosexual African American men.15

In addition to affecting engagement in risky sexual behaviors, racial trauma may also have an impact on engagement in HIV care. One study among African American MSM living with HIV, for example, found that participants reporting greater experiences of discrimination because of their HIV status, race, and sexual orientation were less likely than their peers with fewer reports of discrimination to adhere to their ART regimens over six months.16 In a recent study among older African Americans, experiences of HIV-related stigma and discrimination were linked to greater odds of medication nonadherence.17 Moreover, a recent meta-analysis found increased odds of ART nonadherence among PLWH with trauma-related histories than their peers without trauma histories.18 Although such studies are unable to infer causation, they do suggest that experiences of racial discrimination could have an impact on sexual behavior, though the nature of this link requires further investigation. As interest in the effect of structural racism and racial trauma on HIV outcomes continues to grow, more research is also needed to understand the impact of racial trauma on HIV outcomes among people of color.

While there is no singular solution for eliminating the racial disparities observed in HIV infections, efforts to end the HIV epidemic must include multilevel approaches aimed at dismantling structural racism and addressing racial trauma. We make the following recommendations for public health practice and research:

1. Provide HIV prevention services in correctional settings,
2. Address implicit bias and discrimination in health care,

3. Prioritize health equity and community engagement, and
4. Incorporate racial trauma healing into interventions.

PROVIDE HIV PREVENTION SERVICES IN CORRECTIONAL SETTINGS

Federal and state policies related to drug possession have led to higher rates of incarceration among African Americans. With correctional facilities being recognized as potential entry points for HIV prevention and treatment strategies,19,20 greater efforts are needed to ensure equitable access to biomedical prevention and treatment tools both during and after incarceration. Although condoms are widely known as effective HIV-prevention tools, they are often inaccessible because of concerns about encouraging sexual activity, a myth that has been repeatedly debunked. Providing condoms in correctional facilities could reduce HIVtransmission in those settings20 and prepare individuals who are released to adopt such practices while in the community. Like condom distribution, offering PrEP in correctional facilities could also reduce HIVtransmission risk.

HIVtesting and screening practices within correctional facilities vary from state to state. Some facilities only offer testing at the request of an inmate or during the intake process. Public health practitioners and scholars have advocated universal HIV testing and screening procedures, which could increase early detection of HIV and improve linkage to HIV care within correctional systems.19 One policy, opt-out HIV testing, has been linked to increased rates of HIV testing among incarcerated populations compared with opt-in approaches.20

In addition to obtaining resources within correctional facilities, access to resources in the community must also be addressed. Decarceration, which involves releasing incarcerated persons with nonviolent offenses, is a strategy for reducing racial inequities in incarceration. Although this strategy could reduce racial disparities in disproportionate rates of incarceration, we need to concurrently implement strategies that also reduce HIV transmission risk. While access to HIV treatment within prisons is often required by federal or state policies or both, formerly incarcerated people often lose access to HIV treatment upon release, as they often face challenges with securing follow-up care because of economic and employment instability.9,21 These challenges create barriers for continuing HIV care and accessing ART. Legislation focused on criminal justice reform and decarceration should address systematic factors that interrupt HIV care, such as affordable housing, under- or unemployment, and failure to expand Medicaid access. As such, criminal justice reform could improve access to re-entry programs, which assist formerly incarcerated populations with linkage to support services, including mental health treatment, employment and housing, and health care.

ADDRESS IMPLICIT BIAS AND DISCRIMINATION IN HEALTH CARE

Implicit bias-a form of bias that occurs automatically and unintentionally that affects judgments, decisions, and behaviors-is common among health care providers and threatens equitable access to HIV prevention and treatment services. Previous research observing PrEP uptake among African Americans, for example, linked health care provider decision-making regarding the appropriateness of PrEP to racism and both implicit and explicit biases against patients.22

While there are ongoing efforts to address implicit bias in health care, including revisions to the curricula in training programs, statewide mandates requiring implicit biastrainingto meet continuing education requirements for some health care professionals, and the implementation of structural competencytraining, which seeks to educate providers on the role of structural racism on racial health disparities, the long-term effectiveness of such programs is unknown. Moreover, there are often unclear metrics applied toward measuring the effectiveness of such programs, as the field is still evolving in this area; we need validated tools and standardized constructs to enable cross-comparisons and evaluation.

PRIORITIZE HEALTH EQUITY AND COMMUNITY ENGAGEMENT

Health communication campaigns aimed at increasing engagement in the HIV prevention and treatment continuum can impact one's attitudes, beliefs, willingness to change, and behavioral intentions.23 HIV prevention and treatment messaging should not only address individual behaviors but also reach further, challenging social and cultural norms that lead to high-risk behaviors.23 To do so, we must engage key populations in the research, development, implementation, and dissemination of novel interventions that could lead to structural changes, including economic and housing development. Engaging affected populations in HIV research could facilitate the development of culturally relevant messages with a higher likelihood of community buy-in and acceptance,24 which could provide evidence for the need for policy changes that could have an impact on social and cultural norms.

In addition to engaging members of key populations in public health practice and research, increasing representation of African Americans within HIV care and research can also improve HIV outcomes. Previous research, for example, has shown that patients receiving care from providers with the same racial identity reported a more positive experience in health care and more effective communication with their health care provider. However, structural racism within academic admissions affects diversity in this field, with many scholars advocating structural change by establishing pipeline programs for people of color, implementing antiracism curricula, utilizing more holistic approaches to application review for academic admissions, and developing initiatives aimed at mentoring and supporting trainees of color within professional health programs.

INCORPORATE RACIAL TRAUMA HEALING INTO INTERVENTIONS

For many African Americans, experiences of racism, discrimination, and bias are unavoidable facets of life. These experiences, however, are linked to poor health outcomes, including trauma and psychological distress.25 Among African Americans living with HIV, experiences of racism and trauma can intersect with stigma and discrimination associated with their HIV status and sexual orientation, among other socio-structural determinants.3 Completely eliminating all forms of racism from our society, however unlikely, will take time. As such, we must ensure that African Americans are able to cope with these unfortunate and unjust burdens. Within mental health treatment interventions, incorporating racial trauma healing into HIV prevention and treatment interventions may be a necessary step toward supporting African Americans at elevated risk of contracting HIV or currently living with the virus. Racial trauma healing describes a therapeutic process that implements strategies aimed at helping people of color heal from traumatic racial experiences. For example, Metzger et al. shared several approaches for addressing racial trauma among African Americans receiving mental health treatment, including integrating racial socialization-the process of transmitting cultural attitudes, behaviors, perceptions, and values to help African American adolescents manage racial discrimination and racism-into evidence-based psychotherapies.25 Specifically, the researchers proposed adaptations to trauma-focused cognitive behavior therapy that would include racial socialization and suggested that clinicians use culturally relevant communication approaches (e.g., poetry and music) rather than the general storytelling that is recommended to encourage youth to share their experiences with racism and discrimination, exploring how they contribute to current challenges and ways to overcome them. Among African Americans living with HIV, incorporating racial trauma healing into mental health treatment may support retention in HIV care and ART adherence by providing strategies for coping with intersecting trauma and stressors that could disrupt health care engagement.

CONCLUSION

Ending racial disparities observed in HIV-related outcomes requires usto focus our efforts on addressing structural racism and reducing the impact of racial trauma on populations affected by HIV. Incorporating racial socialization and healing into HIV prevention and treatment efforts may provide tools for coping with stressors, thereby improving HIV outcomes. This could also reduce mistrust among African Americans living with HIV and medical providers and reduce interruptions of HIV care thereby improving ART uptake and adherence. Still, efforts are needed to diversify the field of HIV prevention and treatment, enabling more scholars of color to be leaders in addressing the racial HIV disparity. We posit that addressing structural racism in these suggested ways will allow us to combat disparities in HIV outcomes that disproportionately impact African Americans. ÂfPU

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CONFLICTS OF INTEREST

The authors have no conflicts to declare.

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DETAILS

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Strengthening Families to Disrupt Intergenerational Health InequitiesWith Adolescents at Risk for Commercial Sexual Exploitation, Substance Use, and HIV

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ABSTRACT (ENGLISH)

Individuals aged 13 to 24 years account for one out of every five new HIV diagnoses in the United States.1 The commercial sexual exploitation (CSE) of children is a major risk factor for transmission of HIV and other sexually transmitted infections.2 CSE is a complex crime encompassing recruitment of minors for the performance of commercial sex acts, buying sexual services, and "survival sex" or the exchange of any sexual activity for basic needs regardless of the monetary value.2 While children from every demographic in the United States have experienced CSE, minoritized adolescents-particularly those identifying as racially/ethnically minoritized or minoritized because of sexual preference or gender identity (lesbian, gay, bisexual, transgender, queer or questioning, or other [LGBTQ+]) are disproportionately vulnerable.2

The substance abuse, violence, and HIV/AIDS syndemic refers to the documented clustering of substance abuse, violence (including CSE), and HIV among marginalized groups.3 A syndemic lens views these phenomena as interrelated health disparities occurring within a broader milieu of power relations, trauma, and structural inequities.3 A syndemic approach to CSE prevention recognizes the contribution of social environments to vulnerability and centers families and communities as key protective resources.4

Family-based public health interventions must shift away from the historical focus on individual risk factors (e.g., gender, race, sexual orientation) to adequately consider how identity, historical trauma, and systemic and internalized oppression (sexism, racism, homophobia, and transphobia) affect minoritized individuals' vulnerabilities and disproportionate exposure to adversity.2 Key to preventive public health approaches is recognizing that adversity-impacted adolescents who simultaneously experience adverse childhood experiences, financial strain, and housing instability are most vulnerable to CSE, substance use, and HIV infection. While racially/ethnically minoritized adolescents navigate added burdens of racial stress, trauma, and discrimination, their parents are shouldering the added responsibility (and stress) of enabling their children to cope with racism and discrimination.5 Public health practitioners working with high-risk populations must therefore be careful not to perpetuate narratives

about minoritized families that fail to examine how oppressive power structures impede healthy family functioning.

FULL TEXT

Individuals aged 13 to 24 years account for one out of every five new HIV diagnoses in the United States.1 The commercial sexual exploitation (CSE) of children is a major risk factor for transmission of HIV and other sexually transmitted infections.2 CSE is a complex crime encompassing recruitment of minors for the performance of commercial sex acts, buying sexual services, and "survival sex" or the exchange of any sexual activity for basic needs regardless of the monetary value.2 While children from every demographic in the United States have experienced CSE, minoritized adolescents-particularly those identifying as racially/ethnically minoritized or minoritized because of sexual preference or gender identity (lesbian, gay, bisexual, transgender, queer or questioning, or other [LGBTQ+]) are disproportionately vulnerable.2

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Positive parenting is associated with adolescent resilience and favorable health and developmental outcomes.7 Viewed from a syndemic framework, resilience becomes an ecological construct because it takes more than individual capacity to adapt positively under conditions of adversity and traumatic stress.6 Our work uses strengths-based approaches to disrupt interconnected risk factors through the implementation of family-based preventive interventions that promote positive parenting and family resilience through targeting family functioning, communication, and cohesion. In addition, families must find cultural meaning in the services and resources made available to them.6 The cultural tailoring of preventive family interventions with demonstrated efficacy among at-risk adolescents, therefore, offers a pragmatic pathway to successful integration of evidence-based interventions to benefit populations at highest risk for CSE, substance use, and HIV.

Our adaptation of "SupportTo Reunite, Involve, and Value Each other" (STRIVE),8 offers one such example. STRIVE, a five-session manualized psychoeducational family intervention that incorporates cognitive behavioral therapy strategies to facilitate development of communication skills, problem solving, and creating a positive family atmosphere has demonstrated efficacy in reducing substance use, risky sexual behavior, and delinquent behaviors among racially/ethnically minoritized adolescents aged 12 to 17 years with lived experience of homelessness. We adapted STRIVE for implementation among racially/ethnically minoritized adolescents with lived experience of homelessness at risk for CSE in Chicago, Illinois.9 Educational content for adolescents and parents or caregivers on healthy relationships and CSE was added to original STRIVE content. The adapted (STRIVE+) intervention aimed to reduce risk for CSE through education and promoting a positive family atmosphere by targeting improved communication and problem-solving to disrupt negative trajectories leading to the adolescent running away or being kicked out of the home.

We piloted STRIVE+ using a longitudinal mixed-methods design with seven racially/ethnically minoritized adolescents (aged 12-17 years) with recent lived experience of homelessness and their parents or caregivers (six parents and one grandparent). We defined lived experience of homelessness broadly to include being without a safe and stable home, living in a shelter, having contact with the child welfare or juvenile justice system, running away from home, or being asked to leave the family home at least once overnight in the past six months. Results are reported elsewhere.10 The purpose of the current editorial is to share lessons learned from implementing the adapted STRIVE+ intervention to aid public health practitioners working with high-risk minoritized adolescents and their families. These lessons derive from qualitative findings from semistructured interviews with participants and our experiences piloting the adapted intervention.

WHOLE HOUSEHOLD STRENGTHS-BASED FAMILY INTERVENTIONS

From the start, STRIVE + worked to build upon existing strengths by creating a positive atmosphere between the adolescent and parent. Participants immediately recognized the value of focusing on positive aspects of the family and emphasized the value of offering STRIVE + to additional household members beyond the enrolled dyad, ideally extending the intervention to the entire household when feasible. We enrolled only one adolescent at a time, even in cases where multiple adolescents in the same family were eligible. However, participant feedback highlighted how family dynamics are created and influenced by more than just the enrolled dyad and suggested extending the intervention to all interested members of the household. As one adolescent explained, "It should be all about involving the entire household, 'cause most siblings and most adults kind of really need just to sit down and understand one another."

Participants shared how STRIVE+ facilitated communication among household members and emphasized that extending the intervention to the entire household may further improve household communication. Parents additionally identified their need for support in improving relationships, particularly with adolescents they regarded as defiant or with whom the relationship was already strained. Participants suggested that STRIVE+'s promotion of constructive dialogue and positive family atmosphere may work preventively to preempt behaviors such as kicking defiant adolescents out of the home or adolescents leaving home without permission. As one mother shared, "It wouldn't necessarily be [for just kids] experiencing homelessness or kids that's a runaway. I would say kids that [are] on the verge of running away or parents that don't quite know how to talk to their children."

Recruitment challenges are a common barrier to effective implementation of family-based interventions, and attempting to enroll entire households may further challenge recruitment efforts. Therefore, when implementing family-based interventions with enrolled participants, we suggest offering the intervention to additional interested household members as feasible to amplify potential benefits.

PRIORITIZING CULTURAL RELEVANCE

Limited resources can create competing priorities when piloting new or adapted interventions in the community. However, prioritizing cultural relevance is crucial for advancing our understanding of implementing impactful interventions in communities who need them most. We intentionally adapted STRIVE+ with cultural and contextual relevance in mind.9 To be inclusive of multiple, intersecting identities among adolescents targeted for recruitment (e.g., Black and LGBTQ+), we included both adolescents and community stakeholders with expertise working with each of these identities in the adaptation process. We also prioritized cultural relevance by employing a diverse study team representative of those we were trying to recruit.11 Even when teams are not diverse, ensuring cultural humility should be an intentional effort.11

Central to prioritizing cultural relevance is embracing a paradigm shift away from cultural competence frameworks that have further contributed to discrimination and marginalization of certain populations and toward a cultural humility approach.12 Cultural humility includes positioning oneself as a lifelong learner who continually engages in self-reflection and critique while seekingto build foundational relationships through respectful communication, feedback, and mutual learning.13-15 Through acknowledging power imbalances and implicit biases, respectful partnerships facilitate institutional accountability and truly center trauma-informed care.15 We centered a cultural humility approach in the training of team members facilitating STRIVE + as well as through weekly working alliance measures and checkins conducted to ensure participant satisfaction and acceptability.

In addition to cultural humility, eliminating language barriers is an important component of cultural relevance. Participants suggested STRIVE 1 be made available in languages besides English to enable participation of nonEnglish-speaking family members and families who would otherwise not be able to participate. One adolescent shared, "If STRIVE+ had Spanish ... I think my mom and my grandma could have a benefit. They're both adults now, but there are certain things that they could benefit from.... They don't communicate enough when it comes to serious topics emotionally." Restricting small pilots to English speakers has been justified on the basis of inadequate resources as it can be expensive and time-consuming to translate materials and support additional staff needed to implement the intervention. However, funders may also be more supportive of implementing adapted interventions with demonstrated efficacy rather than interventions with unknown benefit. Regardless, cultural relevance should be prioritized in pilot budgets to ensure adapted interventions can be adequately piloted within the targeted population.

MAXIMIZING FLEXIBILITY FOR PARTICIPANT NEEDS

STRIVE1 was delivered through in-person sessions at community locations convenient to participants, including school-based health centers and homeless shelters. Designing the adapted intervention to be mobile proved critically important for participant recruitment and retention. When the COVID-19 pandemic impacted everyone's mobility, we subsequently shifted to virtual STRIVE+ sessions. While virtual recruitment proved less than ideal, engaging with those already enrolled via phone or video was found to facilitate continued engagement even one year after the intervention.

For in-person STRIVE+ sessions, we provided participants with bus passes to offset transportation costs, and feedback indicated that this was an important factor for participant engagement. As one parent explained, "I'm unemployed, so I have no income. The transportation on my end, it was really hard, but then they started providin' the bus card, so that helps a lot." We initially distributed bus cards during sessions so they could be used for the ride home and to the next session, but soon realized that some families needed the bus pass to get to the session that day. We subsequently ensured participants received bus passes before each session. Assessing attendance challenges may illuminate unique needs and subsequently adjusting available resources may result in improved intervention retention.

In addition, we learned that offering family-based interventions in a hybrid manner offers the most flexibility and potential for maximizing participant engagement and retention. For example, some participants reported a preference forthe STRIVE1 in-person sessions. As one adolescent remarked,

"I actually prefer in person to be honest because it's different. Everyone's in the same space." A caregiver similarly explained, "I definitely would prefer it in person ... 'cause talkin' over the phone, or on video, isjust not the same as actually talkin' to someone in person. I was more comfortable actually sittin' in the room, seein' someone look me in my eyes and literally payin' attention ... was more comfortable for me."

However, other participants described wanting greater flexibility, expressing their preference forthe virtual sessions and wishing the virtual format had been offered before the pandemic as well. As one adolescent explained, "I like them being held on video 'cause sometimes it be hard tryin' to get over there." Another adolescent shared,"... at the time I was very busy, and I had a lot on my plate, and, if they woulda had these video calls then, it woulda been way easier on me 'cause then I wouldn'ta had to worry about being in two different places at the same time."

Some participants suggested offering maximal flexibility by offering a "hybrid" video option during in-person STRIVE + sessions so that even if unforeseen barriers arose, they would still be able to attend sessions. We suggest hybrid options offer maximal flexibility at minimal impact to study budgets. It may be difficult to predict individual barriers among intervention participants (e.g., some may not have access to stable Internet connection to access virtual meetings, whereas others may still be unable to travel to and from in-person sessions regardless of bus passes being provided), and offering the most flexibility offers maximal accessibility and participant retention.

INSIGHTS FOR PUBLIC HEALTH PRACTITIONERS

While the intergenerational transmission of trauma has garnered a lot of attention lately,16 less attention has been given to intergenerational transmission of resilience in response to trauma. Our work with young people with lived experience of homelessness focuses on teaching adolescents and the positive, supportive adults in their lives how to build on family strengths to develop the necessary skills to thrive despite adversity.11,17-19 Positive family connections are important for healthy development, yet families of racially/ethnically minoritized adolescents are often overlooked in interventions or viewed as problematic rather than a potential resource for improving adolescent health.5 Engaging families as a protective factor serves as a key disruptor to syndemic risk factors.20 We share lessons learned from our pilot work with one family intervention for adolescents at risk for CSE, HIV, and substance use to aid public health practitioners working with vulnerable adolescents and their families. These lessons include welcoming entire households, incorporating cultural tailoring, and offering maximum flexibility while assessing and responding to participant needs.

We understand the challenges inherent in integrating family interventions into public health practice to benefit adolescents and their families at highest vulnerability.21,22 Just as substance use, violence, and AIDS/HIV are intertwined, so are adolescents, parents, families, and communities. Focusing on the social environments of adolescents at risk for CSE, substance use, and HIV is critical to our prevention efforts.23 As adolescents' resilience depends on family and community systems being able to provide adequate resources,23 effective prevention efforts hinge on our ability to strengthen those systems through well-planned communitybased engagement and family-based interventions.

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D.T. Bounds conceptualized the study, acquired study funding, and oversaw collection of the data and writing of the article. S. M. Rodrigues analyzed qualitative data and wrote the article. N.G. Milburn critically reviewed and revised the article.

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Note. The content is solely the responsibility of the authors and does not necessarily represent the officialviews of the NIH.

CONFLICTS OF INTEREST

The authors report no potentialor actualconflicts of interest.

HUMAN PARTICIPANT PROTECTION

The study received institutionalreview board approval(18021703) from the Rush University MedicalCenter. Allparticipants provided written informed consent before participating in the study.

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DETAILS

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Advancing Public Health and Social Equity Through Research, Training, and Action

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ABSTRACT (ENGLISH)

Despite advances in prevention and treatment, people of color in the United States are at heightened risk for substance use and HIV because of underlying structural and social inequities. Although racism, stigma, and discrimination are known drivers of disparate substance abuse and HIV outcomes, public health efforts to advance research and support the systemic policy and programmatic changes needed to address racial and social inequities have been inconsistent in approach and implementation. In recent years, highly publicized miscarriages of justice and civil rights violations (e.g., murder of George Floyd and other national and international incidents of police brutality, disproportionate burden and impact of the COVID-19 pandemic on communities of color, and forced sterilization of women in immigrant and criminal detention facilities) have propelled systemic inequities and racial trauma to the forefront of public discourse, ushering in renewed attention to these longstanding issues.

Still, research examining the ill effects of racism, stigma, and discrimination on HIV and substance use outcomes, as well as potential evidence-based solutions, remain limited in their capacity to sufficiently advance health equity. There remains an urgent need to clarify how harmful structural racism is to substance use and HIV outcomes and how it, along with intersectional stigma and discrimination, uniquely affects different populations. For this research to be responsive, relevant, and culturally grounded, greater community engagement, including the inclusion of research perspectives from Black people, Indigenous people, and other people of color (BIPOC), should be prioritized.

In this AJPH special issue, we highlight the work of early career investigators who completed the HIV/AIDS, Substance Abuse, and Trauma Training Program. This is a mentored research training program funded by the National Institute on Drug Abuse. It provides multidisciplinary, state-of-the-art training to better equip early career investigators to advance National Institutes of Health-funded research that investigates and challenges practices in racialized systems (e.g., education, employment, health care, and criminal justice) that stymie public health efforts to achieve health equity. Central to this program is mentoring to support rigorous communitydriven research with special attention to the challenges that new investigators, especially BIPOC, face that constrain opportunities and stifle creative approaches and solutions to our most pressing public health challenges.

The articles in this issue investigate a range of public health challenges, including community violence, racial trauma, HIV, substance use, and mental health problems, calling for a paradigm shift in the training, theoretical frameworks, methodological and intervention approaches, and policies used to achieve health equity.

FULL TEXT

Despite advances in prevention and treatment, people of color in the United States are at heightened risk for substance use and HIV because of underlying structural and social inequities. Although racism, stigma, and discrimination are known drivers of disparate substance abuse and HIV outcomes, public health efforts to advance research and support the systemic policy and programmatic changes needed to address racial and social inequities have been inconsistent in approach and implementation. In recent years, highly publicized miscarriages of justice and civil rights violations (e.g., murder of George Floyd and other national and international incidents of police brutality, disproportionate burden and impact of the COVID-19 pandemic on communities of color, and forced sterilization of women in immigrant and criminal detention facilities) have propelled systemic inequities and racial trauma to the forefront of public discourse, ushering in renewed attention to these longstanding issues.

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REDUCING MENTAL HEALTH DISPARITIES

The historical and current manifestations of structural racism have had a long and lasting impact on the mental health of BIPOC in the United States. For example, Black youths are expected to progress through developmental milestones in racially antagonistic spaces that expose them to a number of systemic stressors, including community violence, racism, trauma, and poverty. These factors cause and exacerbate mental health problems and perpetuate growing inequities in access to and engagement in mental health treatment.

Hampton-Anderson et al. (p. S140) use the socioecological model to characterize multilevel influences on mental health outcomes among Black youths and focus on mental health provider training as a strategy to mitigate Black youths' premature attrition from treatment. Specifically, they advocate a training model centering three innovative standards of practice that account for society-, community-, and individual-level influences on mental health. The public health implications of this model are vast and include directives for training and mentoring that attend to the social-structural and cultural needs of Black youths; balance mental health treatment with social justice advocacy; and develop evidence-based approaches that amplify the cultural strengths, values, and practices that are salient in Black communities.

Bernard (p. S133) extends the work of Hampton-Anderson et al. to draw attention to the mechanisms by which a lack of culturally responsive training and mentorship perpetuates mental health disparities for Black youths. In particular, Bernard suggests that systemic changes in access to mental health care services are necessary, but insufficient, to promote positive mental health outcomes among Black youths. Taken together, the articles by Hampton-Anderson et al. and Bernard elucidate a multipronged path toward addressing racial disparities in mental health care involving the training and mentoring of mental health professionals to eliminate inequitable treatment strategies. This strategy will also increase mental health professionals' knowledge of issues related to culture, racial inequity, and advocacy for systems-level changes that target structural racism, thereby reducing barriers to retention in mental health care.

STRUCTURAL RACISM AND DISCRIMINATION

Despite significant advances in HIV prevention and treatment, racial and ethnic disparities in HIV-related outcomes persist. Burton et al. (p. S102) summarize evidence exploring the associations between structural racism and sexual risk. They propose four novel and impactful recommendations for the field that challenge traditional definitions of HIV risk and highlight the necessary research and practice advances needed to end racial and ethnic HIV disparities. Their work is particularly relevant to the editorial presented by Loeb et al. (p. S107), which describes how the care experiences of Black and Latinx people living with HIV could inform culturally relevant multilevel strategies for managing public health crises, such as the COVID-19 pandemic, in the context of structural racism. They emphasize the importance of developing policies and programs that address structural inequities and barriers to health care access with patient-centered behavioral strategies that mitigate health risks. They consider how the skills and challenges people of color living with HIV faced duringthe height ofthe COVID-19 pandemic should be better understood to improve health equity for people livingwith HIV in the face of current and emergent public health threats.

Transgender and nonbinary people face an egregious amount of violence, stigma, and discrimination. In the United States, several state and federal policies (on, e.g., health insurance, education, access to public restrooms) have undermined the rights of transgender and nonbinary people, affecting their mental health and physical wellbeing and thereby leading to further victimization. Berke et al. (p. S115) specify that victimization of transgender and nonbinary people must be understood in the larger context of discrimination at the intersection of interlocking systems of oppression. They propose multilevel empowerment interventions as a strategy to address violence toward BIPOC transgender and nonbinary people and to disrupt structural contributions to their victimization. They discuss how the act of shifting power from researchers to community members leads to more innovative and effective strategies to reduce violence toward transgender and nonbinary communities and to achieve health equity.

Inequitable social-structural systems and experiences of trauma heighten vulnerability for commercial sexual exploitation, substance use, and HIV among BIPOC children and adolescents. Although much has been written on intergenerational transmission of trauma, less attention has been given to intergenerational transmission of resilience. Bounds et al. (p. S124) present findings, challenges, and lessons learned from their implementation of an adapted intervention called Support to Reunite, Involve, and Value Each Other. This intervention aids public health practitioners working with vulnerable minoritized adolescents and their families. Drawing on their work with young people with lived experience of homelessness, Bounds et al. focus on strengths-based approaches to implement family-based interventions to promote positive parenting, family resilience, and social cohesion. Their intervention offers a way for future researchers and practitioners to understand how to work with BIPOC adolescents and families to incorporate cultural values, family dynamics, and flexibility to effectively adapt evidence-based interventions to these populations.

Exposure to racism and racial trauma in K-12 schools negatively affects the academic achievement, emotion regulation, and socioemotional health and well-being of students. Recent politicization of teaching about critical race theory, racism, and racial trauma in schools has exacerbated oppressive systems in higher education. As states continue to pass laws that limit education on the history of slavery, racism, and racial inequality, the need for collective action and racial healing is pressing. Racial healing is a process that rejects norms of White superiority, celebrates cultural heritage and identity, challenges privilege and White supremacy, and provides guidance on the introspective and interpersonal work needed to collectively heal from racial trauma and injustice. Tan et al. (p. S119) share an insightful process to develop and implement a racial-healing initiative to promote socioemotional wellness and address racism in K-12 schools. They describe their formative research; strategies for collaborating with youths, parents, and educators; and lessons learned for future school-based racial healing initiatives. They conclude with a call to action to remain hopeful in our efforts to achieve health equity and provide strategies to promote racial healing in schools based on their study findings.

Lastly, Wyatt et al. (p. S110) describe the development and implementation of the Women-Centered Program for Women of Color, a culturally congruent intervention to reduce sexual health risks for women of color in a low-income area of Los Angeles County, California. Guided by the principles of communitybased participatory research, Wyatt et al. practiced cultural humility to develop this program for Black and Latina cisgender women, which combines increased information and skills about HIV and sexually transmitted infection prevention with reproductive health. Wyatt et al. describe an innovative and powerful intervention conducted during the COVID-19 pandemic for women of color who, because of poverty, trauma, and gendered racism, are at heightened vulnerability for HIV and unintended pregnancy. Lessons learned from this intervention provide a way forward for engaging this often forgotten yet highly vulnerable group in HIV prevention.

INTERPERSONAL VIOLENCE

At the onset of the COVID-19 pandemic, reports of interpersonal violence increased in the United States. Public health measures designed to curtail the spread of COVID-19 along with heightened social-structural stressors associated with the pandemic resulted in an increase in interpersonal violence, mental health problems, and substance use. Marginalized communities experience disproportionate amounts of interpersonal violence, with Black and Latina women being particularly affected. Smith-Clapham et al. (p. S149) assessed the effects the COVID-19 pandemic had on women of color experiencing interpersonal violence and provide recommendations for training law enforcement, mental health clinicians, and public health care professionals to implement and manage prevention and intervention efforts targeting interpersonal violence. They conclude with robust policy recommendations to disrupt systems that isolate and stigmatize survivors of interpersonal violence.

MEASURING EXPOSURE TO RACISM

It is well established that physical and social environments contribute to disparities in substance use across the life course, particularly for BIPOC adolescents and young adults. The articles presented by Zhen-Duan et al. (p. S129) and Taggart et al. (p. S136) underscore the need to refine traditional measures of social and physical neighborhood environments to better assess the contributions of structural racism to adolescent and young adult substance use. Zhen-Duan et al. summarize the limitations of the Adverse Childhood Experiences Questionnaire in research on racial and ethnic disparities in substance use, arguing that the conceptualization of adverse childhood experiences cannot be separated from the social environment or intergenerational impacts of structural racism. They suggest that the Adverse Childhood Experiences Questionnaire be expanded to enable an examination of the mechanisms through which racism and inequality affect substance use outcomes for BIPOC youths. They also posit that nuanced methodological approaches that model complexity and interactions between individuals and their environment are needed to advance health equity.

Relevant to the work of Zhen-Duan et al., Taggart et al. propose a novel methodological approach to assess neighborhood influences on substance use that centers the lived experiences of Black youths in theirsocial and physical neighborhood environments. Taggart et al. integrate components of activity space assessments, racialized risk environment models, and models of community violence to investigate the cooccurrence of racism-related stress and substance use among young Black men. Their study findings elucidate the community- and structurallevel strategies needed to increase health-promotive neighborhood contexts and reduce racism-related stressors.

FINAL THOUGHTS

The articles in this supplement show that eliminating structural racism and achieving health equity requires that we first acknowledge structural racism as a fundamental cause of health inequities. Next, we must advance training, policies, clinical practices, and methodologies that propose radical shifts in traditional public health approaches. For this research to be effective, it is essential that greater inclusion of-and research perspectives from-BIPOC investigators be prioritized. These articles highlight the work of highly skilled early career investigators who are poised to lead efforts aimed at dismantling structural racism and who have been supported by the National Institutes of Healthfunded initiatives intended to increase diversity and facilitate equitable and inclusive practices that are necessary to advance health equity.

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Implications of the COVID-19 Pandemic on Interpersonal Violence Within Marginalized Communities: Toward a New Prevention Paradigm

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ABSTRACT (ENGLISH)

During the COVID-19 pandemic, reports of domestic violence across the United States increased from 21% to 35%. Stay-at-home orders, designed to protect the public against the spread of COVID-19, along with heightened societal stressors as a result of the global pandemic, inadvertently increased rates of illicit drug and alcohol use, job loss, and isolation, resulting in increased stress and nonphysical (e.g., psychological, emotional, economic, technological) abuse that often escalated to physical violence. These processes were exacerbated in marginalized communities. These risks were heightened among Black women and Latinas, who experience high rates of domestic violence, long-standing distrust in law enforcement, and compromised self-reporting or anonymous reporting of abuse. We make recommendations for training key stakeholders (e.g., law enforcement, mental health clinicians, and public health care professionals) to facilitate the safety and well-being of domestic violence survivors and to better manage prevention or intervention efforts targeted at domestic violence. We make public health policy suggestions for individuals, communities, and governing structures. (Am J Public Health. 2023;113(S2):S149-S1 56. https://doi.org/10.2105/AJPH.2023.307289)

FULL TEXT

Headnote

During the COVID-19 pandemic, reports of domestic violence across the United States increased from 21% to 35%. Stay-at-home orders, designed to protect the public against the spread of COVID-19, along with heightened societal stressors as a result of the global pandemic, inadvertently increased rates of illicit drug and alcohol use, job loss, and isolation, resulting in increased stress and nonphysical (e.g., psychological, emotional, economic, technological) abuse that often escalated to physical violence.

These processes were exacerbated in marginalized communities. These risks were heightened among Black women and Latinas, who experience high rates of domestic violence, long-standing distrust in law enforcement, and compromised self-reporting or anonymous reporting of abuse.

We make recommendations for training key stakeholders (e.g., law enforcement, mental health clinicians, and public health care professionals) to facilitate the safety and well-being of domestic violence survivors and to better manage prevention or intervention efforts targeted at domestic violence. We make public health policy suggestions for individuals, communities, and governing structures. (Am J Public Health. 2023;113(S2):S149-S1 56. https://doi.org/10.2105/AJPH.2023.307289)

The COVID-19 pandemic stands as a catastrophic worldwide event that has included historically high unemployment rates, reduced social services, long quarantines, and severe social disconnection.1,2 Similar to what occurs during natural disasters such as earthquakes and catastrophic hurricanes, interpersonal violence (IPV) increased when stay-at-home mandates were implemented in spring 2020.1,3 For instance, during the period of 2019 to 2020, there was a 21% to 35% increase in reports of domestic violence across the United States.4 Of note, marginalized communities (e.g., underresourced, socially isolated, discriminated against, underprivileged) experience the highest rates of domestic violence, with Black women and Latinas disproportionately affected.5-7 For example, in the latest published National Intimate Partner and Sexual Violence Survey from the Centers for Disease Control and Prevention (CDC), 12.3% of Black women and 12.1% of Black men reported experiencing IPV within the last year.8

We examine the prevalence of domestic violence overall, with careful consideration of its prevalence in marginalized communities. We outline nonphysical abuse and how it contributed to the increased rates of physical violence during the COVID-19 pandemic, in addition to the barriers to reporting abuse during this time. We make recommendations for training key stakeholders such as law enforcement, mental health clinicians, and public health care professionals to facilitate the safety and wellbeing of domestic violence survivors and to better manage prevention or intervention efforts targeted at domestic violence. We conclude with public health policy suggestions for individuals, perpetrators, communities, and governing structures to enhance advocacy for survivors of violence.

DOMESTIC VIOLENCE PREVALENCE

The total annual US medical costs associated with domestic violence exceeds $5.8 billion, consequently increasing the health care costs for the entire population.9 Survivors of domestic violence are more vulnerable to chronic illnesses, including heart disease, diabetes, and traumatic disorders.9,10 These public health issues are of substantial financial and social significance to survivors, families, and society at large.11 Domestic violence often occurs when there are power imbalances in relationships, whereby one partner seeks to control, manipulate, or overpower a member or members of the household.12

Although women may be perpetrators of IPV, domestic violence more often occurs when toxic masculinity or male privilege pervades the household, as perpetrators with this mindset believe that men control the decisions and that the survivor's purpose is to serve them.13 Failure to obey or comply is often met with some form of punishment, such as nonphysical abuse (e.g., psychological, verbal, economic, or technological abuse or threatening to report them to be deported) as a way to maintain control.12-14 Domestic violence increases when perpetrators suffer from substance or alcohol abuse, stress, or mental illness.3,15 Overtime and without proper intervention, nonphysical violence can transition to physical violence; 25% of women in the United States have experienced physical violence.7,14,16

Marginalized communities are disproportionately represented in lower socioeconomic areas7 and often consist of groups who are systematically treated unfairly, discriminated against, or socially excluded.17 Domestic violence occurs in all communities regardless of race/ethnicity, education, socioeconomic or employment status, neighborhood, religious affiliation, or sexual orientation. However, underresourced communities have higher documented rates of domestic violence,4-7 perhaps because of the involvement of law enforcement, social service agencies, public schools, hospital emergency departments, and other public facilities with fewer economic resources and privacy protections compared with more affluent communities.14

Despite victims' rights, survivors of any socioeconomic stratum may deny incidents of abuse or refuse care out of fear that reporting their perpetrator to authorities may result in additional adverse consequences (e.g., stigma or shame from family, friends, or the larger community).18 Domestic violence affects Black women at disproportionately higher rates and often has lethal outcomes: they are killed in domestic violence incidents at more than double the rate of other racial/ethnic groups.5 In addition, 1 in 6 Latinas will experience domestic violence in their lifetime, representing another high-risk group.17 Women of color, those with low socioeconomic status, and dependent individuals are most affected by abuse14,18 and have been disproportionately affected by the adverse effects of the COVID-19 pandemic through job loss, increased family demands, and contracting COVID-19.15 Additional risks for violence victimization among marginalized groups may include the perceived inability to seek protection from social services or law enforcement because of historic mistrust of these systems.15,18

NONPHYSICAL AND PHYSICAL ABUSE

It is critical to understand the precursors that lead to physical violence, as it often begins with nonphysical violence and escalates overtime.16,18 When stress increases in a family because of lack or loss of resources, nonphysical violence such as emotional abuse, aggression, and neglect are more likely to occur, leading to an overall increase in both domestic violence and child abuse.1,7 The risk factors present in US society duringthe COVID-19 pandemic contributed to increased violence in the home possibly owing to systemic factors that led to the normalization of control and violence in relationships, even when restrictions eased and public access increased.13,19 For instance, if a perpetrator loses their job or experiences a reduction in family income and the survivor becomes the sole income provider, the perpetrator is more likely to abuse them in an effort to regain control and power.20

Abuse in the COVID-19 Context

Homicides and physical violence have been key focuses for research, but other forms of abuse also require research and clinical attention, particularly those that increased during the COVID-19 pandemic. It is important to understand and recognize the signs of nonphysical abuse, as well as its escalation linked to poverty, isolation, and eventual physical violence,14 all of which were heightened duringthe COVID-19 pandemic.1,15 Most of the research on IPV duringthe COVID-19 pandemic focuses on the physical violence enacted on survivors (e.g., hitting, choking, pushing, biting, throwing items at).

The complexities of the abusive tactics leading to physical abuse are underresearched,16,18 such as psychological abuse (e.g., manipulation, gaslighting, control, shaming family and friends); verbal abuse (e.g., name calling, attacking personality traits or physical appearances); economic abuse (e.g., limiting spending, destroying credit score); technological abuse (e.g., GPS [Global Positioning System] tracking, ghostwriting, social media stalking); sexual abuse (e.g., forced penetration or pregnancies, coercion, harassment, revoked access to birth control); and abuse related to the survivor's immigration status (e.g., threatening to do something that leads to their deportation).10,12-14,16-18 Because ofthe unprecedented conditions created by the COVID-19 pandemic, public health professionals, frontline clinicians, and abuse hotline workers may benefit from learning about understudied forms of physical and psychological abuse.

Box 1 identifies common types of IPV that may occur with explanations of how they may manifest during or after the COVID-19 pandemic. In accordance with the literature referenced in Box 1, 3 main themes emerged: (1) weaponizing COVID-19 using technological abuse; (2) using being sick with COVID-19 to cause isolation, psychological and emotional abuse, and coercion and threats; and (3) neglect or nonphysical sexual abuse from a lack of access to crucial medical care or medication. We explore these themes.

Weaponizing COVID-19 and Technological Abuse

Because COVID-19 is highly contagious, fear of contracting the disease has been used to manipulate and control family members: the lack of freedom owing to this fear can be weaponized.3 Many community mental health clinics and crisis centers transformed to a hybrid environment using Zoom or HIPAA (Health Insurance Portability and Accountability Act)-compliant video conference platforms.24 This new reliance on technology will likely persist because use of telemedicine by social services, mental health, and medical practices has brought unprecedented convenience to the providers; however, telemedicine has also heightened concerns and risks for survivors of domestic violence.19 Health professionals need to be aware that clients who have traditionally accessed in-person services may not have confidential access to technological devices or they may lack privacy in the home to fully access services online.15

Health care trainees should be trained on how to provide telehealth to IPV survivors. This can be demonstrated through mock telehealth sessions in medical and psychology graduate courses supported by the American Medical Association and the American Psychological Association, in which the focus is on telepsychology-related knowledge, technical support, and safety plans for harm reduction.25,26

Abuse Related to Contracting COVID-19

COVID-19-related manipulation may extend beyond threats and be compounded in restrictive living situations, at times increasing transmission of the virus. The perpetrator may use COVID-19 as an additional reason to keep survivors in isolation by instilling fear or threatening to leave them if they become ill.3,4

The line between physical and nonphysical violence may become blurred when the result is contracting or exacerbating a potentially deadly disease. There may be insufficient physical and emotional barriers when a cohabitant falls ill; this is particularly true in homes with a partner who is overly controlling and demanding. Ways that nonphysical violence can be perpetrated during a pandemic should be incorporated into trainings and definitions of abuse. This form or violence can be as simple as sneezing, touching, or refusing to isolate to a separate area of the home when contagious.13 Conversely, the abused partner may be the one with COVID-19 but be expected to fulfill household duties despite being sick. This may prolong or intensify the severity of the illness.

Preventing Access to Crucial Medication

When individuals are placed under quarantine, access to essential needs may become problematic, particularly for individuals who identify as immunocompromised, disabled, or dependent (e.g., children, elders) or lack resources.

Violence may result from new forms of neglect owing to contracting COVID-19. Even if the neglect is focused on an adult who is immunocompromised or disabled, there can still be traumatic, long-lasting effects for children who witness such abuse.10

Sexual Abuse

Restricting access to medications can be used as a form of violence, either through neglect of dependents or through direct intent to produce an unwanted pregnancy. Reduced or lack of access to contraceptives during a pandemic is a sexual violence-related risk factor that can result in forced, unwanted pregnancies, also referred to as "reproductive coercion."12,16

On June 24, 2022, the US Supreme Court repealed Roe v. Wade, reversing the nearly 50-year-old constitutional right to abortion access. In numerous states, the effect of Dobbs v. Jackson Women's Health Organization has restricted or eliminated access to abortions, contraceptives, birth control, and other forms of reproductive health services, which may further burden women in households with violent partners,21,22 particularly those in which economic resources are limited (e.g., cannot travel to states without abortion bans, cannot stockpile abortion, or "morning after," pills). Health care trainees, such as medical students, physicians, and nursing students, who work with female populations should be made aware of how to remain informed of local and state sexual and reproductive health regulations. For example, the New York Times tracks abortion laws in each state and provides online updates, including whether abortion is legal, banned partially or fully, or is permitted in some cases (e.g., rape, incest, gestational age).27

BARRIERS TO REPORTING

Survivors of domestic violence often do not seek help from police for various reasons, including that the police have historically intervened in domestic disturbances with indifference, disrespect, and hostility.7,18,28 Survivors may fear that treatment by law enforcement will be disproportionately worse for their perpetrators than their abusive behavior merits29 or that their children may be placed in their perpetrator's custody30 or social services. Long-standing distrust of law enforcement serves to compromise self-reports and anonymous reports of abuse;18 distrust has been exacerbated by public sociopolitical unrest associated with police killings of unarmed Black men and women.

Some youths involved in incidents of abuse feel that they are unacknowledged and overlooked when law enforcement gathers information and conducts interviews for their reports.31 For women of color, distrust of law enforcement and language barriers founded on generations of discriminatory practices serves as a significant barrier when seeking refuge from violence.14,15 Police violence has been disproportionately high in Black communities, and tensions elevate when law enforcement treats racial/ethnic minority citizens with increased surveillance and excessive or unwarranted violence.6,7

ENVISIONING A SOLUTION AFTER THE PANDEMIC

Taken together, these processes support the need for systemic interventions to better support individuals experiencing, or at risk for, IPV. Perpetrators should be required to attend domestic violence courses, also referred to as "battered intervention programs," and parenting classes (if a parent) whenever a police report is filed on domestic violence. One example of a successful intervention focused on perpetrators is called the Duluth model, which is designed to change behavior by teaching perpetrators to recognize past and present abuse patterns related to control and power as well as by having them claim responsibility for their actions.32

The CDC discusses programmatic efforts that may change societal norms and thereby reduce violence, such as public education campaigns and bystander programs.33,34 The US Department of Justice's Office of Community Oriented Policing Services is an example of a successful intervention that focuses on victims and perpetrators. The office promotes community policing development programs by providing federal grants to support training law enforcement in crisis intervention, de-escalation, tolerance, diversity, and antibias.35

As US society collectively grapples with the "new normal" of a world of uncertain future COVID-19 strains or alternate threats to global health,11 it is essential for researchers and practitioners to consider how to best support those living with violence. In preparing future health care providers, training in best practices is essential. The following are recommendations for individual, community, and governmental policies and training.

Telehealth and Individualized Care

The increase in services provided via telehealth makes it especially important to assess whether the client is in a safe and private environment before initiating a therapeutic or medical session, including inquiring about any form of abuse. Questions regarding the extent of the client's privacy should be incorporated into existing screening and intake assessments.19 If clients lack privacy, health care professionals should come up with potential solutions and advocate alternative arrangements that maximize safety during therapeutic encounters.

Nonphysical violence may also result in altered coping mechanisms, such as increased substance abuse, depression, anxiety, and loss of self-confidence.1,15 If a survivor indicates they are suffering from nonphysical abuse, mental health professionals can help to marshal a support network and generate ideas about how to safely receive support.24 Traditional health service professional training programs must incorporate coursework and supervised clinical experience in the provision of resources and safety protocols as well as in their coverage of ethical, legal, and clinical issues of telehealth service provision.25,26

Individualized care must be conceptualized broadly and flexibly, integrating various levels of support. For example, survivors may liaison with crisis advocates (e.g., people trained in safety planning to support those fleeing and those who are unable to flee violent situations) and access crisis hotlines and text lines and virtual support groups.12 Clinicians must be trained to offer support through safety planning, providing essential support, and advocating medical, educational, or social services. Through the Clinic to End Tech Abuse, funding is available to increase survivors' access to private technological devicesand help them regain or achieve technology freedom.36

Even if domestic abuse survivors are able to leave their abusers, they may remain at heightened risk for violence. Most murders of IPV victims occur when the survivor makes the choice to leave or shortly after leaving their abusive home.28,30 During the stayat-home period, the majority of states made provisions for firearms retailers to remain open in some capacity, contributing to an all-time national record in firearm background checks-an indicator that firearm sales substantially increased during the COVID-19 pandemic.3,20 Although stay-at-home mandates have come to an end, there will likely be future pandemics and disasters, and health care clinicians and trainees need to be prepared for when that time comes.11

Acknowledging the reality that people experiencing abuse might not or cannot leave the abusive conditions, proactive strategies include intricate safety planning that accounts for real-time updates of shelter availability, court closures, police practices (e.g., nonbookings or no bail required for certain offenses), and travel restrictions related to future disasters and pandemics.31 Health care trainees should be knowledgeable about these conditions or help their clients increase awareness of and access to these resources. Furthermore, care forthose who are unable to flee abuse should be tailored to the individual's circumstances, for example, an appropriate crisis hotline, identifying trusted friends or family on whom they can rely during an emergency (accounting for COVID-19 mandates, children, and pets), and finding areas of the home that can be private and safe retreats. Oftentimes, COVID-19 policies caused many people to be at home simultaneously working or being in online school, so considerations for privacy during virtual sessions should be made for all who are at risk for exposure to violence.

Community Care

As communities reacclimate to how its citizens connect with one another because of COVID-19, teaching health care workers and the public how to identify abuse is essential. There is a need to be a good neighbor, one who can recognize when someone is in harm's way and take necessary action (e.g., reporting to authorities, passing along a phone number for crisis services, acting in an active bystander intervention).18 Bystander intervention is valuable, as neighbors have the opportunity to intervene.

Some communities have Neighborhood Watch, a program that enables neighbors to become trained and empowered to take action in their neighborhood. Although the program is not IPV specific, with appropriate training, neighbors can intervene and support each other's safety. However, such intervention needs to be culturally and contextually appropriate and take into consideration issues related to mistrust of law enforcement and social services (as discussed earlier). In some communities, enlisting the support of relatives, friends, or clergy may be possible.

Training for active bystander intervention can be seamlessly embedded in community programming.37 Increasing community awareness regarding IPV would remove the invisible nature ofthe abuse and prepare the community for how to help when future pandemics or disasters occur. Social service centers can provide free virtual training on bystander intervention, including de-escalation tactics, the process of reporting suspected abuse, hotlines for those who display signs of abuse, and available local supportive services for those experiencing abuse. These are all practical skills for health care clinicians.

Policy Recommendations

Communities need to assess how resources are distributed locally, statewide, and nationally to devote more services to domestic crises that occur with pandemics.

At the local level, there is a team of specially trained police officers and a survivor advocate called the Domestic Abuse Response Team in Los Angeles, California. They continued to respond to calls regarding domestic violence during the pandemic. The police assessed whether arrests were to be made, and the survivor advocate provided additional resources to the survivor, if needed.23 However, police officers are not medically trained clinicians, and the survivor may not use the resources provided or consent to further services recommended by the survivor advocate. In response to this reality, it could prove useful to expand the Domestic Abuse Response Team model to be nationally adopted and to include a team of trained professionals that accompany police when a domestic violence call comes in. This multidisciplinary team could include a conflict resolution specialist, crisis interventionist, survivor advocator, clinician, and medical doctor.

At the state level, a successful example is Right Care, a program developed in 2017 that connected police officers with trained social workers and paramedics to work together in responding to 911 calls. The program was created to combat overcrowding in jails in South Dallas, Texas; as a result, arrests in the city dropped.38 Trained mental health clinicians and medical professionals must assess survivors and perpetrators properly to ensure their safety and recovery, especially when the perpetrators are not incarcerated for offenses or have not physically abused the survivor yet. Health care professionals who work with victims and perpetrators of domestic violence should be made aware ofthis collaborative model as a potential career option.

Mandatory training on survivor and perpetrator interventions and the indicators of IPV, including nonphysical violence, should be incorporated into curricula at medical schools for physicians, physician assistants, and nurse practitioners and at public health schools for emergency department professionals, social workers, and teachers. Such training offers the opportunity for mental health and medical providers to spot early abuse signs and to help survivors and perpetrators try to live safely together, as moving out ofthe home may not be a viable option. These interventions should be culturally congruent, incorporate the US history of structural racism, and include psychoeducation on the cycle of trauma and abuse.15

As mentioned previously, many types of nonphysical abuse increased because of COVID-19 (Box 1), and many new episodes appeared because of the hardships initiated or escalated as a result of the pandemic.

However, early interventions focused on behavioral change and psychoeducation could prevent abuse. For example, battered intervention programs are evidence-based interventions built on cognitive behavioral therapy, acceptance commitment therapy, and motivational interviewing and can be offered to perpetrators voluntarily or court ordered. Battered intervention programs differ across states, but all prioritize victim safety and are based on reversing male toxicity and control, psychoeducation, and behavioral modification. The program can be offered as individual, group, or marital therapy.32

At the national level, the Coronavirus Aid, Relief, and Economic Security Act (2020) provided significant economic relief and sanctions for preserving housing access; it also made services available through the Family Violence Prevention and Services Act (1984). These funds provided a host of prevention and intervention resources related to domestic violence, including housing and emergency shelter, outreach, education, and case management. These services have been invaluable in providing much needed support and assistance for survivors.39

The US Department of Health and Human Services reported that IPV occurs on college campuses and that about

20% of women experience some form of undesired sexual activity. Title IX of the Education Amendments of 1972 legislation enacted federal law that has been extended to prohibit sexual violence and harassment at federally funded colleges. Title IX offices provide services to complainants and victims and respondents and perpetrators but also mandated education to help prevent sexual violence and harassment on college campuses.40 Being trained in the prevention of sexual violence as young adults may carry forward throughout the lifetime.

CONCLUSIONS

The COVID-19 pandemic increased the likelihood that survivors of domestic violence remain in isolation with their perpetrators. The devastating impact was even greater for marginalized communities, especially for people of color. Clinicians and trainees must understand that violence in the home is a complex issue, one that may begin without physical abuse yet still qualifies as IPV. It may escalate to deadly proportions. Consequently, change must be enacted at individual, community, and national levels to accommodate the additional burden of the COVID-19 pandemic and to prepare for future disasters and pandemics. Furthermore, training in working with survivors of IPV must be prioritized for future and current public health professionals.

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A. M. Smith-Clapham, J. E. Childs, and M. CooleyStrickland wrote and edited the initial draft of the essay. A. M. Smith-Clapham, J. E. Childs, and G. E. Wyatt conceptualized the essay. A. M. SmithClapham, M. Cooley-Strickland, J. HamptonAnderson, D. M. Novacek, and J.V. Pemberton wrote, edited, and revised the second draft. A. M. Smith-Clapham, M. Cooley-Strickland, and G. E. Wyatt provided final revisions.

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Using Low-Cost Sensor Networks: Considerations to Help Reveal Neighborhood-Level Exposure Disparities

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ABSTRACT (ENGLISH)

The growing availability of low-cost sensors can potentially democratize the process for reducing disparities in exposures to harmful air pollution. When used collaboratively with government agencies and researchers, sensors deployed by community organizations can build trust in environmental decision-making.1 Low-cost continuous sensors can complement regulatory monitoring networks required by the Clean Air Act, which have high confidence but relatively low geographic coverage. Sensors are often portable or even mobile and can prove particularly useful if they measure some of the same air pollutants as regulatory monitors.

Sensors deployed on a neighborhood scale can reveal spatial and temporal variations in air quality, as Esie et al. (p. 1765) show. Increased temporal resolution can identify episodes of poor air quality that exacerbate existing inequities in exposure or if those episodes, when compared with mean air quality levels, create new inequities. Increased temporal resolution can show when exacerbations happen and, in combination with higher spatial resolution, can then reveal the cause. Identifying the sources of the emissions provides communities and decision-makers with the information needed for action in addressing inequities. However, communities and government agencies must work together to agree on how to interpret and evaluate sensor data, especially in cases when it may not agree with regulatory monitors, to prevent friction and loss of trust.1

Sensors have a wide appeal and market availability, but the quality of data they generate must be considered. To help those using sensors as part of air monitoring, the US Environmental Protection Agency's (EPA's) Air Sensor Toolbox2 provides the latest science on sensor performance and operation, and the EPA is providing $20 million in grants to enhance community and local efforts in monitoring air quality, including in or near underserved communities.3 In addition, the Inflation Reduction Act4 contains provisions to deploy air monitoring in communities, including deploying sensors in low-income and disadvantaged communities.

FULL TEXT

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SELECTION OF DATES, TIMES, AND LOCATIONS IS CRITICAL

Even for low-cost sensors, air quality measurement campaigns can be resource intensive, and thus decisions often need to be made about where and when to take measurements. Esie et al. conducted measurements for July 2021 because July had historically shown higher fine particulate matter (diameter <|2.5 mm; PM2.5) levels. Although overall PM2.5 levels were below daily standards, there were relatively elevated PM2.5 measurements, predictably on July 4 and unexpectedly on July 23 because of a wildfire smoke incursion event. The latter event showed minimal variation across neighborhoods with different sociodemographic profiles. Summer months often show a high contribution from regional sulfate from power generation (although this contribution has fallen over time), and, as such, more local contributions may be masked. Looking at other months may have revealed more significant disparities across neighborhoods, perhaps because of greater proportional contributions from local industries or from urban transportation or differences in heating emissions. Recent trends show that in many regions of the country, including Chicago, relative peaks in PM2.5 now occur in the winter, and those peaks may be associated with more local emission sources.5 Other temporal events of concern would be short-term sources of emissions from industrial sources (such as shutdown/ startup malfunctions or maintenance), particularly ifthose sources are proximate to communities with environmental justice concerns. Temporary increases in emissions such asthese would be both isolated in time and space, in contrast to the two events in July.

For the purposes of understanding exposure disparities, focusing on spatial or temporal excursions from mean total PM2.5 levels may be more useful than looking at total PM2.5. Identifying a local "hot spot" that might contribute to disparities in exposure would entail subtracting citywide, regional, and national contributions until only the excess PM2.5 associated with local contributors remained. An approach has recently been proposed to remove regional background and provide a decomposition of PM2.5 air pollution into long-range, midrange, neighborhood, and near-source for all census tracts in the United States,6 and this approach may also remove autocorrelation in a more structural way rather than using spatial lags. Further removing longer-term temporal trends from these spatially decomposed PM2.5 levels would highlight temporal excursions that may also lead to additional disparities. In both cases, the analyses not only would identify when and where disparities occur but also could help to diagnose the emission sources that cause the disparities.

Siting of a network of low-cost sensors can be focused on diagnosing where and when inequities in exposure occur and on identifying the cause(s) of the inequities. The siting should be done with community input. Esie et al. used sensors located at bus stations, which are convenient locations and could capture near-road PM2.5 exposures. However, these locations might not be best for identifying PM2.5 exposures from industrial or other sources.

UNDERSTANDING DISPARITIES REQUIRES EQUITABLE NETWORKS

When properly sited, and with a dense-enough sensor network, it becomes possible to predict PM2.5 levels at other neighborhood locations. For example, a community may wish to identify places of neighborhood concern or places with sensitive populations. Inverse distance weighting (IDW) or cokriging approaches that incorporate additional information such as wind directions7 can provide spatially resolved predictions that are similar in quality to land use regressions or downscaled model predictions.8 However, it is not clear that the density or location of sensors at bus stops satisfies criteria for using IDW as employed by Esie et al., and thus statistical models that seek to identify the disparities in PM2.5 concentrations across different races using IDW may suffer from exposure misclassification. To respond to the concern of Esie et al. about temporally invariant covariates, it may be possible to use new land use regression methods9 that allow both spatial and temporal decomposition.

Esie et al. importantly note that crowdsourced sensor networks tend to be located in White, high socioeconomic status neighborhoods. If higherincome neighborhoods have more access to air quality sensors and more ability to respond to the information they generate, disparities in air pollution health outcomes can be exacerbated.1 This reveals a need for more consistent, government-sponsored networks, which could promote interoperability and equitable access. By allowing a cross-comparison of data gathered using disparate sensor networks, information could be compared and shared on a broader scale.

CONCLUSION

The Esie et al. study adds to evidence that disparities in exposure continue to exist in Chicago and that certain types of emission events can exacerbate those disparities. The types of emission events identified are difficult to regulate, and the study design is not able to identify harder-to-diagnose sources of air pollution excursions. A greater focus on the times and places that have substantially higher neighborhood air pollution levels would advance two goals: a greater ability to ascertain the sources of inequities and information that can empower communities working with government agencies to prevent those emission events and reduce exposures. Finally, low-cost sensors, with their affordability and ease of deployment, have the potential to collect data that can reveal air quality and exposure disparities, but the data will have the most impact in rectifying disparities when communities and government agencies agree, preferably in advance, on howto evaluate and interpret the data.

Sidebar

CORRESPONDENCE

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CONTRIBUTORS

Angle Shatas and Bryan Hubbell both contributed equally to the writing of this editorial.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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Changes in the Public Charge Rule and Health of Mothers and Infants Enrolled in New York State's Medicaid Program, 2014–2019

Wang, Scarlett Sijia, MS, MPH; Glied, Sherry, PhD; Babcock, Claudia, MPA; Chaudry, Ajay, PhD

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ABSTRACT (ENGLISH)

Objectives. To examine the effect of the January 2017 leak of the federal government's intent to broaden the public charge rule (making participation in some public programs a barrier to citizenship) on immigrant mothers and newborns in New York State. Methods. We used New York State Medicaid data (2014-2019) to measure the effects of the rule leak (January 2017) on Medicaid enrollment, health care utilization, and severe maternal morbidity among women whojoined Medicaid during their pregnancies and on the birth weight oftheir newborns. We repeated our analyses using simulated measures of citizenship status. Results. We observed an immediate statewide delay in prenatal Medicaid enrollment by immigrant mothers (odds ratio = 1.49). Using predicted citizenship, we observed significantly larger declines in birth weight (-56 grams) among infants of immigrant mothers. Conclusions. Leak of the public charge rule was associated with a significant delay in prenatal Medicaid enrollment among immigrant women and a significant decrease in birth weight among their newborns. Local public health officials should consider expanding health access and outreach programs to immigrant communities during times of pervasive antiimmigrant sentiment. (AmJ Public Health. 2022; 112(12):1747-1756. https://doi.org/10.2105/AJPH.2022.307066)

FULL TEXT

Headnote

Objectives. To examine the effect of the January 2017 leak of the federal government's intent to broaden the public charge rule (making participation in some public programs a barrier to citizenship) on immigrant mothers and newborns in New York State.

Methods. We used New York State Medicaid data (2014-2019) to measure the effects of the rule leak (January 2017) on Medicaid enrollment, health care utilization, and severe maternal morbidity among women whojoined Medicaid during their pregnancies and on the birth weight oftheir newborns. We repeated our analyses using simulated measures of citizenship status.

Results. We observed an immediate statewide delay in prenatal Medicaid enrollment by immigrant mothers (odds ratio = 1.49). Using predicted citizenship, we observed significantly larger declines in birth weight (-56 grams) among infants of immigrant mothers.

Conclusions. Leak of the public charge rule was associated with a significant delay in prenatal Medicaid enrollment among immigrant women and a significant decrease in birth weight among their newborns. Local public health officials should consider expanding health access and outreach programs to immigrant communities during times of pervasive antiimmigrant sentiment. (AmJ Public Health. 2022; 112(12):1747-1756. https://doi.org/10.2105/AJPH.2022.307066)

Since 1882, US immigration law has denied admission to people who are or are likely to become a public charge. The term public charge, however, was undefined until 1999, when regulatory guidance limited the definition to those who were primarily dependent on specific federal benefit programs for their income or requiring long-term institutionalized care.1,2

In 2017, the Trump administration indicated its intent to change the definition of public charge in a way that would constrain low-income immigrants' use of core public benefit programs essential to health and wellbeing. InJanuary 2017, a draft executive order from the federal government to broaden the existing rule was leaked and circulated widely. A proposed rule was published in October 2018.3 A final rule was issued in August 2019,4 but its implementation was the subject of several court challenges. The rule ultimately went into effect briefly on February 24, 2020, though full implementation was stayed by the courts and after January 20, 2021, by the Biden administration.5 On September 8, 2022, the Biden administration published a new set of rules that codifies the more generous pre-Trump era public charge guidance.6

When deemed a public charge, an individual is not eligible for lawful permanent resident (LPR) status, commonly known as holding a "green card," and will be denied entry or reentry to the United States. The rule does not directly affect other immigrants-those who already have LPR status, are naturalized US citizens, or are the citizen children of immigrants. In this article, we use the term "noncitizen" to refer to those without LPR status and the term "immigrant" to include all foreign-born persons.

The pre-2020 definition deemed immigrants a public charge when the use of cash assistance programs or government-funded institutionalized long-term care represented their primary source of economic support.2 The new rule would have expanded this list of benefits by incorporating several public benefit programs that are widely used by low-income families and individuals to help meet basic needs, such as the Supplemental Nutrition Assistance Program (SNAP), Medicaid, and housing assistance, and would regard any use of these benefits as grounds for deeming an individual a public charge. In addition, the revised rule creates stricter income and wealth tests. The effects could have been substantial, because the use of these additional benefits is so widespread. While over the period 1997 to 2017 fewer than 3% of US-born citizens participated in the programs that comprised the criteria under the long-standing definition, nearly half (43% to 52%) participated in at least one of the programs that would have made them subject to the new public charge criteria had they been immigrants.7,8 The proposed rule changes could have had far-reaching and direct effects on the composition, health, and economic stability of the targeted immigrant families. Because of confusion and fear of deportation or loss of future LPR status, "the chilling effect," they could have affected eligible immigrants who were not directly targeted by the rule but might nevertheless not enroll or renew public benefits for themselves or their (citizen) children. In addition, immigrants might not seek or might withdraw from public benefits that were not targeted by the rule, such as the Special Supplemental Nutrition Program for Women, Infants, and Children or Medicaid among pregnant women and children aged younger than 21 years.

Large-scale chilling effects caused by the new widened definition were reported broadly.9-14The Urban Institute found that 14.8% of adults in lowincome families with children reported avoiding Medicaid or the Children's Health Insurance Program in 2019.15 Research has also shown that potentially 2.1 million essential workers during the COVID-19 pandemic failed to enroll in Medicaid, and 1.3 million gave up SNAP because of concerns about the public charge rule.9

IMPORTANCE OF ACCESS TO HEALTH CARE

The impact of the public charge rule may be particularly consequential for the health of low-income pregnant immigrant women, who might delay Medicaid enrollment during pregnancy, which, in turn, could delay and reduce prenatal care utilization.12,16 Lack of proper prenatal care during pregnancy might lead to lower birth weight and an increased likelihood of preterm birth. Health conditions such as maternal depression that go undiagnosed and untreated have been found to also negatively affect children's health, food security, and developmental outcomes.17,18 Parental insurance coverage is associated with a greater likelihood that insured children have a usual source of health care and receive preventive services.19-21 Studies have also shown that sociopolitical stressors, such as immigration raids and President Trump's inauguration, themselves significantly increased rates of preterm births and low birth weight.22-24

In the United States, 1 in 4 children live with at least 1 immigrant parent.25 More than 10 million people live in immigrant families that receive 1 of the major public benefits that under newly proposed rules could be considered a "public charge."8 This includes millions of US-born children with noncitizen parents. New York State (NYS) has one of the nation's largest immigrant populations; at 4.4 million people they constitute more than 20% of the state's total population. The contrast between New York City (NYC) and the suburban or rural areas in New York State also provides a unique opportunity to examine the effect of the public charge rule leak in urban versus nonurban areas. Considering the importance of access to timely prenatal care for low-income immigrant women, the gaps in the literature, and the hostile environment that may be generated by antiimmigration policies and rhetoric, this study aimed to measure changes in Medicaid enrollment of pregnant low-income immigrant women as a result of the 2017-2020 public charge revisions.

METHODS

We used NYS Medicaid claims data for this analysis. The NYS Medicaid claims data include both fee-for-service claims and comprehensive managed care claims, which are of comparable quality.26 The database includes

Medicaid recipients' enrollment status, such as address history, demographic characteristics, and citizenship status, though the citizenship status variable is not available forthose who joined Medicaid via the Health and Benefits Exchange Program after 2014. The database also includes detailed information on Medicaid utilization, including date of service, diagnoses, and procedures.

Sample

We selected all infants born in NYS hospitals between September 2014 and December 2019. We then linked the infants to their mothers by using the Medicaid case number, infant's date of birth, and mother's hospital discharge date. On average, we identified more than 120 000 infants per year, and 89% were linked to their mothers (Appendix A, available as a supplement to the online version of this article at https:// ajph.org). Our main sample was mothers whojoined Medicaid during pregnancy (40%-48% of women who were pregnant each year) because NYS offers Medicaid to pregnant women at a relatively higher income threshold of $28 723 for a family of 1 regardless of immigration status.

Timing of the Public Charge Rule Impacts

We used January 2017 as the cutoff for the post period because the memo leaked duringthattime. We excluded pregnancies that had dates of birth between April and December 2016. Although January 2017 was the month of the inauguration and the leak of the memo, Trump announced his candidacy in June 2015 and gained popularity and large-scale media coverage from 2015 to 2016, so chilling effects may have already been triggered in this population before January 2017. We observed some evidence ofthe pre2017 chilling effect in our data (Figures 1 and 2). We provided a set of sensitivity analyses including April to December 2016 in Appendix B (available as a supplement to the online version of this article at https://ajph.org).

Citizenship

We established 2 citizenship measures. For most, but not all, Medicaid beneficiaries, citizenship status is recorded in the enrollment record. The percentage of those without recorded immigration status increased by year, with 2019 the highest at 30%.

We cannot rule out that the missingness is not at random to the exposure ofthe public charge rule. To address those not reporting statuses, we used a conditional probability method to estimate a continuous measure that represents an individual's probability of being foreign-born conditioning on that individual's age (aged 18 years or older vs younger than 18 years), sex (male vs female), race (White, Black, Asian, Hispanic, and other), and census tract in NYS. Studies have used the American Community Survey (ACS) to examine the effect ofthe public charge rule by citizenship status.11,13,14 We used data from the 2018 ACS Five-Year Estimate to construct a "sex by age by nativity and citizenship status" rate within each race/ethnicity group.

For instance, Person A is 20 years old, female, Hispanic, and living in a given census tract. To predict Person A's probability of being "foreign born," we use the estimate ofthe number of foreign-born people, and 18 years and older, female, and Hispanic living in that census tract as the numerator and the estimate ofthe total number of people who are 18 years and older, female, and Hispanic living in the given census tract as the denominator.

We verified the estimate using reported citizenship status. The estimate has a stronger predictive value outside NYC. For all reported noncitizens, the average predicted probability of being an immigrant in our model was 0.28 in NYC and 0.24 in the rest ofthe state; for all reported citizens, the average predicted probability of being an immigrant in our model was 0.15 in NYC and 0.04 in the rest of the state.

We included the predicted probability as a continuous variable ranging from 0 to 1 in all the regression models. In the time-series graphs only, we used a binary variable with 1 indicating a predicted probability between the third quartile and the maximum based on the distribution of known noncitizens (> 0.4 for NYC and >0.39 for the rest of the state) and 0 indicating a predicted probability between the minimum and the first quartile (< 0.13 for NYC and <0.02 for the rest of the state). We included a set of time-series graphs using the median (0.25 for NYC and 0.15 for the rest ofthe state) as the cutoff in Appendix C (available as a supplement to the online version of this article at https://ajph.org).

Outcomes

We evaluated delayed enrollment during pregnancy, prenatal care visits, low birth weight, and severe maternal morbidity (SMM). We used 2 measures of delayed Medicaid enrollment during pregnancy, after the end ofthe first trimester (< 6 months before birth), and after the end ofthe second trimester (< 3 months before birth). We evaluated whether mothers had any prenatal visits. Among those with at least 1 outpatient visit, we evaluated the change in the number of total visits and the days to the first outpatient visit since the imputed pregnancy date (280 days before the infant's date of birth). Low birth weight is a binary variable with 1 indicating 2500 grams or less. We used the SMM definition provided by the Centers for Disease Control and Prevention. We included qualifying diagnoses or procedures for SMM-related inpatient visits 1 year after birth.

Statistical Analysis

We used SAS version 9.4 (SAS Institute, Cary, NC)to perform all statistical analyses. We used a comparative interrupted time-series (ITS) model and a difference-in-difference (DID) design to test for the immediate effect of the public charge rule. We then adjusted for the mother's age, race, county, and infant's birth month to control for individual, geographical, and seasonal effects (adjusted ITS). Lastly, we evaluated the overall effect of the public charge rule using a traditional DID model, post versus pre and noncitizens versus citizens, adjusting for age, race, county, and infant's birth month. We used logistic regression for all binary outcomes and linear regression for the continuous outcomes. We included the model statements in Appendix D (available as a supplement to the online version of this article at https://ajph.org).

In both sets of models, we used individual-level data. In reported citizenship models, we used citizen women as the reference group; we excluded those in the unknown citizenship group. In the predicted citizenship models, we included individuals with both unknown and known citizenship; we used predicted probability for all individuals.

Sensitivity Analyses

We used 2 additional samples. The second sample included only the oldest child ofthe family (42%-44% each year) to account for the increased familiarity and comfort level with the Medicaid program (or beliefthat public charge status was already a given) at subsequent births. The third sample combined mothers who joined Medicaid before pregnancy with those whojoined Medicaid during pregnancy (Appendix E, available asa supplement to the onlineversion ofthis article at https://ajph.org).

We also looked at the immediate and overall effects of all the outcomes among Hispanics, Asians, and unknown racial groups (Appendix F, available as a supplement to the online version of this article at https://ajph.org).

RESULTS

Table 1 shows the demographic and outcome distributions by reported citizenship status. Reported noncitizens and citizens were similar in age. Noncitizens were more likely to report Hispanic or Asian race/ethnicity.

Delayed Enrollment

We observed both immediate and overall effects of the public charge rule on delayed Medicaid enrollment (Table 2). The adjusted ITS model results showed increased delayed enrollment immediately after January 1,201 7, in NYS using both measures of citizenship. In NYS, delayed enrollment (< 6 months) increased (odds ratio [OR] = 1.49; 95% confidence interval [CI] = 1.26,1.77) comparing noncitizens to citizens in the immediate post-public charge period.

The overall effect (DID) in delayed enrollment (< 6 months) in NYS had an OR of 1.16 (95% CI 5 1.09,1.23). As the predicted probability of being an immigrant increased from 0 to 1, immediate delayed enrollment (< 6 months) increased (OR 5 1.89; 95% CI 5 1.33, 2.69), while overall the odds of delayed enrollment increased (OR 5 1.43; 95% CI 5 1.27,1.61). The large increase is driven bythe upstate NewYorkand Long Island (non-NYC) area. In NYC, delayed enrollment (< 6 months) comparing noncitizens to citizens in the post-public charge period was OR 5 1.36 (95% CI 5 1.09,1.70) forthe immediate delay and OR 5 1.07 (95% CI 5 0.99,1.16)forthe overall delay, while in non-NYC areas, it was OR 5 1.94 (95% CI 5 1.34,2.82)forthe immediate delay and OR 5 1.53 (95% CI 5 1.34, 1.75)forthe overall delay.

As the predicted probability of being an immigrant increased from 0 to 1, the OR of immediate delayed enrollment (< 6 months) in NYC was positive, but not statistically significant (OR 5 1.44; 95% CI 5 0.88, 2.36), while overall delayed enrollment increased (OR 5 1.29; 95% CI 5 1.09,1.52). We observed significant immediate and overall delays using predicted citizenship (< 6 months) in non-NYC areas: immediate OR 5 2.54 (95% CI 5 1.43, 4.51); overall OR 5 1.37 (95% CI 5 1.11,1.68).

We observed a significant overall increase in extremely delayed Medicaid enrollment (< 3 months) during pregnancy outside NYC (OR = 1.63; 95% CI 5 1.35,1.96) using reported citizenship and OR 5 1.87 (95% CI = 1.41, 2.49) using predicted citizenship.

Prenatal Care Visits

The results showed a significant and overall decrease in the fraction of mothers who had prenatal visits in NYS (OR 5 0.85; 95% CI 5 0.75,0.96) using reported citizenship and OR 5 0.70 (95% CI 5 0.53, 0.93) using predicted citizenship.

Among those with prenatal care visits, we observed decreases in the number of visits and delays to the first visit both immediately and overall. The effect was driven by non-NYC areas: using reported citizenship, mothers immediately had 1.47 (95% CI 5 -2.55, -0.39) fewer prenatal visits and delayed 25.57 days (95% CI 5 12.67, 38.46), and 0.57 (95% CI 5 -0.97, -0.18) fewer visits and 18.96 (95% CI 5 14.24,23.68) days in the delay overall. Using predicted citizenship, compared with nonimmigrant mothers in non-NYC areas, immigrant mothers had 2.13 (95% CI 5 -3.80, -0.46) fewer prenatal visits and experienced 48.53 (95% CI 5 28.73, 68.34) days in the delay to the first prenatal visit immediately and 0.94 (95% CI 5-1.55, -0.34) visits and 26.71 (95% CI 5 19.55, 33.88) days overall.

Low Birth Weight

We observed significant overall decreases in birth weight in non-NYC areas: newborns of reported noncitizen mothers weighed 37.08 grams less (95% CI 5 -73.31 grams, -0.86 grams) than those of citizen mothers; newborns of predicted immigrant mothers weighted 91.42 grams less (95% CI 5 -145.82 grams, -37.01 grams). We did not observe significant changes in the prevalence of low birth weight using the cutoff of 2500 grams or less in the main analyses.

Severe Maternal Morbidity

Compared with reported citizens, the overall odds of SMM for noncitizens increased (OR 5 1.65; 95% CI 5 1.15, 2.36) in the post period. Using predicted citizenship, we observed significant decreases in SMM in NYC(OR 5 0.34; 95% CI 5 0.24,0.49), as well as in NYS as a whole (OR 5 0.6; 95% CI 5 0.45, 0.8). We did not observe significant immediate effects in SMM using either reported or predicted citizenship.

Sensitivity Analyses

Both the oldest child sample and the all-mothers sample showed significant and immediate delayed enrollment (< 6 months) and delays to the first prenatal visit (Appendix E). We observed significant and consistent overall effects of delayed enrollment (< 6 months) in the all-mothers sample.

We observed significant effects for both immediate and overall delayed enrollment (< 6 months) among Asians using predicted citizenship. We observed positive but not statistically significant results for immediate delayed enrollment among Hispanics using both measures of citizenship (Appendix F). Among those of unknown race, we observed significant statewide overall effects for both measures of delayed enrollment, the number of prenatal visits, days to the first visit, and SMM for outside NYC only (Appendix F).

DISCUSSION

We found that the public charge rule was associated with large and significant damage to the health of immigrant mothers and children in the month of the memo leak, 3 years before it went into effect. In a way, the early timing of our study is evidence of a broader chilling effect beyond the public charge rule- the longer-standing generalized fear among immigrants about seeking public supports given pervasive antiimmigrant sentiment and racial biases that were stoked by the Trump administration.

Among studies and reports that directly examined the effect ofthe public charge rule on health care, various timing and data sources have been used to define the post-public charge period. The set of reports from the Urban Institute looked at Internet surveys conducted in December 2018 to 2020.15'27-29 One study used ACS survey data that compared annual Medicaid and SNAP enrollment changes from 2016 to 2019.14 Other studies based on population surveys and provider surveys looked at effects in 2019.11'12 We found that 1 study examined changes from August 2016 to June 2019 using SNAP administrative program data, although the DID effect was estimated as of September 2018.30 Compared with these studies, our study used individual-level administrative data on Medicaid program use and estimated the direct and significant effect at the earliest timing, in January 2017.

We observed a statewide effect in delayed Medicaid enrollment. The magnitude of such delay is substantial. Among all noncitizen mothers who joined Medicaid during pregnancy, 48% joined in the second trimester or later in March 2016, compared with 57% in January 2017. Similarly, among mothers who lived in areas with higher percentages of noncitizens, 42% joined Medicaid in the 2nd trimester or later in March 2016 versus 49% in January 2017. While Medicaid receipt by pregnant immigrant women would not, underthe rule, be considered in a public charge determination,31 declines in Medicaid coverage could occur beyond those directly targeted by the rule.

Our outcomes for prenatal care are consistent with reports indicating that immigrant women were afraid to get prenatal care because of fear of the public charge rule.32 The Kaiser Family Foundation found that half of the health centers surveyed reported a decline in health care use by immigrant patients, especially immigrant pregnant women who were not enrolling in or were disenrolling from Medicaid out of fear of the consequences of being deemed a public charge.12

The literature has shown that immigrants can have different experiences of the system within the same state.33 We have seen evidence of this variability in our study. One such variation between NYC and the rest of the state is that NYC has done extensive outreach to the immigrant communities about seeking care and health services, partnering with dozens of communitybased organizations and the public hospital system,34 in addition to laws that NYS as a whole has put in place to support immigrants including those who are undocumented.35,36

For all outcome measures, we observed worse outcomes outside NYC areas. This may be, in part, because we were better able to predict citizenship outside NYC. Even using measured citizenship, however, we observed a larger (and statistically significant) reduction in the number of prenatal visits outside NYC. Among those with reported citizenship, the estimated delay in seeking prenatal care was about 18 days for noncitizen mothers, contributing to a significant reduction in the total number of prenatal visits. Together with the significant delay and reduction in prenatal care, the odds of SMM increased significantly; birth weight also decreased significantly, by about 37 grams in the post period. We did not observe significant effects of any of the mentioned results in NYC.

Strengths and Limitations

Some of the strengths ofthe study included the use of large-scale claims data at the individual level that allowed us to study the universe of low-income pregnant women on Medicaid and measure nuanced enrollment and health outcomes for both individual infants and mothers.

As a limitation, we had many unreported citizenships in the data, which could threaten the validity ofthe study by introducing selection bias. We addressed the limitation by estimating the effects using predicted citizenship. Because we only looked at NYS, generalizing the results to states with different Medicaid or immigration policies would be another limitation.

Public Health Implications

Our study demonstrated that the rule changes the Trump administration proposed had far-reaching chilling effects on the health of immigrant mothers and their (citizen) infants. We found larger effects in suburban and rural areas, perhaps because advocacy and community resources are less available in such areas. Local public health officials should consider expanding health access and outreach programs to immigrant communities duringtimes of pervasive antiimmigrant sentiment. /4JPU

Sidebar

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CONTRIBUTORS

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CONFLICTS OF INTEREST

Authors have no conflicts of interest to disclose.

HUMAN PARTICIPANT PROTECTION

The institutionalreview board at New York University has exempted the study (IRB-FY20181285).

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DETAILS

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Use of Law by US States During the COVID-19 Pandemic With Respect to People Who Were Undocumented

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ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To systematically identify and analyze US state-level legislation concerning people who were undocumented during the COVID-19 pandemic, from January 2020 through August 2021. Methods. Using standard public health law research methods, we searched Westlaw's online database between November 2021 and January 2022 to identify legislation addressing COVID-19 and people who were undocumented. We abstracted relevant information, analyzed the data, and identified primary themes for each bill and resolution. Results. Sixty-six bills and resolutions, from 13 states, met the inclusion criteria. Legislation addressed 5 primary themes: eligibility and access to health-related services (n = 16), health and personal information (n = 10), housing assistance (n = 13), job security and employment benefits (n = 14), and monetary assistance (n = 13). Conclusions. Approximately one quarter of state legislatures introduced bills or resolutions regarding people who were undocumented and COVID-19. State-level laws are an important tool to mitigate the disproportionate impact of public health emergencies on vulnerable groups. Public Health Implications. As states shift attention away from the exigencies of COVID-19, this research provides insight into how law might be used to protect those who are undocumented throughout the full cycle of future public health emergencies.

FULL TEXT

Headnote

Objectives. To systematically identify and analyze US state-level legislation concerning people who were undocumented during the COVID-19 pandemic, from January 2020 through August 2021.

Methods. Using standard public health law research methods, we searched Westlaw's online database between November 2021 and January 2022 to identify legislation addressing COVID-19 and people who were undocumented. We abstracted relevant information, analyzed the data, and identified primary themes for each bill and resolution.

Results. Sixty-six bills and resolutions, from 13 states, met the inclusion criteria. Legislation addressed 5 primary themes: eligibility and access to health-related services (n = 16), health and personal information (n = 10), housing assistance (n = 13), job security and employment benefits (n = 14), and monetary assistance (n = 13).

Conclusions. Approximately one quarter of state legislatures introduced bills or resolutions regarding people who were undocumented and COVID-19. State-level laws are an important tool to mitigate the disproportionate impact of public health emergencies on vulnerable groups.

Public Health Implications. As states shift attention away from the exigencies of COVID-19, this research provides insight into how law might be used to protect those who are undocumented throughout the full cycle of future public health emergencies. (Am J Public Health. 2022;112(12): 1757-1764. https://doi.org/10.2105/AJPH.2022.307090)

While the federal government has passed high-profile legislation to control the spread of COVID-19 and mitigate its economic impact-including the American Rescue Plan Act1; Coronavirus Aid, Relief, and Economic Security (CARES) Act2; and Families First Coronavirus Response Act3-US state governments have also played a major role in pandemic response. For example, governors have issued and refined states of emergency, stay-at-home orders, mask mandates, and quarantine guidance.4 States also took significant administrative action, such as expanding conditions that qualify for emergency Medicaid (i.e., coverage for treatment of emergency medical conditions).5 Legislatures in all 50 states and the District of Columbia have introduced a host of COVID-19-related bills tailored to their populations' needs.6 This frenzy of legislative activity provides insight about policymaker priorities and reveals the range of ways that states might use law to protect their most vulnerable populations during an infectious disease emergency.

The United States has experienced a higher COVID-19 death rate compared with other well-resourced and similarly sized countries,7 with a disproportionate share of deaths experienced by certain populations. For example, Black and Hispanic people in the United States were 2 times more likely than White people to die from COVID-19.8 The pandemic has had a disparate impact on people who were undocumented (i.e., immigrants residing in the United States without official government authorization), with these communities experiencing disproportionately high rates of COVID-19 morbidity and mortality.9 People who were undocumented were especially vulnerable to COVID-19, in part because of barriers accessing health care and exclusion from federal stimulus payments issued during the pandemic.10,11 More than 70% of the approximately 7 million undocumented workers in the United States are direct service workers who cannot work remotely, placing them at higher risk of COVID-19 exposure and infection.10,12 In addition, the COVID-19 pandemic has been associated with significant anti-immigrant sentiment, often directed at people who are undocumented.13,14 For example, some Republican lawmakers falsely tried to attribute COVID-19 surges in the South to migrants who crossed the southern border.15 Law can be an important tool to protect this vulnerable population, especially during a public health emergency like the COVID-19 pandemic.

This article presents a legal mapping study16 that systematically identified and analyzed US state-level legislative activity related to people who were undocumented duringthe COVID-19 pandemic, from January 1,2020, through August 31,2021. Proposed and enacted bills and resolutions were included, with accompanying analysis of their objectives and implications for future public health policy.

METHODS

Using standard public health law research methods,16 we identified proposed and enacted state-level legislation related to COVID-19 and people who were undocumented. The search was conducted using the Westlaw database between November 2021 and January 2022. We used standardized search terms to identify bills and resolutions from all 50 US states and Washington, DC, that were introduced between January 1,2020, and August 31,2021. The start date was chosen because the first confirmed COVID-19 case in the United States occurred in Washington State in January 2020.17 The end date was chosen because it allowed us to capture legislation proposed duringthe 18 months following March 2020-the month when the World Health Organization (WHO) declared a global pandemic and the United States declared a nationwide emergency.18,19 For purposes of our analysis, we recorded the status of each bill or resolution through February 28, 2022, to account for a 6-month window of legislative activity following the introduction of bills and resolutions within our designated timeframe.

Our final search string comprised 2 sets of standardized search terms: (1) terms related to COVID-19 and (2) terms related to people who were undocumented. Initial search terms were generated using the research team's a priori knowledge and preliminary online research to understand the language used to describe our topics of interest. Next, we reviewed examples of relevant bills and used an iterative process to identify additional applicable search terms. University law librarians were consulted to help format each term (e.g., with connectors) to ensure that the search returned the maximum number of relevant bills and resolutions.

A public health law expert (J. R.) with relevant subject matter expertise reviewed the final search string. The final search terms, which used Boolean terms and connectors, were (COVID! OR coronavirus OR "corona virus" OR SARS-CoV-2 OR SARS OR pandemic OR outbreak! OR epidemic OR "health emergenc!" OR "infectious disease" OR quarantin! OR isolat! OR "social distanc!" OR "personal protective equipment" OR PPE OR mask! OR "face covering!" OR ventilat!) AND (immigrant! OR immigrat! OR undocumented OR migrant! OR migrat! OR alien! OR "foreign born!" OR foreign-born! OR "foreign national!" OR "unauthorized person!" OR noncitizen! OR nonresident! OR refuge! OR asyl! OR deport! OR mexic! OR spanish! OR hispanic! OR latin! OR visa! OR "green card!" OR "resident card!" OR DACA OR DAPA OR citizenship OR "national origin").

Some ofthe undocumented-specific terms in the search string are derogatory (e.g., foreign-born, alien). This terminology does not reflect the views or the lexicon used by the authors. We included search terms with this language to maximize the number of relevant bills and resolutions captured.

A research team member (E. D.) conducted a preliminary screen of each bill or resolution that our search query yielded. The initial scan involved reviewing the search terms within each piece of legislative text to understand whether the bill or resolution met inclusion criteria (i.e., pertained to people who are undocumented in the context of COVID-19). A second research team member (L. R.) then reviewed the full text of each bill or resolution identified in the initial screening process to determine whether they should remain in the final data set. When disagreement arose regarding inclusion or exclusion of certain proposed legislation, 2 team members reviewed the text together, discussed any points of disagreement, and reached a determination by consensus.

Where there were multiple versions of a bill or resolution, we removed duplicates and retained the most recent version in the final data set. For instances in which there were crosslisted versions ofthe same bill or resolution with the same date, we retained the legislation from the state's higher chamber in the final data set. We only included proposed and enacted bills and resolutions in the final data set, and excluded other types of documents (e.g., legislative memos). We also excluded legislation if language pertaining to the research question was found solely in prefatory sections, such as the preamble or legislative intent and findings. For each bill or resolution, we abstracted information on jurisdiction, bill or resolution number, date of introduction, bill or resolution sponsor(s) and political party, status of the bill or resolution, primary theme addressed, and whether the bill or resolution had the potential to be beneficial, harmful, or neutral toward people who are undocumented.

We summarized information whenever possible with descriptive statistics. We repeatedly reviewed each bill and resolution to determine the primary topic or theme it addressed. This included multiple rounds of review and comparison of bill or resolution text and discussion among research team members. For bills and resolutions that potentially addressed more than 1 theme, we reviewed the relevant language and determined a "primary theme" based on the topic that was most frequently or prominently addressed. Thus, we categorized each bill or resolution into only 1 theme.

RESULTS

The search yielded 5344 pieces of proposed and enacted legislation. Sixty-six bills and resolutions satisfied our inclusion criteria and were included in the final data set (Table A, available as a supplement to the online version of this article at https://ajph.org). Included bills and resolutions came from 13 states and were introduced between April 2020 and June 2021 (Table A and Table 1). Of the 13 states where legislation was introduced, 12 had Democraticcontrolled legislatures and 1 had a split legislature (Table 1).

One resolution was adopted and 16 bills were passed (Table 1). Of the 66 bills and resolutions, 62 (94%) were potentially protective or beneficial toward people who were undocumented (e.g., expanding eligibility for stimulus payments) and 4 (6%) were neutral (e.g., creating a task force or allocating funds for an assessment of COVID-19 impact). Bills and resolutions were categorized into 5 themes:

1. eligibility and access to healthrelated services,
2. health and personal information,
3. housing assistance,
4. job security and employment benefits, and
5. monetary assistance (Table 2).

Eligibility and Access to Health-Related Services

Sixteen bills (24.2%) pertained to eligibility and access to health-related services. Of these, 4 (25%) became law. The most prevalent type of bill (7/16; 43.8%) within this theme proposed expansion of access to health care coverage and medical services duringthe pandemic for people who were undocumented. For example, the Illinois legislature enacted a bill that would temporarily expand coverage for treatment related to COVID-19 via the Illinois Department of Health for individuals who were not US citizens, including those who were undocumented (Illinois SB 2294 [2021]). Four bills would make undocumented individuals eligible for nonmedical COVID-19-specific services. For example, Virginia's governor approved a bill that would classify COVID-19-related testing, treatment, and vaccination as "emergency services" that are extended to certain individuals not lawfully admitted for permanent residence in the United States (Virginia HB 2124 [2021]). Two proposed bills from California had the goal of expanding food assistance to people regardless of immigration status (California AB 221 [2021], California SB 464 [2021]). The final 3 bills in this category sought to expand availability of mental health services (Oregon HB 2949

[2021]), appropriate funds for a study on service access (Washington SB 5091 [2021]), and create a task force (Washington HB 1340 [2021]).

Health and Personal Information

Nine bills and 1 resolution (15.2%) addressed health and personal information. Of these, 1 (10%) became law. Most of these bills (9/10; 90%) sought to prevent immigration authorities from accessing information related to contact tracing, vaccine status, testing, or other COVID-19 health data. The enacted bill, passed in New York, prevents immigration authority personnel from serving as contact tracers (New York SB 900 [2021]). Unsuccessful bills, such as 1 from Washington State, would broadly prohibit usage of COVID19-related health data for purposes of immigration or law enforcement (Washington HB 1127 [2021]).

Housing Assistance

Thirteen bills (19.7%) sought to extend housing assistance duringthe COVID-19 pandemic. Each bill included the goal of increasing access to rental assistance for people who were undocumented. Of these, 4 (30.8%) were passed into law. For example, the California legislature passed a bill that allowed all persons- regardless of immigration status-to apply for rental assistance, and it prevents landlords from reporting or threatening to report a tenant to immigration authorities (California AB 832 [2021]). Four bills also included utility assistance as a housing-related benefit for which people who were undocumented may be eligible. For example, the New York legislature enacted a bill that specifies that households-regardless of immigration status-are eligible for rental assistance, utility assistance, or both (New York AB 3006 [2021]).

Job Security and Employment Benefits

Twelve bills and 2 resolutions (21.2%) pertained to job security and employment-related benefits. Of these, 2 bills and 1 resolution (21.4%) were passed. Four bills sought to prevent employers from taking "retaliatory personnel action" against employees, including reporting or threatening to report immigration status. Four bills or resolutions had the goal of providing legal documentation to workers. For example, legislators in Massachusetts introduced a bill that would expand eligibility for state licensure (e.g., driver's license, identification card) to people who did not qualify for a social security number, and the bill specified that people would not be asked about citizenship or immigration status duringthe application process (Massachusetts SB 2289 [2021]). The other 3 documentationrelated bills and resolutions sought to expand undocumented workers' access to work permits (California AB 1510 [2021]), visas and green cards (New Jersey AR 196 [2020]), and residency status (Illinois SR 100 [2021]).

Two bills from California-1 proposed and 1 enacted-sought to provide grants to small businesses, including those owned and operated by undocumented individuals (California AB 151 [2021], California SB 151 [2021]). Two bills would provide benefits to people who became unemployed because of the COVID-19 pandemic. For example, the California legislature passed into law a bill that provided education and training grants for those who lost employment during the pandemic, and the law specifies that people who were undocumented were eligible for these grants (California AB 132 [2021]). The final bills in this category were related to protections for undocumented workers who contracted COVID-19 while on the job (Rhode Island HB5474 [2021]) and appropriating funds to conduct a study on frontline workers (Nevada SB 209 [2021]).

Monetary Assistance

Thirteen bills (19.7%) addressed the provision of monetary assistance during the pandemic. Of these, 5 (38.5%) were enacted into law. Eleven ofthe bills in this category sought to provide cash payments to individuals regardless of immigration status. For example, Washington State legislators passed into law a bill that provided stimulus payments to persons who were not eligible to receive federal economic impact payments because of their immigration status (Washington HB 1368 [2021]). The final 2 bills in this category would provide funds to cover COVID-19-related funeral expenses (California AB 868 [2021]) and offer grants for undocumented students (Washington SB 5451 [2021]).

DISCUSSION

Between January 2020 and August 2021, legislatures in 13 states introduced 66 bills and resolutions addressing people who were undocumented within the context ofthe COVID-19 pandemic. Although only 25.7% (17/66) ultimately became law, much can be learned from the legislation that was introduced. In particular, the 66 bills and resolutions demonstrate that state-level lawmakers were concerned about exclusion of people who were undocumented from the federal response to COVID-19 as well as the unique challenges faced by this population that may have been exacerbated by the pandemic.

Given the rise in anti-immigrant sentiment associated with the COVID-19 pandemic,13,14 we considered whether legislation introduced at the state level would likely protect or harm people who were undocumented. Ofthe 66 bills and resolutions in our final data set, the vast majority (62/66; 94%) sought to protect or benefit this group. The remaining 4 bills and resolutions were neutral (e.g., creation of a task force). Given the uniquely vulnerable position of people who are undocumented10'11-and the fact that COVID-19 exacerbated many challenges this group was already facing12-it is not surprising that bills introduced during the pandemic generally sought to benefit this population. Moreover, these laws suggest a recognition that protecting the health of undocumented individuals was essential for combatting COVID-19 and ensuring economic recovery, thus benefiting the larger community.22

Our findings suggest that state-level lawmakers in some Democraticcontrolled or split legislatures sought to fill perceived gaps in the federal pandemic response relative to those who were undocumented. Most notably, people who were undocumented were not eligible to receive the Economic Impact Payments (also known as "stimulus checks") that were distributed by the federal government via the American Rescue Plan.23 Some state legislatures sought to remedy this by introducing bills that would provide cash assistance to people regardless of their immigration status (e.g., California SB 86 [2021], NewJersey SB 2329 [2020], Washington HB 1368 [2021]). People who were undocumented were also excluded from temporarily expanded access to certain medical services during federally declared states of emergency. To address this, some state legislatures introduced bills that explicitly expanded health services (e.g., access to COVID-19 treatment and health plans' essential health benefits) during declared emergency periods for people who were undocumented (e.g., Illinois SB 2294 [2021], NewYorkSB 2549 [2021]).

State lawmakers were also sensitive to the unique circumstances potentially exacerbated by the pandemic forthose who were undocumented. The most prominent example concerns bills that sought to prevent access to personal health information (e.g., contact tracing, vaccine status) by immigration authorities (e.g., Illinois HB 3120 [2021], Nevada AB 260 [2021], New York SB 900 [2021]). In addition to accounting for vulnerability among people who were undocumented, these bills demonstrate a recognition for the overriding importance of having complete and accurate health data to combat the pandemic.24

Several bills sought to address the especially vulnerable employment situation of undocumented laborers during COVID-19. For example, many direct services workers, who shouldered some ofthe highest-riskjobs during the pandemic, were individuals who were undocumented.10 In recognition of this, some state legislatures sought to extend traditional forms of job protection and employment benefits- typically only available to US citizens and immigrants with documentation- to this group (e.g., Rhode Island HB 5474 [2021], Washington SB 5438 [2021]). In addition, some state legislatures introduced bills that included immigration status as a prohibited form of "retaliatory personnel action" to prevent employers from taking advantage of workers by threatening to report their undocumented status (e.g., Minnesota SF 1518 [2021], New Jersey SB 3827 [2021]).

Limitations

This research should be considered in light of several limitations. First, because we sought to provide a comprehensive exploration of legislative responses, our research did not capture other important state-level actions, such as executive orders or regulations. Second, our research scope did not include situating our findings within the context of legal responses to undocumented individuals during previous public health emergencies; however, this is a critical next step for future research.

Third, bills or resolutions may have been excluded if their text did not contain our search terms. To minimize the risk of this occurring, we created a comprehensive search string through an iterative process involving a literature review, extensive testing of the search string in Westlaw, and an expert review of the terminology. Fourth, although the research scope was to identify bills and resolutions that explicitly considered individuals who were undocumented within the context of the COVID-19 pandemic, we recognize that other proposed legislation may have had an impact on this population or had unintended consequences, even if it did not clearly focus on those who were undocumented.

Fifth, we recognize that analyzing the broader political context and implementation of passed legislation is critical for understanding the impact on undocumented individuals. However, this is outside the scope of our research, which sought to identify the introduction and passage of relevant bills and resolutions. Finally, relevant bills and resolutions could have been missed because they were introduced outside of our study's date range. However, given the trajectory of the pandemic, a representative sample of relevant legislation was likely introduced during our designated timeframe, which spans the prevaccine period, encompasses the duration of declared states of emergency, and captures the 18 months following WHO's March 2020 declaration of a global pandemic.

Public Health Implications

In response to the deadliest pandemic in US history, approximately one quarter of all state legislatures introduced bills or resolutions that addressed people who were undocumented within the context of COVID-19. Findings reveal how state-level legislators contemplated using the law to address the pandemic's disproportionate impact on an already highly vulnerable group. As states shift their attention from the exigencies of COVID-19, this research provides insight into how law might be used to protect those who are undocumented during the preparedness, response, and recovery stages of future public health emergencies. >4JPH

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CONTRIBUTORS

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CONFLICTS OF INTEREST

The authors have no conflicts ofinterest to disclose.

HUMAN PARTICIPANT PROTECTION

This project did not require institutional review board protocol approval because human participants were not involved in the research.

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DETAILS

Subject:	Pandemics; Infectious diseases; Legislation; Public health; COVID-19; Datasets; Severe acute respiratory syndrome coronavirus 2; Internet; State legislatures; Emergencies; Job security; Law; Housing; States; Research methodology; Legislatures; Employment; Immigrants; Research methods; Epidemics; Noncitizens; Coronaviruses; Masks; Security; Bills; Personal information
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Living Alone and Suicide Risk in the United States, 2008–2019

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ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To evaluate the association between living alone and suicide and how it varies across sociodemographic characteristics. Methods. A nationally representative sample of adults from the 2008 American Community Survey (n 5 3 310 000) was followed through 2019 for mortality. Cox models estimated hazard ratios of suicide across living arrangements (living alone or with others) at the time of the survey. Total and sociodemographically stratified models compared hazards of suicide of people living alone to people living with others. Results. Annual suicide rates per 100 000 person-years were 23.0 among adults living alone and 13.2 among adults living with others. The age-, sex-, and race/ethnicity-adjusted hazard ratio of suicide for living alone was 1.75 (95% confidence interval = 1.64,1.87). Adjusted hazards of suicide associated with living alone varied across sociodemographic groups and were highest for adults with 4-year college degrees and annual incomes greater than $125 000 and lowest for Black individuals. Conclusions. Living alone is a risk marker for suicide with the strongest associations for adults with the highest levels of income and education. Because these associations were not controlled for psychiatric disorders, they should be interpreted as noncausal. (Am J Public Health. 2022;112(12):1774-1782. https://doi.org/10.2105/AJPH.2022.307080)

FULL TEXT

Headnote

Objectives. To evaluate the association between living alone and suicide and how it varies across sociodemographic characteristics.

Methods. A nationally representative sample of adults from the 2008 American Community Survey (n 5 3 310 000) was followed through 2019 for mortality. Cox models estimated hazard ratios of suicide across living arrangements (living alone or with others) at the time of the survey. Total and sociodemographically stratified models compared hazards of suicide of people living alone to people living with others.

Results. Annual suicide rates per 100 000 person-years were 23.0 among adults living alone and 13.2 among adults living with others. The age-, sex-, and race/ethnicity-adjusted hazard ratio of suicide for living alone was 1.75 (95% confidence interval = 1.64,1.87). Adjusted hazards of suicide associated with living alone varied across sociodemographic groups and were highest for adults with 4-year college degrees and annual incomes greater than $125 000 and lowest for Black individuals.

Conclusions. Living alone is a risk marker for suicide with the strongest associations for adults with the highest levels of income and education. Because these associations were not controlled for psychiatric disorders, they should be interpreted as noncausal. (Am J Public Health. 2022;112(12):1774-1782. https://doi.org/10.2105/AJPH.2022.307080)

Between 1960 and 2021,the percentage of single-person households in the United States increased from 13% to 28%.1 One-person households also account for more than a quarter of all households in many other high-income countries including France, England, Germany, Canada, Spain, and Japan.2 In light ofthe substantial number and rising proportion of adults who live alone, there is interest in understanding whether and to what extent living alone is associated with adverse health outcomes.

Several general population cohort studies have reported that living alone is connected with increased risk of all-cause mortality. In one review, the average increased risk of all-cause mortality for living alone (32%) was similar to the corresponding risks for social isolation (29%) and loneliness (26%).3 A recent meta-analysis reported that living alone is associated with increased risk of all-cause mortality for individuals aged younger than 65 years and may be more pronounced for males than females.4 Informed by social and psychological theories linking social isolation to suicide risk,5 several studies have specifically probed relationships between living alone and risk of suicide. Cohort studies of various high-risk populations including adults following nonfatal suicide attempts,6 people with disabilities attributable to mental disorders,7 adults with bipolar disorder,8 and people hospitalized for depression9 have all reported significant positive associations between living alone and suicide risk.

In general population samples, living alone has also been reported to be associated with increased risk of suicide. A German population-based cohort study reported that living alone was associated with increased risk of suicide (hazard ratio [HR] = 2.2) similar in magnitude to depressed mood (HR 5 2.0).10 A large Finnish general population cohort study further reported that living alone was associated with increased relative suicide mortality rates for men and women who were working age (30-64 years) and older (> 65 years).11 A recent UK Biobank study, however, found that living alone was associated with an increased risk of suicide in men but not women.12 A study of older Korean adults that controlled for a wide range of sociodemographic, health, and behavioral health factors similarly found that living alone was related to suicidal ideation for men but not women.13 Some14,15 but not all16 case-control studies have also reported significant associations between living alone and death by suicide.

Because of sample size limitations of previous research, little is known about whether and how the risk of suicide associated with living alone varies across sociodemographic groups beyond the apparent stronger association for men than women. The multiple pathways to living alone, which include relationship dissolution, death of a partner, and decisions not to enter into a cohabitation partnership, contribute to the heterogeneity of this population, and the mental health consequences of living alone could vary across this diverse group.

To better understand the association between living alone and suicide, we followed respondents to the 2008 American Community Survey (ACS) who were either living alone or with others for their risk of death by suicide. Stratified analyses assessed whether living alone varied as a risk marker for suicide across sociodemographic groups. Because the ACS does not include measures of common shared causes of living alone and suicide, such as mental health problems17,18 and substance misuse,19,20 we consider these associations as noncausal. Increasing our understanding of the strength and pattern of associations between living alone and suicide might inform risk assessment and future epidemiological research to evaluate the contribution of living alone to suicide risk.

METHODS

The study cohort was defined from the Mortality Disparities in American Communities21,22 sample that links 2008 ACS data to National Death Index underlying cause of death certificate records from 2008 to 2019 (n = 3 452 000) after exclusion of people for whom National Death Index linkage was not possible because social security numbers, names, and date of birth were unavailable. The complex sampling frame of the ACS was designed to approximate US population estimates by age, sex, race/ethnicity, and state of residence. Sampling weights were applied to account for variable sampling within demographic subgroups.

We analyzed respondents aged 18 years or older at the ACS interview, excluding those living in group quarters (n 5 142 000) such as college dormitories, residential treatment centers, skilled nursing facilities, group homes, military barracks, or correctional facilities.

Living Alone

The number of persons in a household was defined as everyone currently living or staying at a sampled address, except those who have been or will be living at the address for 2 months or less. The study cohort was partitioned into 2 groups on the basis of their reported living circumstances: (1) adults living alone or (2) adults living with others including family and nonfamily. The living-alone variable was measured once in 2008.

Sociodemographics and Functional Disabilities

Respondent characteristics were collected at the time of the ACS survey. Sociodemographic characteristics included age in years, sex, race/ethnicity, marital status, employment during past week, highest level of educational attainment, household annual income from all sources, urban (77%) or rural (23%) residence as defined by the Census,23 whether the respondent was a renter or owner, and residential stability based on how long the respondent had lived at their current residence (< 5 years, 5-10 years, >10 years).

Respondents were also asked about 6 areas of serious difficulties including hearing; vision; concentrating, remembering, or making decisions; walking or climbing stairs; dressing or bathing; and independent living. Respondents who indicated 1 or more of these difficulties were coded as having "any functional disability."

Outcome

National Death Index data indicated whether each Mortality Disparities in American Communities participant had died over the 11-year follow-up period from their ACS survey date. The outcome of primary interest was suicide (International Classification of Diseases and Related Health Problems, 10th Revision, Clinical Modification [ICD-10-CM; Second edition; Geneva, Switzerland: World Health Organization; 2004] codes X60-X84, Y87.0, U03)24 as the underlying cause of death.

Statistical Analysis

The analysis was performed in 3 stages. In the first stage, we used the x2 difference in proportion test to compare the sociodemographic characteristics of adults who lived alone versus with others. In the second stage, we determined suicide rates per 100 000 person-years with 95% confidence intervals (CIs). We also examined whether each sociodemographic characteristic moderated the strength of living alone as a risk marker for suicide. Because living alone25 and suicide26 both vary by age, sex, and race/ethnicity, we also treated these demographic characteristics as potential background confounders. Therefore, we used Cox proportional hazards models, adjusted for age, sex, and race/ethnicity, to estimate adjusted hazard ratios (AHRs) of suicide with living alone as the independent variable of interest and living with others as the reference group.

We measured event time continuously from the date of baseline survey administration until the date of suicide death, date of death from all causes other than suicide (censoring event), or December 31,2019, for those who did not die (censoring event), whichever came first. A survival plot was generated to display cumulative suicide risks for respondents living alone and with others. In separate models, we entered interaction terms (e.g., age group x living situation) to test whether the effects of living situation on hazards of suicide differed across levels ofthe sociodemographic variables. Separate analyses partitioned suicide deaths by means into poisoning (ICD-10-CM:

X60-X69), firearms (X72-X74), suffocation (X70), and other (X71, X75-X84, Y87.0, U03).

In a sensitivity analysis, we limited follow-up to 1 year from ACS completion. In a second sensitivity analysis, we broadened the definition of mortality outcome to include suicide (ICD-10-CM: X60-X84, Y87.0, U03) or injuries of undetermined intent (Y10-Y34, Y87.2). We considered rates and AHRs with nonoverlapping 95% CIs or P value less than .05 to significantly differ.

We conducted analyses in SAS version 9.4 (SAS Institute, Cary, NC). We weighted individual-level observations to account for nonequal probability of selection into ACS and to increase generalizability of the findings to the US adult population. Reporting followed the disclosure guidelines ofthe Census Bureau's Disclosure Review Board.

RESULTS

Approximately 14.5% ofthe sample, including 16.3% of women and 12.6% of men, lived alone at the time ofthe survey. As compared with people who lived with others, those who lived alone were significantly older and were more likely to be female, to have White or Black race/ethnicity, to have a low income, to reside in more urban rather than the most rural areas, to rent rather than own their residence, and to have a functional disability. However, people who lived alone were less likely than those who lived with others to be employed orto be currently married (Table 1).

Overall and Stratified Risk of Suicide

The overall annual rate of suicide per 100 000 person-years was nearly twice as high among people who lived alone compared with people living with others (23.0 vs 13.2; Table 2). Group differences in the cumulative risk of suicide during follow-up are displayed in Figure 1 (Wald X2 5 268.3; P <.001). After we controlled for the potentially confounding effects of age, sex, and race/ethnicity, living alone was also associated with nearly 2-fold increased hazards of suicide in the total sample (AHR = 1.75; 95% CI = 1.64, 1.87). Across most strata examined, adults who lived alone had significantly higher hazards of suicide than people who lived with others. The 2 strongest associations of living alone with suicide risk were among adults with a bachelor's degree or higher education (AHR = 2.25; 95% CI 5 1.97,2.56) and among adults with annual incomes of more than $125 000 (AHR 5 2.22; 95% CI 5 1.64, 3.00) while the 2 weakest corresponding associations were among non-Hispanic Black adults (AHR 5 0.92; 95% CI 5 0.63, 1.33) and among adults aged 18 to 39 years (AHR 5 1.23; 95% CI 5 1.07,1.41).

We observed significant variations in the adjusted hazards of suicide risk by age group, sex, race/ethnicity, education, income, and functional disability status (Table 2). Specifically, the association between living alone and suicide was significantly stronger for older (AHR 5 1.97; 95% CI 5 1.68, 2.31) than younger (AHR 5 1.23; 95% CI 5 1.07, 1.41) adults, men (AHR 5 1.82; 95% CI 5 1.69,1.97) than women (AHR 5 1.69; 95% CI 5 1.45,1.97), non-Hispanic White (AHR 5 1.79; 95% CI 5 1.67,1.93) than non-Hispanic Black (AHR 5 0.92; 95% CI 5 0.63,1.33) individuals, and people with a bachelor's degree or higher education (AHR 5 2.25; 95% CI 5 1.97, 2.56) than for those whose with less than a high-school education (AHR 5 1.77; 95% CI 5 1.46,2.16).

The association between living alone and suicide hazards was also stronger for people whose annual incomes exceeded $125 000 (AHR 5 2.22; 95% CI 5 1.64, 3.00) than for those with incomes below $40 000 (AHR 5 1.38; 95% CI 5 1.26,1.52). In addition, living alone was associated with significantly greater hazards of suicide for people living without functional disabilities (AHR 5 1.77; 95% CI 5 1.64,1.91) than for those living with these disabilities (AHR 5 1.49; 95% CI 5 1.31,1.71) as was the associations with owners (AHR 5 1.83; 95% CI 5 1.67, 2.00) than renters (AHR 5 1.56; 95% CI 5 1.40, 1.74). In sex-stratified analyses, there were several similarities between the associations among men and women (Tables A and B, available as supplements to the online version of this article at https://ajph.org). Among Hispanic adults, however, there was a significant association between living alone and suicide for men (AHR = 2.51; 95% CI 5 1.84, 3.43) but not for women (AHR 5 1.00; 95% CI = 0.36, 2.76).

In an analysis limited to 1-year follow-up after ACS completion, living alone was associated with increased hazards of suicide (AHR 5 1.68; 95% CI 5 1.39, 2.03; Table C, available as a supplement to the online version of this article at https://ajph.org) that were similar to the increase after the 11 -year follow-up (AHR 5 1.75; 95% CI 5 1.64,1. 87; Table 2).

Risk of Suicide by Different Means

The adjusted hazards of suicide of living alone compared with living with others were higher for suicide by poisoning (AHR 5 2.29; 95% CI 5 1.97, 2.68) than by firearms (AHR 5 1.69; 95% CI 5 1.54, 1.85), suffocation (AHR 5 1.52, 95% CI 5 1.29,1.78), or other means (AHR 5 1.75; 95% CI 5 1.64,1.88; Table D, available as a supplement to the online version of this article at https://ajph.org).

Risk of Undetermined Intent Deaths

Broadening the outcome to suicide or undetermined intent injury deaths yielded rates per 100 000 person-years of 25.3 for adults living alone and 14.7 for adults living with others with an AHR of 1.74 (95% CI 5 1.63,1.85; Table E, available as a supplement to the online version of this article at https://ajph.org). The pattern of results with this broader outcome resembled the pattern with suicide as the outcome (Table 2).

DISCUSSION

In this large, nationally representative cohort of US adults, living alone emerged as a significant risk marker for suicide. The strength of the association in the total adult population, which increased by 75% the hazards of suicide after controlling for age, sex, and race/ethnicity, was in line with previous epidemiological research from outside the United States.10-12 Living alone was significantly associated with suicide mortality separately for men and women. There was significant variation across sociodemographic groups in the adjusted strength of the associations between living alone and suicide with the 2 strongest associations occurring among adults with the highest levels of income and education.

Because the present study did not control for psychiatric morbidity or substance use, which are related to living alone and suicide, the associations should be interpreted as noncausal. However, previous research on this topic, which controlled for different aspects of psychiatric morbidity or substance use, suggests living alone contributes to suicide risk. In a general population study, which controlled for baseline depressed mood, alcohol intake, and several other factors, living alone was associated with increased suicide risk (HR = 2.19; 95% CI = 1.09, 4.37).10 A case-control study that matched on background demographic characteristics and controlled for psychiatric pathology further reported a significant association between living alone and suicide (odds ratio = 2.30; 95% CI 5 1.36, 5.75).14 Significant associations between living alone and suicide have also been reported in cohort studies restricted to individuals with psychiatric disorders7-9 or following nonfatal intentional poisonings.6

Comparing the background characteristics of adults who lived either alone or with others suggests that living alone is related to a set of socioeconomic and functional vulnerabilities. In relation to those living with others, people who lived alone were far more likely to have low (or negative) incomes. Consistent with previous research,27 people living by themselves were also significantly more likely than those living with others to have functional disabilities. The group who lived alone was also substantially older than those who cohabited. Not surprisingly, people living alone also included a disproportionately large number of individuals who had never married, were widowed, or were separated or divorced. These patterns likely reflect demographic, psychological, social, and economic factors involved in selection into different living arrangements over the adult lifespan.

Selection and direct causal mechanisms may contribute to the increased suicide risks of adults who live alone. Selection operates through factors that are causally related to living alone and suicide risk. As an example, suicide risk is elevated in the aftermath of divorce and separation,28 and these transitions also typically result in changes in living arrangements. Because living alone was associated with modest increased risk of suicide among separated or divorced adults in the present report, factors other than living alone such as stress related to separation or divorce29 or the association of common psychiatric disorders with separation and divorce30 might also contribute to the elevated risk of suicide among separated or divorced adults.28,31 The role of selection versus direct mechanisms related to loneliness and social isolation in suicide risk remains unknown. However, the high fraction of adults who live alone that are divorced or separated (34.9%) likely contributes to the high crude rate of suicide among people who live alone.

While beyond the scope of the current analysis, the experience of living alone may also increase suicide risk. In epidemiological research, living alone has been consistently related to a substantially elevated risk of loneliness,32 and loneliness has been related to suicidal behavior.33 Without a measure of loneliness in the present study, however, we were unable to assess the extent to which loneliness, social isolation, other psychological factors, less opportunity for rescue from a suicide attempt, or other factors related to living alone mediate the observed association of living alone with suicide risk. Although the current study is not intended to evaluate causal connections between living alone and suicide risk, the findings are consistent with a longtradition of sociological research on suicide that has emphasized social disengagement and loss of regulation, related to declining oversight and guidance from social ties.34 These concepts have their historical roots in Durkheim's insights more than a century ago on the stability of well-integrated groups with cohesive and durable social ties.35 In the current study, living alone was especially strongly related to suicide by poisoning. When poisoning events occur among people who live alone, there may be fewer opportunities for another individual to intercede with a potentially life-saving intervention such as activating the emergency medical services response system.

The current findings suggest that, as a marker of suicide risk, living alone operates differentially across age, sex, ethnic/racial, and educational groups in the United States and underscores opportunities for future research to probe the basis of these variations. For example, the reasons that living alone was not a risk marker for suicide for non-Hispanic Black adults, a group with comparatively low but increasing suicide risk, offers opportunities for research on culturally mediated protective mechanisms. It is possible that strong familial connections among non-Hispanic Black individuals helped to buffer the connection between living alone and suicide risk in this group.36,37

Limitations

This analysis had several limitations. First, living arrangements and the other baseline respondent characteristics, especially employment and income, may have changed during follow-up in ways that altered the overall association between living alone and suicide risk and affected its moderation by the sociodemographic characteristics. Although less is known about the stability of living arrangements among younger adults, approximately 81 % to 88% of surviving older adults who lived alone at baseline in 2 cohort studies were reported to continue to live alone at 5-year follow-up.38,39 In the ACS cohort, the 1-year and 11-year follow-up analyses of living alone and suicide risk yielded similar results.

Second, death certificate data may not accurately capture suicide, although suicide in death certificates has been found to have a sensitivity of 90% with information from hospital, autopsy, law enforcement, and medical examiner records as the criterion standard.40

Third, because the ACS does not measure important suicide risk factors such as mental health and substance use disorders,18 previous suicide attempts,41 or stressful life events42 that may also be related to living alone,17,19 the associations between living arrangements and suicide risk should be interpreted as noncausal.

Fourth, the cohort was either not sufficiently large or did not include measures of several other groups with increased rates of suicide including survivors of critical illnesses43 or individuals who identify as Native Americans44 or as lesbian, gay, bisexual, transgender, or queer or questioning.45 Finally, the group who lived with others includes a diverse set of living arrangements that may vary in their associations with suicide risk.46

Public Health Implications

The current findings have implications for clinical practice and future epidemiological research. In contrast to loneliness, which is difficult for primary care clinicians to identify in their patients,47 living alone is a readily discernible personal characteristic. In addition to traditional suicide risk factors, such as depression, substance use, and previous suicidal behavior, clinical consideration might also be given to living circumstances as a risk marker to consider in the context of known suicide risk factors.

The findings might also help inform future research aimed at understanding why the increase in suicide risk among people who live alone varies across sociodemographic characteristics. In this regard, longitudinal designs, which permit probing how transitions in housing arrangements covary with known risk factors for suicide, such as social isolation or depressed mood, might help to elucidate causal mechanisms that contribute to sociodemographic variation in the strength of associations between living alone and death by suicide. _4jPH

Sidebar

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CONFLICTS OF INTEREST

The authors report no conflicts of interest.

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The results were reviewed and approved for release by the US Census Bureau's Disclosure Review Board (DRB) to prevent disclosure of confidentialinformation: DRB releases CBDRB-FY22CES004-040, CBDRB-FY22-CES004-041, and CBDRB-FY22-CES004-043.

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DETAILS

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Promoting Evidence-Based Policy Solutions to the US Gun Violence Epidemic

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ABSTRACT (ENGLISH)

Firearm ownership and carriage in the United States remains an intensely personal, political, and social issue. In recent years, firearm ownership has remained at the forefront of our society's dialogue about safety, personal freedom, and the role of government in regulating firearm access. Although some national regulations govern access to firearms, specific restrictions and regulations on firearm ownership and carriage are largely delegated to the states. Because states have varying laws, there are many opportunities for natural experiments that explore the relationship of firearm regulations to firearm ownership and carriage behavior, injury, and mortality.

In public health, we are interested in the external, population-level interventions and policies that decrease death and disability from injury or disease. Oftentimes, behavior change as a result of an intervention or policy is the crucial step that prevents the negative health outcome. Consequently, RowhaniRahbar et al. (p. 1783 in this issue of AJPH) have sought to understand whether state-level differences in firearm policies affect firearm carriage behavior with a loaded handgun, with an understanding that such behavior may be linked to the outcomes of interest, in this case, injury and death by firearm. It is known that firearm access and carriage are two of the most significant risk factors for pediatric firearm injuries,1-5 intimate partner homicide,6-8 suicide,9-11 and homicide ofthose who cohabitate,12-14 although relatively less is known about the relationship of population-level firearm carriage to population-level death and injury by firearm.

By using a nationally representative sample survey of firearm-owning adults, Rowahani-Rahbar et al. analyzed loaded handgun carriage. They then described the groups of respondents by demographics and the reasons cited by the owner for carrying the weapon. They also demonstrated that firearm owners carried loaded weapons in significantly more permitless carry and shall issue states than states with may issue policies. These data, when extrapolated, demonstrate that about 16 million adults in the United States have carried a loaded handgun in the past 30 days, a significant increase over 2015 data, which estimated 9 million adults did so.

FULL TEXT

Firearm ownership and carriage in the United States remains an intensely personal, political, and social issue. In recent years, firearm ownership has remained at the forefront of our society's dialogue about safety, personal freedom, and the role of government in regulating firearm access. Although some national regulations govern access to firearms, specific restrictions and regulations on firearm ownership and carriage are largely delegated to the states. Because states have varying laws, there are many opportunities for natural experiments that explore the relationship of firearm regulations to firearm ownership and carriage behavior, injury, and mortality.

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This research is critical for state policymakers to review. These data show that specific state-level policies can decrease the carriage of loaded handguns among those state populations. Rowahani-Rahbar et al. have demonstrated that policies aligned with may issue firearm carriage permitting can decrease the number of child, adolescent, and intimate partner homicides; lawmakers who wish to decrease these deaths and whose constituents wish to decrease the population level of loaded gun carriage will be interested in these results. Furthermore, it is critical for those in the public health field to continue to perform high-quality and meaningful research on the implications of public policy on injury and public health. The federal and state governments should continue to provide funding mechanisms for such research to ensure that our policies are evidence driven and scientific in their approach to reducing injury and death. .4JPH

Sidebar

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CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

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DETAILS

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School District Prevention Policies and Risk of COVID-19 Among In-Person K–12 Educators, Wisconsin, 2021

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ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To assess the rate of COVID-19 among in-person K-12 educators and the rate's association with various COVID-19 prevention policies in school districts. Methods. We linked actively working, in-person K-12 educators in Wisconsin to COVID-19 cases with onset from September 2 to November 24, 2021. A mixed-effects Cox proportional hazards model, adjusted for pertinent person- and community-level confounders, compared the hazard rate of COVID-19 among educators working in districts with and without specific COVID-19 prevention policies. Results. In-person educators working in school districts that required masking for students and staff experienced 19% lower hazards of COVID-19 than did those in districts without any masking policy (hazard ratio = 0.81; 95% confidence interval = 0.72, 0.92). Reduced COVID-19 hazards were consistent and remained statistically significant when educators were stratified by elementary, middle, and high school environments. Conclusions. In Wisconsin's K-12 school districts, during the fall 2021 academic semester, a policy that required both students and staff to mask was associated with significantly reduced risk of COVID-19 among in-person educators across all grade levels.

FULL TEXT

Headnote

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Conclusions. In Wisconsin's K-12 school districts, during the fall 2021 academic semester, a policy that required both students and staff to mask was associated with significantly reduced risk of COVID-19 among in-person educators across all grade levels. (Am J Public Health. 2022;112(12):1791 -1799. https://doi.org/10.2105/AJPH.2022.307095)

Evidence supports the use of specific prevention efforts to reduce COVID-19 transmission in schools during periods of high community transmission. Policies related to masking,1-5 physical distancing,6,7 and quarantine after close contact (resulting from effective contact tracing)8 have been associated with reduced rates of COVID-19 transmission and outbreaks in school environments. In districts practicing a multifaceted combination ofthese policies, students and staff experience rates of COVID-19 lower than those of the surrounding communities.9,10

For the 2021 -2022 academic year, most K-12 students and educators in the United States returned to in-person school environments. In Wisconsin, the vast majority of regular K-12 school districts offered in-person learning for the 2021-2022 school year and were responsible for implementation of their own COVID-19 prevention policies. There was no standardized return-toschool directive from the state regarding implementation of such policies.11

The resulting heterogeneity in school district COVID-19 prevention policies throughout Wisconsin allowed us to build on a significant limitation of previous research in this field. Most school-related policy research was conducted during the previous 2020-2021 academic year-a time when almost all schools or districts had some form of prevention policy in place; as a result, it was challenging to directly compare the risk of COVID-19 associated with the presence or absence of certain policies.

In this analysis, our aim was to assess the rate of COVID-19 among in-person K-12 educators and the rate's association with a COVID-19 prevention policy's presence or absence. We chose to compare the rates of COVID-19 among inperson K-12 educators specifically because this is a group that is just as often involved in school-based COVID-19 transmission events as are students12,13 and is an occupational category with frequently overlooked workplace risk.14,15 We further stratified educators based on grade level taught to investigate the effect ofCOVID-19 prevention policies in elementary, middle, and high school settings.

METHODS

We completed our analysis using a cohort study design and a variety of data sources collected prospectively or at a single time point. We used multiple data sources available at both the Wisconsin state and the national levels to aggregate information related to our study sample (Wisconsin's in-person K-12 educators), outcome (COVID-19 cases), and exposure (school district COVID-19 prevention policies).

Educator Data

We created a roster of all licensed, actively working educators in Wisconsin during the 2020-2021 school year from multiple data sources maintained by the Wisconsin Department of Public Instruction. We filtered a data set consisting of all licensed educators in Wisconsin using a data set of educators actively employed during the 20202021 school year (the most recent academic year available).16 We used this merged data set to represent all licensed educators likely to be working during the 2021 -2022 school year.

Many categories of educators in Wisconsin can be licensed, including administrators, pupil service staff, and classroom teachers.16 For educators with multiple categories assigned, we categorized individuals based on their position with the highest full-time equivalent value. We also used these positions to categorize educators by grade level taught (elementary school, middle school or junior high school, and high school). We excluded educators assigned to roles not likely to be working in school settings (Figure 1).

COVID-19 Case Data

We used the Wisconsin Electronic Disease Surveillance System (WEDSS) to collect all confirmed and probable cases of COVID-19 reported fromJune 1 through November 30, 2021 throughout Wisconsin. We based criteria for confirmed and probable cases on definitions established by the Council for State and Territorial gists.17 We used symptom onset date to time stamp cases; if the reported symptom onset date was missing (e.g., for asymptomatic persons), we used the specimen sample collection date or the diagnosis date as a substitute.

September 1 was the first day of the academic year for Wisconsin K-12 schools in 2021. Therefore, the only COVID-19 cases we considered were those that were time stamped from September 2 through November 24, 2021 (or1 full day into the academic year through the day before Thanksgiving break). We used identifying information from the educator licensure database, including name and date of birth, to link Wisconsin educators to these timeeligible COVID-19 case records in WEDSS. For all cases, we adjusted time at risk during the study period based on the US Centers for Disease Control and Prevention (CDC) recommendation at the time against retesting or quarantine after close contact for persons with infections 90 or fewer days ago.18 Educators linked to a case of COVID-19 contributed no risk time during their respective 90-day window after infection.

School District Prevention Policy Data

There were 463 school districts in Wisconsin that were linked to our roster of actively working educators in 2021 - 2022 (Figure 1). Of these, 378 districts were considered "regular school districts" by the National Center for Education Statistics (NCES), which are defined as "locally governed agenc[ies] responsible for providing free public elementary or secondary education."19 The other 85 districts exist within these regular school districts and generally reflect individual schools or specialized programs (e.g., preparatory academies, schools for deaf or blind students). For the sake of broader generalizability and to avoid issues with small numbers in our results, we excluded these smaller 85 districts.

We obtained COVID-19 prevention policy data for Wisconsin school districts from responses to a national crosssectional telephone survey.11 MCH Strategic Data (Sweet Springs, MO) designed the questionnaire in partnership with Esri (Redlands, CA) and the CDC Foundation (Atlanta, GA). This questionnaire was administered to US K-12 public school districts before the start of the 2021 - 2022 school year. For this analysis, we extracted Wisconsin school district survey responses related to masking, physical distancing, and quarantine policies. The original survey requested specific responses about whether the policy applied to students and educators separately. We operationalized each ofthese policies as (1) robust-required for both students and educators, (2) partial- required for either students or educators, or (3) absent-required for neither students nor educators (Table A, available asa supplement to the onlineversion of this article at http://www.ajph. org). We excluded districts missing information for all distancing, masking, and quarantine policies.

To adjust for potential ascertainment bias owing to regular COVID-19 testing policies in schools (wherein districts with prevention policies might have also been asking educators to routinely test for COVID-19), we also extracted information on regular staff testing policies.

Person-Level Confounders

We included 3 educator-level variables as potential confounders: age, sex, and COVID-19 vaccination status. We obtained age and sex from the educator licensure information. We collected COVID-19 vaccination information from the Wisconsin Immunization Registry, which the Wisconsin Department of Health Services stores and maintains. We linked educators to COVID-19 vaccination records based on an exact match for first name, last name, and date of birth. We implemented a subsequent linking step using an exact match for date of birth and approximate text matching on both first name and last name. Approximate text matching was based on Jaro-Winkler distance calculations (with distance # 0.25).20

Community-Level Confounders

We considered 2 community-level variables to be potential confounders given their association with educator risk outside the school environment and their likely association with COVID-19 policies implemented in school districts. First, we aggregated COVID-19 case data from WEDSS by week for each Wisconsin school district community (i.e., the general population living in school district boundaries), which we used to account for temporal changes in COVID-19 incidence.21 Second, we accounted for the proportion of the school district community vaccinated against COVID-19 using publicly available Wisconsin Immunization Registry data.21

School District-Level Confounders

We incorporated 2 district-specific variables into our analysis as confounders. For one, we calculated a proxy for average classroom size using a student to educator ratio derived from the NCES Common Core data set. Using this same data set, we included the NCES locale classification of school district (city, suburb, town, or rural). Definitions for each locale were based on census-defined groupings and are available on the NCES Web site.19

Statistical Analysis

To compare unadjusted differences in school districts with different prevention policies, we used nonparametric statistical tests, including Wilcoxon rank-sum for continuous variables and X2 for categorical variables.

To compare hazard rates of COVID-19 among educators working in districts with various prevention policies, we used a mixed-effects Cox proportional hazards model. We adjusted this model for previously described confounders at the individual, community, and school district levels. We included a random effect for school district to account for additional unknown or unobserved confounders at the school district level. We chose to keep all 3 prevention policies in the same multivariate-adjusted regression model to assess their independent contribution to the overall association. We assessed Schoenfeld residuals to confirm that neither the model overall nor the 3 main policy variables violated the proportional hazards assumption.22 We used spline terms for continuous confounders to allow a nonlinear relationship with the outcome.

We used 4 distinct regression models to account for school districts that were missing district-level data for 1 or 2 COVID-19 prevention policies. Model A included information only from school districts with complete data for all 3 policies. Model B imputed missing policy information using information from nonmissing district-level characteristics, including district population size, proportion of district vaccinated in fall 2021, NCES locale (i.e., urban vs rural), and number of educators and students.23 As a sensitivity analysis, we created 2 other data sets in which missing policy information was assumed to be either absent (model C) or robust (model D). We conducted all analyses in R version 4.1 (R Foundation for Statistical Computing, Vienna, Austria).24

RESULTS

Of the 378 Wisconsin K-12 regular school districts, 43 districts (11.4%) did not submit any response for policies related to physical distancing, mask use, or quarantine (Figure 1). We excluded these districts from our analysis, including the 5169 educators affiliated with them. We also excluded educators who were not considered to be at risk for COVID-19 because a 90-day window following recent infection extended throughout our entire analysis period (n 5 125; illness onset dates: August 24-September 1,2021). Lastly, we excluded all school districts that reported a teaching method for fall 2021 other than "full in-person learning" (n 5 28 districts; n = 16 478 affiliated educators). We were left with 51 997 licensed, in-person K-12 educators from 307 school districts in our study sample. Educators were on average aged 44.0 years; the majority were female (n 5 38 702; 74.4%), non-Hispanic White (50 478; 97.1%), and employed by their school district as a teacher (39 732; 76.4%). As of the first day of the 2021 - 2022 school year (September 1,2021), 40 526 (77.9%) educators had completed a full primary series of a COVID-19 vaccination. From September 2 through November 24 (the day before the start of Thanksgiving break), 2838 (5.5%) of 51 997 educators were linked to a case of COVID-19. This translated to an unadjusted cumulative incidence of 5458 cases per 100 000 educators.

Responding K-12 public school districts implemented a variety of prevention practices, but policies were nearly always applied to students and staff equally (Table 1; Figure 2). Very few districts implemented a partial policy. Among districts that reported a robust policy practice, physical distancing procedures were the most commonly reported (188/278; 67.6%), followed by quarantine (87/169; 51.5%), and then masking requirements (73/298; 24.5%).

Unadjusted Kaplan-Meier curves indicated that educators working in districts with a robust distancing, masking, or quarantine policy (compared with those working in districts without these policies) experienced a significantly lower hazard of COVID-19 illness from September 2 through November 24, 2021 (Figure A, available as a supplement to the online version ofthis article at http://www.ajph.org).

Using our imputed multivariate mixedeffects proportional hazards model, we found that, compared with those in districts without masking policies, educators working in districts with robust masking policies were associated with a 19% lower hazard of COVID-19 during September 2 through November 24 (hazard ratio [HR] 5 0.81; 95% confidence interval [CI] 5 0.72,0.92). Neither quarantine nor distancing policies were significantly associated with educator rates of COVID-19 during our analysis period. Model findings were relatively unaffected by missing data assumptions in our sensitivity models (Table C, available as a supplement to the online version ofthis article at http://www.ajph.org). When we stratified our imputed model by grade level, the hazards reduction associated with a robust masking policy remained consistent and statistically significant across elementary, middle, and high school locations (HR 5 0.83 [CI 5 0.77, 0.99]; HR = 0.74 [CI 5 0.58, 0.95]; and HR 5 0.77 [CI 5 0.61,0.98], respectively).

In assessing the potential for outcome ascertainment bias among school districts, we noted that the use of COVID-19 testing policies among educators was low but comparable between districts using different COVID-19 prevention policies (Table 1). In addition to unadjusted Kaplan-Meier curves (Figure B, available as a supplement to the online version of this article at http://www.ajph.org), we also reran our complete case model (Table 2; model 1), including a binary indicator variable for staff testing alongside the 3 other policy variables; it did not substantially alter the point estimates or CIs for our main policies of interest (not shown).

DISCUSSION

Our results provide further evidence ofthe benefits of student and staff masking in school settings during a period of high community transmission.1-3,25,26 COVID-19 incidence rates in our assessed group of Wisconsin K-12 school district communities averaged 49.3 per 100 000 residents during the study period (range 5 2.6-293.6 per 100 000 residents). During the first 3 months ofthe 2021 -2022 academic year (September 2-November 24), and adjusted for pertinent person- and community-level factors, in-person educators working in school districts with both student and staff masking policies in place were 19% less likely to experience a COVID-19 illness than were their counterparts working in districts without any masking policies. This is equivalent to a 23% higher HR among educators in districts without masking policies than among educators in districts with robust masking policies. Moreover, the protective effect associated with a robust masking policy was consistent across elementary, middle, and high school environments.

Our findings complement those of an ecologic study by Budzyn et al., who, using the same MCH survey policy data, determined that after the start of the 2021 -2022 school year, US counties with school mask policies in place for students and staff experienced a significantly lower risk of pediatric COVID-19 cases than did counties without mask mandates (16.3 vs 34.9 cases per 100 000 children aged <18 years).27 Existing research also corroborates our study's lack of association between COVID-19 risk and either physical distancing or quarantine after exposure (imputed HR = 1.08; 95% CI = 0.98, 1.19 and HR = 0.98; CI = 0.89,1.07, respectively). For example, 2 articles from the Duke University School of Medicine that suggest that-in the presence of masking policies-distancing or quarantine policies might have little effect on COVID-19 risk reduction.25,26

K-12 educators, despite a higher risk of workplace-associated COVID-19 incidence, do not appear to be at more risk for severe outcomes of COVID-19 than do those in other professional categories.28,29 But, in our work, the 23% higher rate of COVID-19 illness among educators in districts without any masking policy is not without potential ramifications. In studies of school-based COVID-19 outbreaks, researchers identified that staff are often as involved in outbreaks as students.4,6,12,13 These school-based outbreaks can subsequently spill over to the surrounding community members; for instance, preventing COVID-19 transmission in educational settings has a noted benefit to households associated with schoolchildren.15

We also note that the educators in our study were relatively young (average age 5 44 years), almost entirely nonHispanic White (97.1%), and highly vaccinated (77.9% having completed a full, primary vaccination series by the start of school). Therefore, our calculated HRs among Wisconsin educators might not be generalizable to all educators in the United States. Indeed the 23% higher HR of COVID-19 associated with a lack of a masking policy in Wisconsin school districts could be more pronounced in US school districts with an older or less vaccinated population of educators.

Limitations and Strengths

The findings of this study are subject to at least 3 principal limitations. First, policy variables were based on responses at the beginning of the semester. We were unable to account for potential changes to policy throughout the semester. However, we note that the trajectory of COVID-19 cases in Wisconsin was increasing from early July 2021 through mid-January 2022. For this reason, we do not expect that policies were suspended during our analysis period-if anything, it is more likely that some districts without policies in September implemented them duringthe analysis period. In this sense, our results might reflect conservative estimates. Similarly, although we were unable to account for measures of policy compliance, we do not anticipate that policy compliance dramatically waned during this period of increasing case rates-at least not because of a lack of pandemic awareness throughout the state.

Second, the MCH survey requested answers to broad questions (Table A, available as a supplement to the online version of this article at http://www. ajph.org). Because of this, the categorical exposure levels in our analysis might obscure nuances in the way distancing, masking, or quarantine policies were implemented in each district or among schools in the district. For example, there were no data available regarding the type of masks required in school districts with masking policies. Evidence shows that different types of masks are associated with different levels of fit, quality, and effectiveness,30-32 and so our overall risk reduction associated with masking may gloss over more nuanced levels of protection associated with various masks.

Similarly, because of small numbers, we were unable to assess risks of COVID-19 associated with a heterogeneous application of policies, such as the effects of staff masking or student masking alone. We cannot conclude, therefore, whether mask wearing by in-person educators or by students specifically contributed more to the reduction in educator risk. Future work could consider the risk reduction in schools with a mask policy applied only to in-person educators.

Third, there was potential for selection bias in our analysis, although we took care to minimize any potential consequences of this. It is true that, statewide, 11 % of all regular K-12 school districts did not report any policy data, and we excluded these from analysis. However, these districts were distributed throughout the state in urban and rural areas, which minimized the concern of unrepresentative data (Figure 2). Similarly, it is possible that educators in different districts were more or less likely to report COVID-19 cases to local health departments, perhaps because of prevailing social willingness to be tested for COVID-19 or the use of self-tests at home. To lessen the impact of this bias, we included a random effect term for school district in our model.

This study builds on the existing literature in 2 notable ways. For one, previous studies investigating COVID-19 prevention policies in schools often lacked comparison groups because of their analysis time frame, which occurred when the vast majority of school districts had implemented similar masking and other prevention policies; these previous studies were limited in ability to contrast policies. Previous studies often considered only schools in which the policy was applied, and thus researchers were unable to determine whether the observed low COVID-19 risk was associated with the presence of the prevention policy itself. In our analysis of heterogenous policy use, we found that the presence of student and staff masking policies in Wisconsin school districts, compared with the absence of such policies, was associated with a significantly reduced rate of COVID-19 among in-person educators.

A second strength of our analysis was our ability to control for a wide range of pertinent person- and community-level confounders. We were able to use data from a variety of state and national data sources to control for educator vaccination status, educator age, community vaccination status, weekly incidence of COVID-19 in the community, urbanicity of the school district, and student to teacher ratio. Additionally, we implemented a random-effects model in an attempt to control for unobserved confounders at the school district level.

Public Health Implications

Our work shows that an in-person educator's risk of infection can be reduced with group mask use-a simple, nonpharmaceutical intervention. Beginning in February 2022, the Omicron variant wave of the COVID-19 pandemic tapered off, prompting the United States and other countries to lift many or all of their societal COVID-19 prevention policies. Fortunately, surveillance data continue to indicate that the risk of severe COVID-19 outcomes in younger children remains rare. But in consideringthe beneficiaries of masking policies in US K-12 schools, it is important to bear in mind the health of the nation's 5.5 million K-12 educators and the 3 million additional in-school staff.14

We want to be clear that our findings do not suggest that a robust mask policy in K-12 schools be applied in perpetuity without consideration of external factors. Instead, our work adds further evidence to underscore the role of mask policies in school environments. Student and staff mask wearing during periods of high community transmission prevented illness in schools among a highly vaccinated population of in-person educators and may be a worthwhile consideration during future periods of high COVID-19 transmission in the community. ÂfPH

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P. M. DeJonge designed the study, led statistical analyses, and drafted the article. P. M. DeJonge, C. Tomasallo, andJ. Meiman codeveloped the analysis plan. I.W. Pray and K. McCoy provided epidemiologic and subject matter expertise. R. Gangnon provided statisticalexpertise and reviewed methods for validity throughout the analysis. C. Tomasallo andJ. Meiman provided major contributions in database access and management at the state level. All authors reviewed and revised the final version of the article.

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The CDC reviewed this activity and determined that it met the requirements of public health surveillance as defined in 45 CFR 46.102(l)(2) and was conducted in a manner consistent with applicable federallaw and CDC policy. We stored all identifiable information on protected Wisconsin Department of Health Services servers, and analysts used only de-identified data.

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Living Alone and Suicide Risk: A Complex Problem Requiring a Whole Population Approach

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ABSTRACT (ENGLISH)

Death by suicide is one of the great challenges in public health. Suicide is a tragedy that affects not only the deceased individual but also everybody to whom that individual was connected. Yet, despite the link between death by suicide and social integration being long recognized and many efforts to reduce suicide rates in recent decades,1 the age-adjusted rate of suicide in the United States increased from 10.5 per 100 000 in 1999 to 13.9 in 2019.2 Before the pandemic, suicide was the 10th leading cause of death in terms of all-age mortality; in comparison, ageadjusted rates for the top three causes of death are 161.5 per 100 000 for heart disease, 146.2 for cancer, and 49.3 for unintentional injuries. Suicide is even more important among those younger than 65 years, ranking as the fifth leading cause of death.2 The US suicide rate is not atypical, with the suicide rate for other high-income countries being 13.7 per 100 0003 Thus, identifying how to best target interventions to address suicide is a global priority.

In this issue of AJPH, Olfson et al. (p. 1774) describe who dies alone and how. The strongest associations between living alone and risk of suicide are for those with the most advantaged social positions, as indicated by education, income, and ethnicity. Looking at the results in additional detail provides more information. Among adults living with others, suicide rates decline with increasing income and education levels. Conversely, there is little evidence of any differences in suicide rates by income or education among people living alone, a finding that cannot be explained by chance.

FULL TEXT

Death by suicide is one of the great challenges in public health. Suicide is a tragedy that affects not only the deceased individual but also everybody to whom that individual was connected. Yet, despite the link between death by suicide and social integration being long recognized and many efforts to reduce suicide rates in recent decades,1 the age-adjusted rate of suicide in the United States increased from 10.5 per 100 000 in 1999 to 13.9 in 2019.2 Before the pandemic, suicide was the 10th leading cause of death in terms of all-age mortality; in comparison, ageadjusted rates for the top three causes of death are 161.5 per 100 000 for heart disease, 146.2 for cancer, and 49.3 for unintentional injuries. Suicide is even more important among those younger than 65 years, ranking as the fifth leading cause of death.2 The US suicide rate is not atypical, with the suicide rate for other high-income countries being 13.7 per 100 0003 Thus, identifying how to best target interventions to address suicide is a global priority.

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Essentially, living alone, particularly in the case of men, seems to be associated with not only an increase in the risk of death by suicide but also an absence of a social gradient in death by suicide. Given the acknowledged lack of adjustment in the Olfson et al. study, it is possible that living alone could be a marker for previous mental health issues or other factors. However, the relationship between death by suicide and living alone has been shown to persist after adjustment for poor mental health4 and merits further discussion.

Two possible theories stand out in explaining the Olfson et al. results: the concept of "thwarted belongingness" from the interpersonal theory of suicide and the integrated motivationalvolitional theory. Thwarted belongingness is the perception that a person is alone and lacking any reciprocal caring relationships, and clearly living alone is potentially a marker for thwarted belongingness.5 However, according to the overall theory, thwarted belongingness alone is not sufficient to induce suicidal behavior. The Olfson et al. study lacks indicators for another necessary component of the theory, "perceived burdensomeness," which indicates the degree to which people feel liability to others or self-hatred, and so other theories are required.

The integrated motivational-volitional theory divides the development of suicide into three different phases: the premotivational phase, the motivational phase, and the volitional phase.6 In the premotivational phase, background factors set up vulnerabilities to suicidal behavior; these factors include negative life events, social circumstances, and biological factors that might predispose people to suicidal behavior. One characteristic in the premotivational phase that has been consistently linked to suicidal behavior is socially prescribed perfectionism, defined as people's belief that others hold unrealistically high expectations ofthem.7 Perfectionism is certainly something that could drive people to be educationally successful and pursue higher incomes and that could increase the risk of suicide. This alone would not be enough to explain the Olfson et al. results.

The integrated motivational-volitional theory also puts forward that those predisposed to suicide do not automatically progress to suicidal ideation or intent. In the motivational phase, it is argued that events or situations may arise that induce feelings of defeat or humiliation, ultimately leading people to a feeling of being trapped with no perceived escape.6 Factors such as a failure to achieve goals, thwarted belongingness, a lack of coping skills, and lack of availability of social support are proposed to affect transitions to suicidal intentions. In this context, living alone may not simply be an indicator of loneliness or thwarted belongingness but also an indicator of failing to achieve important life goals and the support thereby obtained, such as having a partner or raising children.4

The volitional phase is when thoughts about suicidal intent turn into actions. Factors that are important at this stage include access to means to complete suicide, exposure to and knowledge about suicide, and personality traits such as impulsivity.6 As discussed by Olfson et al., living alone may be more strongly related to suicide by poisoning because it limits the opportunities for other people to intervene. Although the Olfson et al. results are consistent with theory, the lack of data on important factors such as mental health indicate that there are alternative explanations. Their study provides further support for the integrated motivational-volitional theory, but the entire process has not been tested.6

Developing interventions that address issues such as perfectionism and failing to achieve family goals will not be easy, and there might be tradeoffs in terms of economic outcomes. Thus, addressing suicidal behavior requires a recognition that it is a complex issue necessitating different methods and study designs. Methods may include ecological momentary assessments, which enable data to be collected in real time and may provide better information on specific components of suicidal behavior.6 In addition, social network analysis may provide insights into social connections and how living alone relates to suicidal behavior.6

New approaches such as simulations may be required to synthesize data from multiple sources.8 In this context, descriptive studies such as that of Olfson et al. can be used to validate the results of simulations informed by other designs. However, given the difficulty of predicting suicidal behavior6 and the commonness of important risk factors such as living alone, targeting high-risk groups may not be practical without further research.

An alternative to targeting interventions toward high-risk individuals would be to take a whole population approach,1 as suggested by Geoffrey Rose.9 Restricting access to the methods used for suicide appears to be successful in reducing suicide rates, as there seem to be limited substitution effects.10 The Olfson et al. results confirm a suitable target for intervention. Firearm deaths contribute to more than half of suicides irrespective of living arrangements. Although it is not easy to generate the political will to limit access to firearms, policies such as mandatory waiting periods and background checks have been shown to reduce suicide rates.11 Other possible options include limitingthe number of tablets included in a packet of paracetamol and restricting access to suicide hotspots such as bridges.10

However, the appropriateness of interventions is context dependent. In addition, caution is needed in interpreting the results of interventions; for example, the implementation of restrictions on the package size of paracetamol tablets took place in combination with other polices aimed at improving health more generally. Consequently, the relationship between reduced package sizes and reduced suicide rates may be confounded by other policy changes.12 Reducing suicide rates may require approaches aimed at improving the whole population's health in general rather than simply decreasing suicides.

Sidebar

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The author has no conflicts of interest to disclose.

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State-Level Legislation During the COVID-19 Pandemic to Offset the Exclusion of Undocumented Immigrants From Federal Relief Efforts

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ABSTRACT (ENGLISH)

The COVID-19 pandemic has worsened the health inequities faced by immigrants, particularly those who are undocumented. Early studies have shown that COVID-19 has disproportionally affected immigrants and their communities.1 One of the factors that explains the disproportionate morbidity and mortality among immigrants is labor market participation. Undocumented immigrants are predominantly in low-income groups and are uninsured workers who continued to work on-site duringthe COVID-19 pandemic. Approximately three-fourths of undocumented immigrants work in industries classified as "essential," including agriculture, meatpacking, and construction, among others.2 Despite the critical participation of undocumented immigrants in essential economic activities, and with the related elevated risk of infection with COVID-19, more than 15 million undocumented immigrants and US citizens who lived in mixed-status households were ineligible to receive direct cash payment support under the 2020 CARES Act.2 This exclusion from federal relief is part of the continuation of the systematic barring of undocumented immigrants since the passing of the Personal Responsibility and Work Opportunity Act of 1996 that denied or limited the eligibility of immigrants for federally funded programs.3 Undocumented immigrants were eligible for no-cost COVID-19 testing, treatment, and vaccination.2 Anti-immigrant policies and rhetoric, however, likely discouraged the use of health care services available to undocumented immigrants.

FULL TEXT

The COVID-19 pandemic has worsened the health inequities faced by immigrants, particularly those who are undocumented. Early studies have shown that COVID-19 has disproportionally affected immigrants and their communities.1 One of the factors that explains the disproportionate morbidity and mortality among immigrants is labor market participation. Undocumented immigrants are predominantly in low-income groups and are uninsured workers who continued to work on-site duringthe COVID-19 pandemic. Approximately three-fourths of undocumented immigrants work in industries classified as "essential," including agriculture, meatpacking, and construction, among others.2 Despite the critical participation of undocumented immigrants in essential economic activities, and with the related elevated risk of infection with COVID-19, more than 15 million undocumented immigrants and US citizens who lived in mixed-status households were ineligible to receive direct cash payment support under the 2020 CARES Act.2 This exclusion from federal relief is part of the continuation of the systematic barring of undocumented immigrants since the passing of the Personal Responsibility and Work Opportunity Act of 1996 that denied or limited the eligibility of immigrants for federally funded programs.3 Undocumented immigrants were eligible for no-cost COVID-19 testing, treatment, and vaccination.2 Anti-immigrant policies and rhetoric, however, likely discouraged the use of health care services available to undocumented immigrants.4

STATE AND LOCAL GOVERNMENTS EXPAND HEALTH COVERAGE

Previous research has shown that documentation status is one of the main contributors to health and health care inequities and a key predictor of uninsured status for immigrants.5,6 Lack of health insurance coverage among undocumented immigrants is associated with delays in seeking health care and underuse of cost-effective health care services.7,8 With federal inaction regarding regularizing the stay of undocumented immigrants, several state and local governments have taken action to address the health care needs of undocumented immigrants. State and local policies are particularly salient because most undocumented immigrants live in a few states and metropolitan areas. For instance, approximately 63% of undocumented immigrants live in only six states (California, Texas, Florida, New York, NewJersey, and Illinois), and almost 82% of undocumented immigrants live in only 178 counties.9 With declining federal support for immigrant health coverage, state and local safety net providers have had to assume the responsibility to offer health care and other basic public services to undocumented immigrants.

In this issue of AJPH, DeGarmo et al. (p. 1757) analyze state-level legislation targeting undocumented immigrants between November 2021 and August 2021. The authors used a systematic search method to identify and classify state bills that addressed the needs of undocumented immigrants duringthe COVID-19 pandemic. Their main findings were that the legislatures of 13 states proposed a total of 66 bills classified under health-related services, job security and employment benefits, and monetary assistance. However, only 17 of these bills ultimately became law.

Although it is noteworthy that 94% of new legislation is protective of undocumented immigrants, this must be contrasted with a couple of policy dilemmas. First, federal aid, including the stimulus checks of 2020, generally excluded undocumented immigrants by default. Second, not all states that had large numbers of undocumented immigrants adopted protective legislation for them. For instance, California, New York, and Illinois were amongthe 13 states where protective legislation was proposed; however, states with large populations of undocumented immigrants, such as Texas or Florida, were amongthe 37 states maintaining a prepandemic status quo that left millions of undocumented immigrants at high risk.

STATE POLICIES FOR COVERAGE DURING PANDEMIC

This study is an important contribution to our understanding of how state policies aimed to address the increased vulnerabilities experienced by undocumented immigrants during the COVID-19 pandemic. Although the accounting of state legislation is an insightful and important metric, it has limitations. The approval of bills and resolutions to improve access to public resources for undocumented immigrants is an important first step; however, policies and programs need to be effectively implemented and evaluated to determine their effects. It remains unclear what the community health impacts were of these bills and resolutions that ultimately passed.

Moreover, providing health care to undocumented immigrants should be in the spirit of health as a human right and not simply a way of getting undocumented immigrants tested and vaccinated to prevent infectious diseases among citizens. As the authors point out, there was much conjecture among politicians and others about COVID-19 being spread by undocumented immigrants. Public health history in the United States has shown that medical professionals and others advocated for the health rights of Black people so that they would not spread disease to White people, as opposed to advocating for their health care as a human right.10 We should not be repeating this history for immigrants or any other minoritized population.

Health policies and programs need to be improved so that immigrants trust health care providers and systems. Minoritized populations, including immigrants and especially undocumented immigrants, experience discrimination in health care.11 Misinformation also reduces the reach and effective implementation of laws and policies targeting undocumented immigrants. For instance, a recent study estimated that 108 000 to 193 000 Latino immigrants without green cards in California did not enroll in Medicaid despite their eligibility, likely because of fear of the public charge rule even though the Biden administration reversed the change in its definition by the Trump administration.4 Likewise, anti-immigrant rhetoric and polices likely contributed to lower COVID-19 testing, vaccination, and treatment uptake because of mistrust or fear of deportation of themselves or a friend or a family member, regardless of the state law.

EXPANDING HEALTH CARE IN STATES THAT LACK COVERAGE

One important finding of the study is that the 13 states that introduced bills and resolutions to help undocumented immigrants in the context of COVID-19 had large or rapidly growing undocumented immigrant populations. However, many states have not introduced any COVID-19-related public health legislation to help immigrants, and many of these states are conservative states where undocumented immigrants are working on the front line in essential jobs, especially in the food industry (e.g., farming, processing, distribution, retail). Although it is laudable that some states are starting to enact legislation to protect undocumented immigrants in terms of their health and social welfare, variation across states is widespread. It is also possible to find variation within states. For example, even though California has enacted progressive legislation to protect undocumented immigrants, variability remains in how laws and programs are implemented across counties, and implementation tends to vary by political party line.7

The importance of the study's findings is highlighted by two new threats. First, as the COVID-19 pandemic continues, another epidemic has emerged: the monkeypox virus. The disease carries high levels of stigma, requires up to 28 days of isolation, and has disproportionately affected Black and Latino populations, which underlies the need for stronger protections for undocumented immigrants. Simultaneously, the Biden administration's attempt to limit the number of individuals targeted by immigrant enforcement agencies has been curtailed by ongoing litigation, which raises the possibility that immigration arrests may resurge to prepandemic levels. Likewise, the sunsetting of Title 42, a public health law that has been used more for immigration enforcement than for COVID-19 prevention, has also been delayed by the actions of state and national officials who came to the program's defense. This will likely have a chilling effect on screening and contact tracing, which is similar to the chilling effects produced by changes to the public charge rule in 2019 by the Trump administration.4 In fact, one particularly worrisome issue is that few state-level protections attempted to prohibit immigration authorities from accessing contact tracing data directly.

It is critical that US public health policy be proactive in the face of these public health crises, rather than being reactionary after new diseases have taken hold. The study underscores the need for a universalist approach to legal protections. Our society's public health fabric is only as strong as its weakest link, and, when we exclude groups a priori, we facilitate the resurgence of disease. The legislation profiled in this study should serve as a blueprint for other governments seeking to navigate the landscape of immigration policy and laws during the age of climate change and increasing infectious disease pandemics. Â1PU

Sidebar

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CONFLICTS OF INTEREST

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The Perfect Gun Policy Study in a Not So Perfect Storm

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ABSTRACT (ENGLISH)

In 2019, Louis Klarevas, Andrew Conner, and David Hemenway published "The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990-2017."1 This seminal study empirically demonstrated that prohibition of large-capacity magazines (LCMs) attenuates mass shooting incidents and lethality.1 The article ranks in the top 1% of high attention scores and is the most cited and discussed research study in social and legacy media in the history of AJPH. To date, the study has been mentioned in 569 media sources including 73 news outlets (with 87% of the mentions being made by the general public), and there have been 32 research citations.2 Dimensions, a research insights platform, reports that the article has received approximately eight times more citations than average. Tothat end, we explain why this study continues to have a large impact, leaving an indelible mark in academic circles while garnering the public's attention despite the political, academic, personal, and cultural hurdles Hemenway has faced dating back to the 1990s.

FULL TEXT

n 2019, Louis Klarevas, Andrew Conner, and David Hemenway published "The Effect of Large-Capacity Magazine Bans on High-Fatality Mass Shootings, 1990-2017."1 This seminal study empirically demonstrated that prohibition of large-capacity magazines (LCMs) attenuates mass shooting incidents and lethality.1 The article ranks in the top 1% of high attention scores and is the most cited and discussed research study in social and legacy media in the history of AJPH. To date, the study has been mentioned in 569 media sources including 73 news outlets (with 87% of the mentions being made by the general public), and there have been 32 research citations.2 Dimensions, a research insights platform, reports that the article has received approximately eight times more citations than average. Tothat end, we explain why this study continues to have a large impact, leaving an indelible mark in academic circles while garnering the public's attention despite the political, academic, personal, and cultural hurdles Hemenway has faced dating back to the 1990s.

THE POLITICIZATION OF SCIENCE

Although many topics have been politicized, public health research on gun control was intentionally suppressed by the federal government through the Dickey Amendent.3 The 1996 congressional appropriations bill stipulated that "none of the funds made available for injury prevention and control at the [Centers for Disease Control and Prevention] may be used to advocate or promote gun control."3(p549) The political fallout and academic witch hunts, combined with a dearth in funding, were unprecedented.3-5 A handful of academics, people such as Hemenway, kept the lights on and continued to link policies to gun injury prevention.3,5 They challenged our thought leaders at a time when there was not enough political will6 to reduce gun violence. These academics became icons because they did their research in a hostile environment. They lost research funding, were targeted by the National Rifle Association, and faced daunting congressional inquiries.

Violence researchers either had to remove guns from their research or risked being defunded or attacked by the US Congress and gun rights advocates. Thankfully tenure prevailed, or even the scant public health gun studies would never have happened. The historical context of politicization elevates Klarevas et al. because earlier work, especially that of Hemenway, was published under attack, much like the work of scientists who study climate change, critical race theory, or COVID-19 masking. However, Klarevas and Hemenway have published other research on gun violence that did not rise as high on the public agenda, so we must look to additional factors to understand what catapulted this particular study.

PUBLIC HEALTH IMPLICATIONS OF THE SUPREME COURT RULING

On June 23, 2022, the Supreme Court ruled in favor of the Second Amendment's operative clause (the right of people to keep and bear arms shall not be infringed) over the prefatory clause (a well-regulated militia being necessary to the security of a free state). The court expanded individual gun rights and threw out several lower court rulings that upheld gun restrictions, including bans on assault-style rifles in Maryland and large-capacity ammunition magazines in NewJersey and California.7 In addition, the court limited state policies regarding the purchase, possession, and transportation of firearms and revoked the only gun-control policies known to curtail mass shootings. Thus, the number of mass shootings and their lethality will continue to rise. Ironically, the search for some secret solution to stop mass shootings will redirect policymakers and journalists back to Klarevas et al. yet again after the next mass shooting.

NEWS COVERAGE OF MASS SHOOTINGS

In 2021, nearly 49 000 people in the United States died from guns.8 Another 100 000 were shot but survived their injuries. Approximately 60% of gun deaths were suicides, less than 5% were accidental or police shootings, and approximately 36% were homicides. Most homicides are not the result of mass shootings.9 In fact, mass shootings make up less than 1% of gun deaths but account for most of the media attention. Suicides are more commonplace events but less likely to make the national news cycles.

The result is that mass shootings more often appear as news stories, thus distorting the public's perceptions about which types of gun deaths are bigger threats. Parents are more terrified that their children will be killed in a school mass shooting even though there is a much higher likelihood that they will injure or kill themselves if there is an unsecured gun in the home. In the aftermath of a mass shooting, gun violence researchers become part of the media frenzy and are interviewed at length. Because research on mass shootings crosses over from the scientific community to the public, mass shooting research is more likely to capture the general public's attention.

A BUNCH OF FIRSTS AND SCIENTIFIC RIGOR

First Hemenway and later Klarevas published public health gun research when it was unpopular. More important, they set the stage for gun violence researchers who would come after. Klarevas et al. published their article in 2019, just before the 2020 federal budget included $25 million for the Centers for Disease Control and Prevention and the National Institutes of Health for research on reducing gun-related deaths and injuries after a 24-year hiatus, paving the way for a proliferation of new gun violence research.10,11

MASS SHOOTING RESEARCHERS DO NOT AGREE ON MUCH

Within academic circles, there is much debate about what constitutes a mass shooting, where it happens, how many people die, and which data to use. Regardless, Klarevas, Conner, and Hemenway followed the public health standard for how to do policy-relevant research. First, they built on existing science on gun violence and mass shootings. Second, they isolated a specific type of mass shooting, one with high lethality (six or more fatalities), and then linked policyto prevention. Gun violence and mass shooting researchers cited this study because the authors used a narrow and specific definition of high lethality, including number of people killed, where the shooting occurred, by whom, the data source, and inclusion and exclusion criteria.11

Even the Federal Bureau of Investigation does not have a mass shooting definition. Instead, it defines "mass murder" as an incident in which four or more people are killed, which can include gun violence. Klarevas et al. employed a sophisticated modeling and research design that was more rigorous than designs used in observational studies. Also, they illustrated the analytic steps they took to rule out alternative interpretations and triangulate their findings, for example examining both state bans and federal bans. They helped build the foundation for future studies while overcoming the limitations of previous research.

MOVING MASS SHOOTING SCIENCE FORWARD

Later research would draw the line in the sand where this study ended or dig into other nuances not addressed.11 For example, Klarevas et al. included both national and state-level bans on LCMs; however, the national legislation and some states also included a ban on assault weapons, so we cannot say with certainty that it was a ban on LCMs, a ban on assault weapons, or a combination. Because assault weapons often (but not always) include LCMs while other guns that are not assault weapons also include LCMs, it is possible that a ban on either would attenuate mass shootings. In addition, although LCM bans were effective, significant loopholes remained that would-be shooters could get around to access illegal weapons and magazines. Most policies grandfathered in individuals who already owned assault weapons with LCMs. Other research would go on to identify stolen guns as pervasive in homicide shootings, so not removing assault weapons and LCMs from the population might reduce the impact of bans.

Moreover, although the weapon bans were applied to gun sales, private vendors were not subject to the bans. After the federal assault weapon ban sunset in 2004, motivated shooters in states with bans were able to easily travel to states without bans, underscoring the need for national policies. Finally, although Klarevas et al. made a good case for including only mass shootings that resulted in six deaths or more, it is important to know whether LCMs empower mass shooters in general, even in the case of shootings with a lower lethality threshold.

SUMMARY

Klarevas, Conner, and Hemenway published an important study that was not popular in select political circles or among gun manufacturers and the National Rifle Association. They firmly established that high-lethality mass shootings can be prevented through policies. Their investigation built on previous mass shooting research, and the gun scholars who came afterward used the study to agree or disagree but always to push the knowledge base forward. Scholars cite this seminal study because of its robustness and quality. Louis Klarevas, Andrew Conner, and David Hemenway are agitators who got into what the late, great Representative John Lewis (D, GA) called "good trouble, necessary trouble."12 Scientists walk away from this study knowing that policies can prevent gun deaths, whereas nonacademic citizens have learned that commonsense policies informed by scientific rigor, such as bans on LCMs, help to prevent public massacres. Finally, researchers have learned that they must persevere, sometimes in hostile environments, to inform injury prevention. ÂfPU

Sidebar

CORRESPONDENCE

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CONTRIBUTORS

L. A. Post was responsible for drafting the outline and for the overview of mass shootings, the Supreme Court ruling, definitions of mass shootings, laws on large-capacity magazines, and assault weapon bans. M. Mason was responsible for the policy-making process, various media citations, and metrics of impact factors.

CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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Sidebar

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Brian Selzer drafted the initial version. All authors reviewed the article and approved finalproof.

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Excess Mortality From Non–COVID-19 Causes During the COVID-19 Pandemic in Philadelphia, Pennsylvania, 2020–2021

Todd, Megan, PhD; Scheeres, Annaka, MPH

ProQuest document link

ABSTRACT (ENGLISH)

Objectives. To estimate excess mortality from non-COVID-19 causes during the COVID-19 pandemic in Philadelphia, Pennsylvania, and understand disparities by race/ethnicity, age, and sex. Methods. We used Poisson regression models of weekly deaths using data from Pennsylvania's vital registration system (2018-2021). Results. There was significant excess mortality as a result of heart disease, homicide, diabetes, drug overdoses, traffic crashes, and falls in 2020-2021; the burden of this excess non-COVID-19 mortality fell on non-Hispanic Black Philadelphians. Among younger non-Hispanic Black men, homicide and drug overdoses were responsible for 54% and 18% of excess deaths-more than COVID-19 (17%). For younger non-Hispanic Black women, drug overdoses accounted for 51% of excess deaths, whereas COVID-19 accounted for 40%. Conclusions. Excess mortality was not solely caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; the causative agent of COVID-19), particularly at younger ages. Indirect pandemic mortality exacerbated prepandemic disparities by race/ethnicity. Public Health Implications. Excess mortality as a result of non-COVID-19 causes may reflect indirect pandemic mortality. National cause-of-death data lag behind local cause-of-death data; local data should be examined as an early indication of trends and disparities. Public health practitioners must center health equity in pandemic response and planning. (AmJ Public Health. 2022;112(12):1800-1803. https:// doi.org/10.2105/AJPH.2022.307096)

FULL TEXT

Headnote

Objectives. To estimate excess mortality from non-COVID-19 causes during the COVID-19 pandemic in Philadelphia, Pennsylvania, and understand disparities by race/ethnicity, age, and sex.

Methods. We used Poisson regression models of weekly deaths using data from Pennsylvania's vital registration system (2018-2021).

Results. There was significant excess mortality as a result of heart disease, homicide, diabetes, drug overdoses, traffic crashes, and falls in 2020-2021; the burden of this excess non-COVID-19 mortality fell on non-Hispanic Black Philadelphians. Among younger non-Hispanic Black men, homicide and drug overdoses were responsible for 54% and 18% of excess deaths-more than COVID-19 (17%). For younger non-Hispanic Black women, drug overdoses accounted for 51% of excess deaths, whereas COVID-19 accounted for 40%.

Conclusions. Excess mortality was not solely caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; the causative agent of COVID-19), particularly at younger ages. Indirect pandemic mortality exacerbated prepandemic disparities by race/ethnicity.

Public Health Implications. Excess mortality as a result of non-COVID-19 causes may reflect indirect pandemic mortality. National cause-of-death data lag behind local cause-of-death data; local data should be examined as an early indication of trends and disparities. Public health practitioners must center health equity in pandemic response and planning. (AmJ Public Health. 2022;112(12):1800-1803. https:// doi.org/10.2105/AJPH.2022.307096)

The COVID-19 pandemic caused a dramatic increase in mortality, but not all of this excess mortality is directly attributable to infection with severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2; the causative agent of COVID-19).1 The pandemic caused profound disruptions in society, which may have led to excess mortality indirectly related to the virus. Researchers have speculated about these indirect pathways-such as interruptions in health care2,3 and worsening mental health4-but so far, little work has studied excess mortality as a result of non-COVID-19 causes.

In this study, we estimated excess mortality as a result of non-COVID-19 causes of death in Philadelphia, Pennsylvania. Past studies have documented differences in COVID-19 mortality by sex,5 age,6 and race/ethnicity7,8; we therefore compared mortality by these demographic characteristics to see if this was also the case for non-COVID-19 mortality. National cause-of-death data lag behind local cause-of-death data; these data from Philadelphia- the sixth largest US city-provide a timely estimate of trends and disparities in mortality for 2020-2021.

METHODS

Data are from Pennsylvania's vital registration system. We used final 2018-2019 death files, combined with preliminary 2020-2021 files (updated June 30, 2022), to examine mortality in Philadelphia from January 1,2018, to January 1, 2022. Deaths are reported with a delay; for more details, see section 1 of Appendix (available as a supplement to the online version of this article at http://www.ajph.org). We calculated excess mortality rates with denominators from the US Census Bureau's 2021 Annual County Resident Population Estimates.

Following Todd et al.,9 we trained Poisson models of weekly mortality on 2018-2019 data, stratified by age, sex, and race/ethnicity and allowing for seasonal trends. Our past work examined all-cause mortality through 20209; here, we added cause-specific mortality from the most common pre-COVID-19 causes of death (heart disease, cancer, injury [disaggregated into homicide, drug overdoses, traffic crashes, and falls], cerebrovascular disease, diabetes, septicemia, influenza and pneumonia, chronic respiratory diseases, and chronic kidney diseases) and data through 2021. (See section 2 of online Appendix for model details.) We then used these models to estimate expected cause-specific mortality from March 15, 2020, to January 1,2022 by sex (male, female), age group (< 50 years old, >50 years), and race/ ethnicity (non-Hispanic Black, nonHispanic White; other categories omitted because of small counts). We compared expectations with observed deaths to obtain estimates of causespecific excess mortality. All deaths as a result of COVID-19 were considered excess deaths. We conducted the analysis using R 4.1.1 (R Foundation for Statistical Computing, Vienna, Austria).

RESULTS

There were 5963 excess deaths from all causes between March 15, 2020, and January 1,2022, representing 23% more deaths than predicted (Table A, available as a supplement to the online version of this article at http://www.ajph.org); 4469 (75%) ofthese excess deaths were directly attributable to COVID-19. Among non-COVID-19 causes of death, the greatest proportional increases above expectations occurred for deaths caused by traffic crashes (53% more deaths than expected), homicide (51%), and diabetes (41%). Significant increases above expectations were also observed for deaths caused by falls (22%), drug overdoses (16%), and heart disease (6%). As the most common cause of death, heart disease was responsible for the largest number of excess deaths (n 5 375) of any non-COVID-19 cause, despite only a modest percentage increase. Homicide was responsible for the second largest number of excess deaths (n = 327), followed by drug overdose (n = 272) and diabetes (n 5 244). As less common causes of death, traffic crashes and falls accounted for 95 and 53 excess deaths, respectively. There was a decrease below expectations for deaths from chronic respiratory diseases (9%, or 89 fewer than expected). Observed deaths were not significantly different from expectations for cancer, kidney disease, pneumonia and influenza, stroke, or septicemia.

Excess mortality was not distributed equally; the burden fell more heavily on non-Hispanic Black Philadelphians than non-Hispanic White Philadelphians. Figure A (available as a supplement to the online version ofthis article at http://www.ajph.org) shows excess deaths per 100 000 from all causes by sex, age group, and race/ethnicity. There was significant excess mortality among adults aged 50 years and older in all sex-race groups. However, at younger ages, only non-Hispanic Black men and women experienced excess mortality (241 and 70 excess deaths per 100 000, respectively), whereas non-Hispanic White women and men did not experience significant excess mortality.

Figure 1 disaggregates excess mortality for age-sex-race/ethnicity groups by cause. Only causes of death for which the number of deaths was significantly different from expectations are labeled; see Table B (available as a supplement to the online version ofthis article at http://www.ajph.org) for complete counts. Forthose aged 50 years and older, COVID-19 was overwhelmingly responsible for excess mortality: there were 1142 COVID-19 deaths per 100 000 for older non-Hispanic Black men (representing 66% of excess deaths for this group), 859 per 100 000 for older non-Hispanic Black women (79% of excess deaths), 855 per 100 000 for older non-Hispanic White men (97%), and 661 per 100 000 for older non-Hispanic White women (over 100%, a figure that might be attributable to declines from other causes). For older non-Hispanic Black men, there was significant excess mortality from heart disease, drug overdoses, diabetes, and traffic crashes. Among older non-Hispanic Black women, mortality from heart disease and drug overdoses significantly exceeded expectations. For older non-Hispanic White men, diabetes was the only significant nonCOVID-19 contribution to excess mortality. Older non-Hispanic White women also experienced significant excess mortality from diabetes, but this was more than offset by significant reductions in mortality from chronic respiratory diseases, possibly because of COVID-19 mitigation strategies like social distancing and masking. For Philadelphians aged younger than 50 years, the contribution of COVID-19 to excess mortality was far more modest. Among young nonHispanic Black men, COVID-19 was only the third leading cause of excess mortality (40 excess deaths per 100 000; 17% of excess deaths), trailing behind homicide (131 per 100 000; 54%) and drug overdoses (45 per 100 000; 18%). Traffic crashes also significantly contributed to excess mortality for young non-Hispanic Black men. For young non-Hispanic Black women, drug overdoses contributed more to excess mortality (35 per 100 000; 51% of excess deaths) than COVID-19 (28 per 100 000; 40%). There was no significant all-cause excess mortality among young non-Hispanic White men and women; excess COVID-19 deaths were offset by lower-than-expected mortality from drug overdoses and heart disease.

DISCUSSION

This study estimated cause-specific excess mortality during the COVID-19 pandemic in Philadelphia. In addition to deaths from COVID-19, there was significant excess mortality from heart disease, homicide, diabetes, drug overdoses, traffic crashes, and falls. The burden of non-COVID-19 mortality disproportionately affected older nonHispanic Black Philadelphians compared with older non-Hispanic White Philadelphians. Among younger nonHispanic Black Philadelphians, COVID-19 mortality was dwarfed by excess mortality from homicide and drug overdoses. Excess non-COVID-19 mortality may have resulted from interruptions in health care (for heart disease, diabetes, and drug overdoses), or from stress, anxiety, and mental strain (all causes). Although the number of traffic crashes in Philadelphia decreased in the first year of the pandemic, the number of fatalities increased, possibly because of excess speed amid reduced traffic volume.10 Although more research Is needed to understand why nonCOVID-19 causes of death contributed to excess mortality during the pandemic, our work shows that this excess mortality was substantial, and contributed to mortality disparities by race/ ethnicity.

PUBLIC HEALTH IMPLICATIONS

Preexisting racial mortality disparities were exacerbated by COVID-19.7 This study Is preliminary evidence that non-COVID-19 mortality during the pandemic further contributed to disparities, notably at younger ages, where the mortality risk from COVID-19 was small. This Is an urgent call to think broadly about the Impacts of COVID-19 on health and mortality and to center equity In pandemic response and preparedness planning. j4]PU

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CONTRIBUTORS

M. Todd originated and led the study. A. Scheeres conducted analyses. Both authors contributed to writing.

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The authors have no conflicts of interest to disclose.

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DETAILS

Subject:	Traffic accidents; Minority &ethnic groups; Crashes; Diabetes; Mortality; Regression analysis; Death &dying; Cardiovascular diseases; Race; COVID-19; Viral diseases; Ethnicity; Homicide; Pandemics; Fatalities; Registration; Health planning; Data; Diabetes mellitus; Drugs; Public health; Death; Coronaviruses; Regression models; Drug trafficking; Heart diseases; Severe acute respiratory syndrome coronavirus 2; Health disparities; Overdose; Black women; Black people
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Keeping Public Health Advocacy Strong

Bender, Kaye, PhD, RN [1] [1] Public Health Association

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FULL TEXT

I am often asked what keeps me up at night. My responses are varied, of course, but they include a myriad of issues. We have lost so much ground this year on women's reproductive rights. My heart aches for women and their families duringthistime of difficulty. Our rural communities are still hurting and have had little to no authentic attention to their needs, despite what the spotlights of the COVID-19 pandemic and the opioid crisis have shown. Rural health is a major public health issue that requires concerted coordination between the federal, state, and local governments as well as the public in general to address.

We simply cannot keep assuming it is "just the way it is." We have begun to make progress on climate change but only after years of not being able to have those discussions openly, much less adequate funding to address it. Our public health workforce is eager to work on this issue in whatever ways best resonate with their communities. The increase in gun violence in our country is a symptom of deeper issues that desperately need attention so that we do not keep losing young members of our communities.

Being elected as the president of the American Public Health Association (APHA) is one of the most awesome gifts that one can be given. Serving in this capacity in 2022, I was able to travel to several state public health association meetings and to interact directly with colleagues from all over the country. I was committed to encouraging the public health workforce after their long and seemingly never-ending challenges of the pandemic. I found them to be exhausted mentally and physically from the pandemic's demands but also dedicated to public health going forward. Although I recognize that we have lost vital members of our workforce during this time, we still have many who are excited about the public health mission in their jurisdictions and are gearing up for the next challenges. I am heartened by that enthusiasm!

I support the national reports that recommend changes to our public health system and support to our public health workforce going forward (https://bit.ly/3LNha0a; https:// bit.ly/3CafqtR; https://bit.ly/3SI2kut). May these reports lead to action that positively affects our state and local public health systems, and may those changes begin to happen soon.

I am also heartened by the students and graduates who have entered the profession with a new way of thinking and a commitment to making public health better and stronger. Our state affiliates have strong student membership numbers, or they are working on achieving them. That strengthens my faith in those who will be our leaders in the future!

Finally, if we really are committed to the social determinants of health, we must address the issues that affect public health locally. Clean water, accessible health care, accessible public education, good roads and public transportation, and political will to consider the health of all of the people living in our country are basics. We cannot take our eyes offthe ball. The APHA's incoming president, Chris Chanyasulkit, PhD, MPH, often says that voting matters, and she is right. As APHA members and public health professionals, we have to consider all of the factors that affect public health and not lose our strong advocacy forthose issues. We still have much work to do.

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Suicide and the Solitary Life: Differential Risks of Living Alone Across Sociodemographic Groups

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ABSTRACT (ENGLISH)

At 77 years old, even after decades of prodigious philanthropy, George Eastman remained one of the wealthiest men in the world. The unmarried founder of Eastman-Kodak lived alone until March 14,1932, when he revised his will in the presence of his lawyers, dismissed them from his study, folded a wet towel over his chest, and shot himself through the heart with his desk drawer revolver.1 His obituary reported, "A sense of loneliness encompassed George Eastman, after the recent deaths of two of his closest friends, and led him to take his own life."2(p5)

Living alone, loneliness, and social disconnection have been proposed as suicide risk factors since the dawn of suicidology.3 However, a lack of predeath data on large samples of suicide decedents has prevented us from knowing the demographic characteristics of those at highest increased risk when living alone. A new study by Olfson et al. in this issue of AJPH (p. 1774) contributes evidence of the association between living alone and suicide as it varies across demographic and socioeconomic subgroups. The authors reviewed the 2008 American Community Survey, which includes more than 3 million adults linked to the National Death Index, to identify suicide deaths over the 11 succeeding years. The participants reported on their living situation as well as sociodemographic characteristics, self-reported disability, and housing information, including residential stability and homeownership. Olfson et al. found the annual suicide rates of adults living alone to be almost twice that of adults living with others, confirming previous reports.4,5 The authors went on to identify large differences in the strength ofthat association across specific subgroups. The associations between living alone and subsequent suicide were found to be strongest among wealthy, well-educated, male, White, and older age groups. Membership in some of these groups was previously known to independently increase suicide risk,6 and their strong associations with living alone is tragically reminiscent of George Eastman. However, the recognition of low social integration as a risk factor for suicide dates back most prominently to Emile Durkheim's investigations in the 19th century.

FULL TEXT

At 77 years old, even after decades of prodigious philanthropy, George Eastman remained one of the wealthiest men in the world. The unmarried founder of Eastman-Kodak lived alone until March 14,1932, when he revised his will in the presence of his lawyers, dismissed them from his study, folded a wet towel over his chest, and shot himself through the heart with his desk drawer revolver.1 His obituary reported, "A sense of loneliness encompassed George Eastman, after the recent deaths of two of his closest friends, and led him to take his own life."2(p5)

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In his landmark book Suicide, Durkheim cited the 1886 French census in pointing out that the lower the average number of persons living in the family home, the higher a region's suicide rate.3 He raised this as a central tentpole of his theory of "egoistic" suicide, which is undertaken by those who see themselves as alone or disconnected from socially integrated groups. Egoistic suicide is thought to be more common in less socially integrated communities but is also noted to be associated with certain types of individuals in a given society. For instance, Durkheim posited that being unmarried or widowed was associated with increased suicide risk. This went against the earlier belief that marriage was the higher risk state, a finding that resulted from past failure to adjust for age in comparing married to unmarried individuals.

Like Olfson et al., Durkheim also related suicides of social isolation to the attainment of knowledge and education, although he did so indirectly by pointing to differential levels of education in distinct religious groups and their associated suicide rates at the time. He credited the higher rates of suicide among Protestants to their greater "pursuit of free inquiry" and learning compared with Catholics, who had a much lower suicide rate. Durkheim argued that this free inquiry steered some Protestants further from their church communities, resulting in weakened community bonds and more vulnerability to suicide. He further performed some intellectual gymnastics to explain the lower rates ofJewish suicides, despite higher levels of education, as evidence thatJewish education is in line with their religious doctrine and so serves to further socioreligious integration. However, in view of our modern understanding of stigma, it may be more likely that the stronger condemnation of suicide byJewish and Catholic leaders provides a better explanation for the lower suicide rates in those groups.

Aside from education level, Olfson et al. found the strongest association between living alone and suicide existed in high earners. In general, suicide risk is greater in persons experiencing poverty or homelessness.7 However, in the context of living alone, Durkheim suggested an explanation for increased suicide among the wealthy. He theorized that the wealthy depended less on others for material support and, thus, felt less invested in the larger community. Durkheim wrote that for most, interdependency in a group creates a reciprocal investment in others that prevents one from being overwhelmed by one's own troubles and contextualizes them in larger communal joys, hopes, and a future. This allows a suffering individual to "share in collective energy and support his own when exhausted." By contrast, the wealthy individual may feel they owe society nothing and "have no reason to endure life's sufferings patiently."3(p168)

The recognition of social integration as suicide prevention did not end with Durkheim. Thomas Joiner's interpersonal theory of suicide6 incorporated the concept of "thwarted belongingness" in recognition of the increased riskofan unmet need to belong. Thwarted belongingness is thought to partially explain the association between suicide and living alone8 as well as its associated corollary, loneliness.4 Rory C. O'Connor's integrated motivational-volitional model of suicide continued to develop this idea by highlighting loneliness as a key moderator between a sense of entrapment and subsequent suicidal acts.9 These theories persistently recognize the importance of social integration because being alone continues to be identified as a risk factor for suicide both directly and as a contributor to mood disorders.4

Although the psychological impact of living alone and loneliness may add to suicide risk, there are also practical considerations to account for when considering the risks of living alone. In a secondary analysis, Olfson et al. found that the association between living alone and suicide varied significantly by suicide method. Poisoning, which accounts for most suicide attempts in the United States but a minority of suicide deaths,10 demonstrated the strongest association. In comparison, for firearm suicides (the most common method of US suicide), living alone was less strongly related to suicide risk. This may be unsurprising, given that suicide attempts by poisoning leave time and opportunity for rescue by a housemate, whereas in firearm suicide attempts, rescue is usually impossible. Safety planning interventions recognize access to lethal means as a prominent risk and suggest the use of social contacts both for emergency support and for making the environment safer by eliminating access to lethal means.11 A recent study of veterans found that lack of social contacts on the safety plan was associated with more than double the risk of subsequent suicidal acts, further highlighting the role of social integration in practical safety considerations.12

Of note, this study was unable to exclude some important potential confounders ofthe association between living alone and suicide. Psychiatric illness, a major risk factor that was largely underappreciated by Durkheim, could not be reliably measured in this sample. Mood, anxiety, and substance use disorders have been independently associated with both suicide and living alone,6,13,14 and so we cannot be certain that there is a causal relationship between living situation and subsequent suicide without these diagnoses included as covariates. However, as the authors point out, several previous studies have found that the association holds even when psychiatric morbidity was included in the models.4,5

The findings of Olfson et al. bolster more than a century of work underlining social isolation's association with suicide. By focusing on the objective measure of living alone, as opposed to the more difficult to quantify and evaluate concept of loneliness, the authors present clinicians with a potential risk factor that is easily identified in patients and can be integrated into existing risk stratification strategies. Beyond that, living alone is a modifiable risk factor that can be addressed by public health and social work interventions, much as we can address other major suicide risk factors, such as poverty, psychiatric illness, and lethal means access.

Sidebar

CORRESPONDENCE

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CONFLICTS OF INTEREST

The author has no conflicts of interest to declare.

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The 2016 Presidential Election, the Public Charge Rule, and Food and Nutrition Assistance Among Immigrant Households

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ABSTRACT (ENGLISH)

Objectives. To investigate whether the 2016 US presidential election and the subsequent leak of a proposed change to the public charge rule reduced immigrant families' participation in food and nutrition assistance programs. Methods. We used nationally representative data on n = 57 808 households in the United States from the 2015-2018 Current Population Survey-Food Security Supplement. We implemented difference-in-difference-in-difference analyses to investigate whether the election and proposed rule change produced decreases in immigrant families' participation in food and nutrition assistance programs and whether such decreases varied according to state policy generosity toward immigrants. Results. Findings indicate significant and large decreases in Supplemental Nutrition Assistance Program, School Breakfast Program, and National School Lunch Program participation among immigrants in moderately generous states but no changes to receipt of food assistance from nongovernmental sources orto household food insecurity. Conclusions. Both anti-immigrant rhetoric and the perceived threat of policy enactment can be enough to produce chilling effects that have potentially serious implications for the health of immigrant households and thus the health of the nation. (Am J Public Health. 2022;112(12):1738-1746. https://doi.org/10.2105/AJPH.2022.307011)

FULL TEXT

Headnote

Objectives. To investigate whether the 2016 US presidential election and the subsequent leak of a proposed change to the public charge rule reduced immigrant families' participation in food and nutrition assistance programs.

Methods. We used nationally representative data on n = 57 808 households in the United States from the 2015-2018 Current Population Survey-Food Security Supplement. We implemented difference-in-difference-in-difference analyses to investigate whether the election and proposed rule change produced decreases in immigrant families' participation in food and nutrition assistance programs and whether such decreases varied according to state policy generosity toward immigrants.

Results. Findings indicate significant and large decreases in Supplemental Nutrition Assistance Program, School Breakfast Program, and National School Lunch Program participation among immigrants in moderately generous states but no changes to receipt of food assistance from nongovernmental sources orto household food insecurity.

Conclusions. Both anti-immigrant rhetoric and the perceived threat of policy enactment can be enough to produce chilling effects that have potentially serious implications for the health of immigrant households and thus the health of the nation. (Am J Public Health. 2022;112(12):1738-1746. https://doi.org/10.2105/AJPH.2022.307011)

Shortly after the 2016 US presidential election and following a campaign by Donald Trump characterized by a decidedly hostile tone toward immigrants and their families,1,2 a draft of a Trump administration executive order was leaked that proposed changes to the public charge rule. For immigrants applying for legal permanent residence, this change would have greatly expanded the number of public assistance programs for which previous receipt of benefits could be counted in determining whether they were likely to become a future public charge, a designation that could lead to a rejection of their applications.3 In addition to federal cash assistance and public longterm care, which had long been used in the public charge determination, the 2016 proposed change would have included use of programs such as the Supplemental Nutrition Assistance Program (SNAP), Medicaid, and federal housing assistance (although not federal school meals programs).4 Early wellpublicized drafts ofthe rule change also suggested that the participation of family members such as US-born children would also be newly used in the public charge determination.5

Based in part on decreases in participation in public programs that followed the 1996 Personal Responsibility Work Opportunity Reconciliation Act (PRWORA; Pub L No. 104-193),6 which eliminated eligibility for public assistance for most legally resident immigrants,7 both the 2016 election and the proposed rule change generated renewed concern about "chilling effects."8 In a legal context, =this term typically describes "undesirable discouraging effects or influences." Here we use the term to mean immigrants foregoing public benefits to which they were legally entitled. Indeed, complementing media coverage, researchers found that the leak of the proposed rule changes was associated with sizable decreases in SNAP participation among recent immigrant families with younger children9 and Medicaid participation in counties with larger noncitizen populations. When a modified version ofthe public charge rule change was eventually implemented in December 2018, researchers found that 20% of lowincome immigrant adults reported avoiding a public benefit program because of perceived threats to their residence status.10 There was also evidence of largescale avoidance of SNAP and Medicaid by immigrant essential workers.11

Unlike in 1996, there were no immediate changes to eligibility for public benefits in the early days ofthe Trump presidency. Rather, the leaked draft executive order outlined changes to the public charge rule that would create potentially serious consequences for the receipt of federal public assistance. This, coupled with increasingly harsh rhetoric and other executive orders that targeted immigrants,12 led to renewed fear of decreases in program participation. In addition, misinformation and confusion propagated in part by news media appeared to have added to hesitation about participating in public assistance.13,14

Nonetheless, an important insight from research on PRWORA is that the experience of chilling effects is likely to vary by the composition of immigrant households.15 For instance, studies reported that there were pronounced decreases in program participation among mixed status households (those with citizen children and noncitizen adults),16,17 though other research indicated that these decreases may have been because of changing food stamp benefits rates15 and changes to naturalization.7 PRWORA era research also signals the importance of state policies to the potential for chilling effects. In the late 1990s, some states provided benefits to immigrants in response to their loss of eligibility for federal programs, which lead to reductions in program participation.18,19

Building on recent evidence9-11,14,20 and this previous research, we provide a definitive assessment ofthe effects of the 2016 election and the leak ofthe proposed public charge rule change on immigrant families' food insecurity and federal food and nutrition assistance use. To our knowledge, our study is the first to do so using nationally representative data on US households. We consider the effects ofthe 2016 election and the rule change leak on mixed status households and whether any effects vary by states' generosity in providing benefits to immigrant households.

As with previous research,7,16,17 we expected to see the strongest chilling effects in mixed status households (i.e., those with noncitizen parents and citizen children) because they might especially fear the serious disruptions an adverse public charge determination would cause. While actual changes in eligibility may have driven behavior after

PRWORA, we investigated instead whether an increased climate of antiimmigrant sentiment and a proposed change to policy suppressed participation. Furthermore, we hypothesized that states' generosity toward immigrants in 2016 might have actually encouraged a retreat from federal benefits if immigrant households believed they could switch to a state program in lieu of a federal one.

METHODS

We used data from the Current Population Survey (CPS)-Food Security Supplement (FSS). Each month, the CPS is administered to a national sample of households, which are representative ofthe noninstitutionalized US population. The FSS is administered each December and contains detailed data on household food expenditures and the use of both governmental and nongovernmental food assistance.

Using the Integrated Public-Use Microdata Series,21 we constructed a preliminary analytic sample of n 5 150 853 households using data from the 2015 to 2018 waves ofthe CPS-FFS, a period including the 2 years before the 2016 election (2015-2016) and the first 2 years of Trump's presidency (2017-2018). To focus on those most likely to take advantage of governmental programs and nongovernmental aid, we dropped n = 91213 families with incomes greater than $40 000 per year. Finally, we dropped n = 1810 households in which no members were citizens. Our final analytic sample had n 5 57 808 households and subsamples of n 5 10 832 and n 5 10 811 households with school-aged children (aged 5-17 years) in our respective analyses ofthe National School Lunch Program (NSLP) and the School Breakfast Program (SBP).

Measures

Outcomes. We coded variables indicating participation in multiple federal food and nutrition assistance programs. First, we created a dichotomous measure of participation in SNAP, the largest ofthe US Department of Agriculture's (USDA's) food and nutrition assistance programs,22 coded as 1 for households who had received SNAP benefits since December of the previous calendar year and 0 otherwise. Next, for households with school-aged children, we created additional dichotomous indicators for whether respondents reported that children in the household received free or reducedprice meals from the NSLP or SBP in the past month. We coded receipt of food assistance from nongovernmental sources as 1 if respondents reported that anyone in the household had gotten emergency food from a church, food pantry, or food bank or had eaten at a soup kitchen in the past month. Finally, and based on the 18-item Food Security Module, which is included in the CPS-FFS, we used USDA guidelines23 to create a 0-1 indicator for household food insecurity over the previous 12 months. We provide full information about the construction of these and other key variables in Appendix A (available as a supplement to the online version of this article at http://www.ajph. org). Table 1 provides descriptive information on all study variables.

Household citizenship status. We assigned CPS-FFS households to 1 of 3 categories: all-citizen, noncitizen, and mixed status households, in which some members were citizens and others were not. However, preliminary analyses showed divergent preelection trends in our outcomes of interest between noncitizen households and the 2 other groups, indicating a violation of a key assumption undergirding our analytic approach.24 For this reason, we elected to drop noncitizen households from our analyses.

State generosity. Based on previous research,15,19,25 we measured the number of assistance programs (0-3) that states had established for immigrants as of 2017. Specifically, we measured whether immigrants were eligible for (1) state food and nutrition assistance programs (n = 6 states in 2017), (2) state replacement for the federal Supplemental Security Income program (n 5 5 states), and (3) state replacement for the federal Temporary Assistance for Needy Families program (n = 22 states). In addition, we coded whether states had chosen to take up the federal option to expand Medicaid and Children's Health Insurance Program coverage to immigrant families who had been in the country for fewer than 5 years (n = 32 states). We coded states as less generous if they had not adopted any of these policies (n = 14), as moderately generous if they had adopted 1 or 2 policies (n = 29), or as most generous if they had adopted 3 or 4 of these policies (n = 7).

Covariates. In all analyses, we controlled for potential confounders, including respondent race/ethnicity, labor force participation, marital status, education level, household size, age, family income, and an indicator for whether household income was below 185% of the US Census Bureau's poverty thresholds in the appropriate survey year

(2015-2018). We also included a standardized index (a 5 0.821; mean = 0; SD = 1) of statebased controls using data from the University of Kentucky Center for Poverty Research National Welfare Database.26 We lagged all measures by 1 year before including them in the index.

Statistical Analysis

We used difference-in-difference-indifference (DDD) analyses. Difference-indifferences (DD) approach is a commonly adopted quasiexperimental method used to generate causal estimates of policy changes or other interventions. The central insight of the approach was that we could detect chilling effects by comparing changes in program participation rates for mixed status households before and after the 2016 election (the first difference) while accounting for whatever secular changes occurred in the outcome over the same period among citizen households (the second difference), whose program participation was unlikely to be affected by the election or proposed change to the public charge rule. In our analyses, we extended this basic DD approach by examining whether effects were more or less pronounced among immigrant households living in states with policies that were more generous to immigrants. In these models, our DDD estimates were the difference between the DD for mixed status families in moderate- and highgenerosity states and the DD for mixed status families in low-generosity states. These analyses allowed usto investigate potential chilling effects after accounting for secular trends among citizen households and among mixed status households in the lowest generosity states, whose participation in public programs may have been unaffected by the election and proposed rule change.

We implemented our DDD approach using linear regressions24 that included 3-way interactions between time (0 5 2015/16,1 5 2017/18), the indicator for household mixed status, and state policy generosity (i.e., less, moderate, most). For all analyses, we included controls for the variables described in the Covariates section, clustered our SEs at the state level, and used probability weights supplied in the CPS-FFS to generate nationally representative estimates. We examined outcome trends before 2016 and used event study analysis to test the parallel trends assumption for each of our outcomes. We also conducted a series of sensitivity analyses, rerunning our analyses using probit models to assess whether our results varied depending on functional form, and again after including state and year fixed effects as a further check against bias from endogeneity. We completed all analyses using Stata version 16 (StataCorp LP, College Station, TX).

RESULTS

Unweighted descriptive statistics are shown in Table 1. Over the study period, 20.3% of all sample households had received SNAP benefits in the previous calendar year, 11.0% had received some type of nongovernmental food assistance, and 22.4% were food insecure over the previous year. More than half of households with school-aged children reported participation in the NSLP (59.7%) and the SBP (51.7%).

Results from our parallel trends and event study analyses in Appendix B (available as a supplement to the online version of this article at http://www.ajph. org) do not reveal any meaningfully different pre-2016 group trends for any of our outcomes. Weighted results from our DDD models with our analytic sample of CPS-FFS households are presented in Table 2. The table shows parameter estimates for our primary study variables and their interactions. The primary results of interest are the DDD estimates, which we show in the final rows of the table. Full regression results for all models are available on request.

Table 2 shows that the 2016 election and leakofthe proposed rule change produced decreases in SNAP participation among mixed status households in states with moderately or most generous policies, as hypothesized. The predicted size of these decreases was quite large, 7.3 and 6.8 percentage points, respectively. Similarly, DDD estimates indicated decreases in NSLP participation of 12.6 percentage points and SBP participation of 16.0 percentage points among mixed status households in moderate generosity states. Parameter estimates for NSLP and SBP participation for mixed status households living in the most generous states were negative but not statistically significant.

Notably, despite decreases in participation in 3 national nutrition programs, the 2016 election and leak of the proposed rule change did not result in significant changes to household food insecurity for mixed status households. To assess whether the lack of significant findings was related to our definition of household food insecurity and taking advantage of the 10 adultreferenced and 8 child-referenced questions in the USDA Food Security Module, we reran our models using past-month and past-year household, adult, and child food insecurity (results available on request). Across all of these models, we found no evidence that the 2016 election or the leak of the proposed rule change had any significant impact on food insecurity. Likewise, we found no evidence of chilling effects for receipt of nongovernmental food aid.

Table 3 presents the results of our sensitivity analyses. For interpretability, the table presents only DDD parameter estimates. For each outcome, the first column presents again the results from our main analyses. Across outcomes, the results shown in the table indicate that our main results are not sensitive to assumptions about functional form and are not biased because of unobserved characteristics of states or years of measurement. In fact, Table 3 indicates strong consistency of both pattern and magnitude of parameter estimates. The sole exception is minor: the parameter estimate for SNAP participation in the most generous states from the probit model, which just misses the cutoff for statistical significance (P = .054).

DISCUSSION

To our knowledge, this study is the first to use nationally representative data to investigate whether the 2016 presidential election and subsequent leak of a proposed change to the public charge rule resulted in chilling effects in immigrant households' participation in food and nutrition programs. Building on intuition developed in earlier, PRWORA era research, we pooled data from 2 years before and 2 years after the election and used DDD models to assess whether the election and proposed rule change produced changes in household food insecurity and in the receipt of SNAP, school meal programs, and nongovernmental food aid that varied by state policy generosity.

Similarto previous work,11'14'20 our most consistent findings are for mixed status households living in states that had adopted a moderately generous set of policies toward immigrants. For this group, we found that the combination of the 2016 election and the proposed rule change produced sizable decreases in SNAP participation (-7.3 percentage points), NSLP participation (-12.6 percentage points), and SBP participation (-16.0 percentage points). Compared to participation rates in SNAP (20.3%), NSLP (59.7%), and SBP (51.7%), participation rates in our sample of low-income households, these estimates represent substantial and serious decreases in participation in 3 of the primary federal programs to fight food insecurity among households with children. It is surprising, then, that our analyses did not find any change in household food insecurity for mixed status households in these states. One explanation might be an increased propensity for immigrant households to receive food assistance from nongovernmental sources. However, our analysis found no change in receipt of food from nongovernmental sources such as churches, food banks, food pantries, or shelters. A further explanation is that mixed status households turned to informal social supports to help meet food needs and thus were able to stave off increases in food insecurity. Unfortunately, the FSS does not collect information on these types of supports, and so we could explicitly test for this possibility.

Even if immigrants turned to such supports, it is unlikely this aid would be consistent enough over time to completely prevent food insecurity if decreases in participation are sustained overtime. Furthermore, even if eventual impacts on food insecurity are not realized, decreases in participation in SNAP and the 2 school meal programs are highly concerning in light of a growing body of research finding additional benefits to participation in these programs.27-31 Complementing other research on the 2016 election,9-11'20 our findings point to serious and ongoing negative impacts on public health related to anti-immigrant rhetoric and policy proposals that threaten the security of immigrant households.

Unexpectedly, we found little evidence of chilling effects for mixed status households in the most generous states, where we might have expected reductions in participation to be greatest. The only evidence was a significant decrease in SNAP participation of 6.8 percentage points, although post hoc analysis indicated that this effect was not significantly different from the decrease for mixed status households in moderately generous states. Similar post hoc tests indicate that-although not significantly different from zero- the predicted decreases in NSLP and SBP participation for the most generous states were also not significantly different from those for moderately generous states. Although derived from previous work,18,19 it may thus be that our system for classifying state generosity did not meaningfully distinguish between moderately and most generous states. Indeed, when we replicated our analyses by collapsing the moderately and most generous categories into 1 group,the pattern ofresults (available on request) was largely consistent. Thus, an important implication of this study is the need for policy researchers to continue to explore how the effects of national policy changes (or threats of policy change) interact with state-level policies and behaviors to affect health outcomes.

Limitations

Our study's results must be interpreted in the context of its limitations. Although we implemented a quasiexperimental approach that can control for unobserved heterogeneity, we relied on observational data and thus cannot definitively rule out potential bias. Furthermore, the limitations of survey data for analyzing program participation are well recognized. For this study, a particular additional challenge is the possibility that chilling effects are also realized in immigrant households' responses to survey questions. That is, immigrants fearing surveillance may have been less likely to report participation in government programs even if their actual behavior did not change. Although we do not consider this possibility very likely, both of these limitations underscore the importance of using administrative data on program participation to replicate the analyses and findings reported here. Furthermore, we are unaware of any other comparable national data source that contains detailed information on our key study variables that does not rely on survey data. Finally, although we believe that our study design adequately captures the joint effects of the 2016 election and leaked proposed public charge rule change, it may be that other anti-immigrant actions by the Trump administration were responsible for some of the findings reported here.

Public Health Implications

A key implication of our findings is that rhetoric and the perceived threat of policy change are enough to produce chilling effects, prompting serious concern at further recent efforts targeting immigrants, such as eliminating sanctuary cities, family separation, and rescinding the Deferred Action for Childhood Arrivals program. Although most ofthese policies (includingthe public charge rule change) were challenged in court and were either not implemented or modified, it may be difficult to definitively determine their impact on immigrant well-being.

In the meantime, immigrant households, especially those with children, continue to experience higher levels of food insecurity.9,32 Immigrants account for more than a quarter of the US population, and the health of the nation is inextricably linked to their well-being.33 Absent efforts to systematically counteract the negative effects of rhetoric or policies that protect or restore access to public benefits, the utility of many national public health campaigns will likely be limited.

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D. P. Miller and R. S. John conceptualized the study design and shared primary writing responsibilities. R.S.John led and D.P. Miller, M. Yao, and M. Morris contributed to data preparation and analysis. M. Yao and M. Morris contributed writing. All authors reviewed and approved the finalversion.

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The authors do not have conflicts of interest from funding or affiliation-related activities.

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This study used de-identified secondary data, so it was exempt from institutional review board review.

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The Harmful Impacts of Anti-Immigrant Policies on Maternal and Child Health

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ABSTRACT (ENGLISH)

In January 2017, a draft executive order leaked that aimed to limit an immigrant's ability to gain lawful permanent residence status if they used public benefits, including Medicaid and the Supplemental Nutrition Assistance Program (SNAP). This policy was then included in a proposed regulation issued in 2019 that was implemented in February 2020. In a new study by Wang et al. (p. 1747 in this issue of AJPH), the leak of the draft executive order was found to be associated with delayed Medicaid enrollment and adverse maternal and child health outcomes in New York State. Sadly, these are not isolated findings, as these results align with previous research on the multifaceted challenges immigrants experience in accessing health care in the United States.1

High-quality health care is important for optimal maternal and child health outcomes, particularly throughout the stages of pregnancy (i.e., preconception, prenatal, and postpartum).2 Disparities among immigrant women in access to pregnancy-related services have been well documented: immigrant women are less likely to have a usual source of care and are more likely to have inadequate and delayed initiation of prenatal care3 than are US-born women. Immigrant mothers to-be encounter structural inequities, including language and cultural barriers, adverse or unequal treatment, financial burdens, and anti-immigrant policies, that are collectively associated with adverse birth outcomes.4 The Wang et al. study analyzed one potential policy change- the public charge rule.

FULL TEXT

In January 2017, a draft executive order leaked that aimed to limit an immigrant's ability to gain lawful permanent residence status if they used public benefits, including Medicaid and the Supplemental Nutrition Assistance Program (SNAP). This policy was then included in a proposed regulation issued in 2019 that was implemented in February 2020. In a new study by Wang et al. (p. 1747 in this issue of AJPH), the leak of the draft executive order was found to be associated with delayed Medicaid enrollment and adverse maternal and child health outcomes in New York State. Sadly, these are not isolated findings, as these results align with previous research on the multifaceted challenges immigrants experience in accessing health care in the United States.1

High-quality health care is important for optimal maternal and child health outcomes, particularly throughout the stages of pregnancy (i.e., preconception, prenatal, and postpartum).2 Disparities among immigrant women in access to pregnancy-related services have been well documented: immigrant women are less likely to have a usual source of care and are more likely to have inadequate and delayed initiation of prenatal care3 than are US-born women. Immigrant mothers to-be encounter structural inequities, including language and cultural barriers, adverse or unequal treatment, financial burdens, and anti-immigrant policies, that are collectively associated with adverse birth outcomes.4 The Wang et al. study analyzed one potential policy change- the public charge rule.

PUBLIC CHARGE

As described by Wang et al., "public charge" was largely undefined in US immigration law since its implementation in 1882. It was not until 1999 that federal regulatory guidance provided a limited definition of public charge related to those who depended on federal benefit programs for their income or required long-term institutionalized care. In

January 2017, the presidential administration of Donald Trump proposed changing the definition of public charge simultaneously with other broad federal anti-immigration policies, such as accepting reduced numbers of refugees and banning noncitizens from several predominantly Muslim countries from enteringthe United States.

Although immigration policy is primarily a federal issue, states may further develop and implement policies that can either include or exclude immigrants.5 Exclusionary policies, at all levels of government, can contribute to systemic racism, and enforcement of these exclusionary policies has been found to have detrimental effects on immigrants and their families-as well as on US citizens, particularly those in mixed status households.6 For instance, US Immigration and Customs Enforcement raids have been found to be associated with a greater risk of preterm low birthweight among both US-born and immigrant Latina mothers.7 Furthermore, separate from specific policy initiatives, the 2016 US presidential election was found to be associated with an increase in preterm births among US Latina women,8 foreign-born Latina women (specifically with Mexican or Central American ancestry), and women from the Middle East and North Africa.9

In this context, Wang et al. found that, after the memo was leaked, noncitizen pregnant mothers were more likely than were citizen mothers to delay prenatal enrollment in Medicaid, and their infants were more likely to have lower birth weights than were infants of citizen mothers. Of note, these changes occurred in New York, a state that has historically had more inclusive health and welfare immigrant policies than have other states,5 suggesting that the adverse outcomes detected by Wang et al. may have been even worse in other states.

STRENGTHS AND LIMITATIONS

The strengths of the study include the authors' use of detailed data on health care enrollment and utilization and health outcomes from a large Medicaid program and multiple sensitivity analyses to probe the robustness of the results. It is not entirely clear whether the extent of prenatal coverage and care changes seen in the study were large enough to explain the observed changes in birth weight, although as the authors' note, research shows that psychosocial stressors themselves- such as a hostile policy environment- can be a contributing factor to adverse pregnancy outcomes.10

A few limitations of this study include missing data on citizenship status among many enrollees (as high as 30% in 2019), which appeared to increase overtime and could have confounded the findings, even after imputation for missing values. In addition, the fact that changes in outcomes for noncitizens began to appear even before the 2016 election raises some question about secular trends and the causal role of the January 2017 leak; however, previous analyses have suggested that anti-immigrant rhetoric during the 2016 presidential election campaign itself may have changed health care utilization and health outcomes for immigrants. Lastly, some of the findings on health outcomes depend on the model presented. For instance, the findings differ based on imputed versus nonimputed maternal citizenship status and New York City versus non-New York City enrollees. However, despite these limitations, the differential changes that Wang et al. observed between noncitizens and citizens in most models is highly suggestive of a link to the policy in question.

FEDERAL ACTION ADDRESSING DISPARITIES

Because immigrant health is shaped by the context of immigration policies, inclusive and protective policies for immigrants are important tools that may improve health equity. On September 8, 2022, the US Department of Homeland Security issued a final rule on new public charge regulations that would largely codify 1999 field guidance governing public charge determinations, but with some changes.11 This new rule allows eligible individuals to enroll, without harmful immigration consequences, in programs such as Medicaid (except for long-term institutionalization at government expense), the Children's Health Insurance Program, and SNAP.

Furthermore, immigrant-focused policies exist in a broader framework of policies and social determinants that affect the health and well-being of immigrant communities, which is evident in the current presidential administration's approach to a range of issues designed to increase health equity. President Joseph Biden signed Executive Order 14009, "Strengthening Medicaid and the Affordable Care Act" (January 28, 2021), and Executive Order 13985, "Advancing Racial Equity and Support for Underserved Communities Through the Federal Government" (January 20,2021), as part of a broader effort to address coverage gaps and structural inequities that disproportionately affect immigrants and other communities. This effort includes the implementation of the American Rescue Plan Act (Pub L No. 117-2; March 11,2021) provision that enables states to provide continuous Medicaid eligibility for 12 months after pregnancy and a comprehensive approach to addressing social determinants of health.12 In terms of access to coverage, although detailed information on insurance rates among immigrants is not yet available, national survey data in early 2022 showed that the US uninsured rate had reached its lowest level ever, indicating that there are now more than 5 million more US residents with health coverage than there were in 2020.13

As suggested by the study of Wang et al. and the wide-ranging related literature that preceded it, anti-immigrant rhetoric and policies are detrimental to society, as they contribute to increased psychosocial stress, lower access to care, and negative health effects, including adverse maternal and child health outcomes. Efforts by the current presidential administration are a step toward improving maternal and child health outcomes among immigrants residing in the United States. More broadly, these policies can help dismantle persistent health disparities, including those affecting the more than 40 million immigrants living in the United States. ÂfPU

Sidebar

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Both authors envisioned the framing of this editorial, contributed to its writing, and reviewed all drafts.

CONFLICTS OF INTEREST

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Community-Based COVID-19 Vaccine Clinics in Medically Underserved Neighborhoods to Improve Access and Equity, Philadelphia, 2021–2022

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ABSTRACT (ENGLISH)

Vaccination remains key to reducing the risk of COVID-19-related severe illness and death. Because of historic medical exclusion and barriers to access, Black communities have had lower rates of COVID-19 vaccination than White communities. We describe the efforts of an academic medical institution to implement community-based COVID-19 vaccine clinics in medically underserved neighborhoods in Philadelphia, Pennsylvania. Over a 13-month period (April 2021 -April 2022), the initiative delivered 9038 vaccine doses to community members, a majority of whom (57%) identified as Black. (Am J Public Health. 2022;112(12):1721-1725. https://doi.org/10.2105/AJPH.2022.307030)

FULL TEXT

Headnote

Vaccination remains key to reducing the risk of COVID-19-related severe illness and death. Because of historic medical exclusion and barriers to access, Black communities have had lower rates of COVID-19 vaccination than White communities. We describe the efforts of an academic medical institution to implement community-based COVID-19 vaccine clinics in medically underserved neighborhoods in Philadelphia, Pennsylvania. Over a 13-month period (April 2021 -April 2022), the initiative delivered 9038 vaccine doses to community members, a majority of whom (57%) identified as Black. (Am J Public Health. 2022;112(12):1721-1725. https://doi.org/10.2105/AJPH.2022.307030)

To improve COVID-19 vaccine access among medically underserved and vulnerable populations in Philadelphia, Pennsylvania, we implemented low-barrier vaccine clinics throughout Philadelphia, in collaboration with the Philadelphia Department of Public Health, the School District of Philadelphia, Philadelphia Parksand Recreation, faith-based institutions, community organizations, and professional sports organizations.

INTERVENTION AND IMPLEMENTATION

The University of Pennsylvania and the University of Pennsylvania Health Systems hosted large-scale COVID-19 vaccination clinics for Philadelphia residents in February 2021.1 In April 2021, when vaccine eligibility was expanded to include anyone aged 16 years or older, the Department of Family Medicine and Community Health began implementing community-based pop-up clinics in West and Southwest Philadelphia.

PLACE, TIME, AND PERSONS

The clinics targeted communities of color that faced financial and geographic barriers to vaccine access through health care centers and retail pharmacies and were primarily located in neighborhoods with low COVID-19 vaccination rates. From April 2021 to April 2022, we hosted 68 clinics in trusted neighborhood venues at the request of organizations with deep community ties. We typically aimed to host two clinics at three-week intervals to provide first and second doses. Our community-based hospital also maintained walk-in vaccine access five days a week.

PURPOSE

More than one third (33.7%) of the population of West Philadelphia is living in poverty, compared with 10.5% nationally.2 For many reasons (e.g., historic exclusion as a result of systemic racism, geographic barriers to access), Black adults and children have had lower COVID-19 vaccination rates than have those in White communities.3-5 The goal of this program was to implement frequent, low-barrier COVID-19 vaccine clinics in West and Southwest Philadelphia. We also aimed to promote patient choice by offering all available COVID-19 vaccinations (vs earlier mass vaccination efforts that typically offered single manufacturer vaccines).

Planning and Registration

We identified clinic locations through community partner requests and included K-12 schools, recreation centers, restaurants, religious institutions, and youth and athletic organizations. Requests exceeded our capacity to host clinics, so we prioritized locations that were accessible by public transit, were in low-vaccination neighborhoods, and had large indoor spaces to facilitate physical distancing. People could preregister via a text message-based system or walk in without appointments.1

Recruitment strategies included School District of Philadelphia-initiated robocalls and digital communications; SMS (short message service) campaigns in which all individuals who had previously registered for a vaccine clinic received a message in advance of our next clinic encouraging them to refer individuals for vaccination; physical and digital flyers shared with community partners; and virtual town halls with clinicians to answer questions.

Staffing

Clinics were staffed by volunteers who were recruited through listservs and personal outreach; volunteers signed up using a Web-based platform. Nonclinical volunteer roles included two operations leaders and five to 10 members of support staff (e.g., clinic navigation and registration). Clinical volunteers were Pennsylvania-licensed physicians, nurses, advanced practice providers, or pharmacists filling the following roles: one medical director, three to five vaccine preparation specialists, two to four postvaccine monitors, and five to 15 vaccinators. All vaccinators were required to complete a 10-minute Web-based training session before their first clinic. With clinical supervision, medical, dental, and pharmacy students also served as vaccinators. More than 500 staff members volunteered at 68 clinics, approximately 60% of whom were nonclinical and 40% clinicians.

Logistics

Clinics offered all COVID-19 vaccines approved formally or under US Food and Drug Administration emergency use authorization. Given the multiple manufacturers and doses available, we designed a color-coded system with safety protocols that included justin-time training and multiple built-in color-coded checkpoints to ensure that patients received the correct vaccine (Figure 1). Upon entry to the vaccination clinic, patients were assigned color-coded paperwork indicating their designated vaccine:

1. Pfizer Blue-Pfizer-BioNTech 0.3-milliliter (mL) dose for those aged 12 years and older (primary series and booster doses);
2. Pfizer Orange-Pfizer-BioNTech 0.2-mL dose for those aged five to 11 years;
3. Moderna Green-Moderna 0.5-mL dose for primary series;
4. Moderna Pink-Moderna 0.25-mL dose for booster (as of October 2021 approval); or
5. JNJ Yellow-Johnson &Johnson/ Janssen (primary series and booster doses).

Visual, written, and verbal communication all used the color-coded names. Vaccine storage, syringes, and labels were all similarly coded.

At check-in, patients received intake documents, including an emergency use authorization information packet, paper registration, and consent documents for patients younger than 18 years. Parents or guardians were required to accompany children aged five to 14 years receiving primary series and children aged 12 to 17 years receiving a booster. Parents or guardians of children aged 15 to 17 years receiving primary series were able to provide consent via telephone with an on-site physician.

Although the Philadelphia Department of Public Health allows minors aged 12 years and older to consent to their own COVID-19 immunization without the consent of a parent or guardian under an emergency use authorization, we included parent or guardian consent in our processes to prioritize community trust.6 After check-in, staff completed patient registration using a Web-based system, also serving as a second safety checkpoint to ensure that patients were assigned the correct vaccine. Because of the collection of protected health information, all registration and data input was completed on a secure, portable network connecting to a remote server.

Once check-in and registration were complete, patients were directed to a vaccine station. Clinicians displayed a "READY" sign to let volunteers know they were available to vaccinate the next patient. Vaccine vials were held in baskets of the assigned corresponding color. Before vaccination, clinicians completed a final confirmation ofvaccine type with color-coded syringes. After vaccine administration, patients were directed to complete 15 to 30 minutes of clinical observation. Patients were not permitted to leave the clinic until the observer collected their registration paper and documented the time of observation completion.

EVALUATION AND ADVERSE EFFECTS

From April 2021 to April 2022, our team vaccinated 9038 patients across 68 clinics (Table 1). Most patients were Black/African American (57%), followed by White (23%), and Asian (7%); 59% of patients were aged 19 to 64 years, and nearly one quarter (24%) were aged five to 18 years. In the same period, the proportion of fully vaccinated residents in our eight target zip codes increased from 16% (50 627) to 62% (196 343) of the population-a 288% increase.7 We cannot attribute this total gain to our clinics because there were other vaccine providers in the area (e.g., select retail pharmacies). Nonetheless, the 9038 doses delivered-and unenumerated vaccine counseling-provided at our clinics for underserved populations contributed to the overall increase.

A central challenge was ensuring that patients received the correct vaccine, which we addressed using a systems design model to develop the colorcoded checkpointsystem described previously. Logistical challenges included securing safe facility spaces that could accessibly accommodate high participant volumes with physical distancing. Other challenges included the physical setup and breakdown of a mobile clinic model that could scale to accommodate up to 500 vaccinations. Finally, the unknown sustainability of and ultimately end of funding from the federal government in March 2022 limited our reach.

SUSTAINABILITY

Our experience facilitating mobile, pop-up, community-based clinics could be adapted for other types of public health interventions, such as flu vaccination and school attendancemandated immunizations. Color coding from registration limited administration errors and facilitated flow. These efforts, however, are only sustainable with appropriate funding, trustworthy community engagement, and institutional support.

PUBLIC HEALTH SIGNIFICANCE

Vaccination remains a key strategy to stem the tide of the COVID-19 pandemic. More than one year after emergency use authorization approval for vaccination among those aged 12 to 15 years and more than six months after emergency use authorization approval forthose aged five to 11 years, vaccine uptake among children remains low. The implementation of centrally located community clinics at trusted venues such as public schools and recreation centers may reduce barriers to COVID-19 vaccination among medically underserved populations as well as children. ÂfPU

Sidebar

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CONTRIBUTORS

H. Klusaritz, E. Paterson, C. Summers, N. Al-Ramahi, J. Henne, P.J. Brennan, and R.C. Wender initiated the project and provided ongoing operationalleadership. N. Khan and Y. Gitelman developed, supported, and maintained the text message-based enrollment system. N. Khan, A. Doubeni, K. Bream, and R. C. Wender provided clinicaloversite and support. H.Jeudin, Y. Sydnor, N. Dollard, and K. D. Young conducted vaccine education and outreach and provided logistical support for clinics. H. Klusaritz, E. Paterson, C. Summers, N. Naseer, C. C. Cannuscio, and R. Feuerstein-Simon conducted data analysis. R. Feuerstein-Simon led article writing, with support from H. Klusaritz, E. Paterson, N. Naseer, and C. C. Cannuscio. All authors designed and conducted the project, contributed to article editing, and approved the final version.

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Note. The contents of this article are those of the authors and do not necessarily represent the officialviews of, nor an endorsement by, the HRSA, the HHS, or the US government.

CONFLICTS OF INTEREST

The authors have no potentialor actualconflicts of interest to disclose.

HUMAN PARTICIPANT PROTECTION

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DETAILS

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Gun Control for Health: A Public Health of Consequence, December 2022

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ABSTRACT (ENGLISH)

On June 23, 2022, the US Supreme Court ruled in New York State Rifle &Pistol Association (NYSPRA) v. Bruen that the New York State law requiring individuals to show proper cause to obtain a license to carry a concealed firearm in public places for purposes of self-defense was unconstitutional (https://bit.ly/3DBV4vF). The significance of this ruling from political and public health perspectives cannot be underestimated. Against the backdrop of growing political partisanship among US legislators and in the US Supreme Court, the persistent lobbying by gun rights groups and the gun industry to loosen gun regulations and promote gun sales, as evidenced by the NYSPRA ruling, exemplifies how commercial determinants undermine health and well-being. The commercial interests of the gun lobby and the gun industry that limit research and drive laws and practices to sustain the availability and presence of guns in the United States cause immediate and horrific public health harms-mass shootings, mass murders, homicides, suicides, and unintentional gun-related injuries and deaths. The physical and emotional costs of gun-related injuries and deaths to survivors, their friends, and families are staggering. An evaluation funded by Everytown for Gun Safety concluded that gun violence costs Americans $557 billion annually-the bulk of which is attributed to quality-of-life costs for victims and their families ($489.1 billion) and medical costs ($2.8 billion) (https://bit.ly/3Ubhw4N).

FULL TEXT

On June 23, 2022, the US Supreme Court ruled in New York State Rifle &Pistol Association (NYSPRA) v. Bruen that the New York State law requiring individuals to show proper cause to obtain a license to carry a concealed firearm in public places for purposes of self-defense was unconstitutional (https://bit.ly/3DBV4vF). The significance of this ruling from political and public health perspectives cannot be underestimated. Against the backdrop of growing political partisanship among US legislators and in the US Supreme Court, the persistent lobbying by gun rights groups and the gun industry to loosen gun regulations and promote gun sales, as evidenced by the NYSPRA ruling, exemplifies how commercial determinants undermine health and well-being. The commercial interests of the gun lobby and the gun industry that limit research and drive laws and practices to sustain the availability and presence of guns in the United States cause immediate and horrific public health harms-mass shootings, mass murders, homicides, suicides, and unintentional gun-related injuries and deaths. The physical and emotional costs of gun-related injuries and deaths to survivors, their friends, and families are staggering. An evaluation funded by Everytown for Gun Safety concluded that gun violence costs Americans $557 billion annually-the bulk of which is attributed to quality-of-life costs for victims and their families ($489.1 billion) and medical costs ($2.8 billion) (https://bit.ly/3Ubhw4N).

PUBLIC HEALTH, NOT CORPORATE HEALTH

In their 2018 commentary, McKee and Stuckler1 presented a summary of key manifestations of corporate power that influence health. Two of these manifestations-setting the narrative and setting the rules-are clearly part of the playbook of the gun lobby as they seek to dismantle gun control legislation. By focusing on a narrative of gun "rights" in legislative and judicial decisions and pouring money to back politicians who will not support gun control prevention or research efforts, the gun industry has ensured that corporate power supersedes public health (https://bit.ly/2CnxRdo).

The Supreme Court ruling in the NYSPRA case is the latest key decision limiting gun control since the decision in District of Columbia v. Heller (2008; https://bit.ly/3sqCnnP) and in McDonald v. City of Chicago (2010, https://bit.ly/

3Fcajfv). The culmination of these decisions demonstrates the steady chipping away at federal gun regulations in the name of upholding the Second Amendment, but, in reality, to sustain the corporate and financial interests of the gun industry in the United States. Quite simply, the gun lobby in the United States is unlike that of any other special interest group. Although others, namely tobacco,2 alcohol,3 food,4 and the sugar-sweetened beverages5 industries, have been subjected to widespread and growing regulation for marketing products that cause health-related harm, the gun lobby has remained largely unregulated, despite the pervasiveness of gun violence in the United States.

Although many are aware of the Dickey Amendment, few are likely to know that a major impetus for this amendment was a 1993 study by Kellerman et al.6 showing that the presence of a gun in a home increased the odds of homicide. In an effort to stall robust research on gun violence, the National Rifle Association (NRA) lobbied for the Dickey Amendment to the 1996 US spending bill, an amendment that effectively banned federal funding to the Centers for Disease Control and Prevention (CDC) for research that could be used to advocate or promote gun control.7 In 2009, Branas et al.8 reported findings from a National Institute on Alcohol Abuse and Alcoholism-funded study showing that individuals in possession of a gun were four times more likely to be shot in an assault than those not in possession of a gun. In 2012, once again with backing by the NRA, the US omnibus spending bill expanded its ban on federally funded gun control research to include the National Institutes of Health (NIH) as well as the CDC. The presence of this ban for more than 20 years is one of the most prominent examples of lobbying and corporate manifestation of power and of setting rules that eliminate funding for gun control research. Although a small number of researchers were able to continue carrying out gun-related research, the Dickey Amendment essentially eliminated the possibility of creating a robust evidence base on gun violence prevention.

GROWING THE GUN CONTROL EVIDENCE BASE

Recently, the language of the Dickey Amendment has been clarified to allow the CDC and NIH to conduct gun violence-related research, and a $25 million allocation, distributed evenly between the CDC and NIH, was earmarked for gun violence prevention research. These funds provide what amounts to seed funding to conduct research on the impact of federal and state gun legislation compared with funding for other health issues. Despite this slow and small start, more funding and research are critically necessary to establish an evidence base that, it is hoped, can inform the myriad of laws, policies, and practices that will be required to comprehensively limit the availability of and access to guns.

In this issue of AJPH, Post and Mason (p. 1707) reflect on the significance of the study by Klarevas et al.9 conducted during the era of the Dickey Amendment. As Post writes, the contribution of the Klarevas et al. study is significant for providing additional empirical evidence on the effect of state and federal large-capacity magazine (LCM) bans on the frequency and lethality of mass shootings. The study included 69 mass shooting events between 1990 and 2017, when state (enacted in New Jersey in 1990 and still in place in nine states and the District of Columbia) and federal (enacted in 1994, expired in 2004) legislation was in place.9 Klarevas et al. found that mass shootings where LCMs were used were more likely to have higher fatalities than those where an LCM was not used and that, in states lacking LCM bans, the incidence of high-fatality mass shootings was more than twice that in states with LCM bans.

In the wake of the NYSPRA ruling, which opens the door to loosening restrictions on handgun carrying, the study by Rowhani-Rahbar et al. (p. 1783) provides much-needed baseline evidence on trends in handgun carrying in the United States. Based on a nationally representative sample of gun owners, the study found that the number of handgun owners who carried their guns on a monthly basis increased dramatically from 9 million in 2015 to 16 million in 2019 and that daily handgun carrying doubled during this period. Future studies will be needed to understand the links between handgun carrying and involvement in gun violence, whether guns carried are concealed or open, and in what types of public spaces guns are carried. Additionally, studies building on prior work examining how and where guns are safely stored will provide information to inform interventions to prevent suicides as well as unintentional injuries.10 All of these important questions require careful investigation, and it is hoped they will be supported by future funding.

CONCLUSION

Caught between our national struggle between democratic freedoms and corporate interests are the individual and societal harms inflicted by gun violence. Between January 1 and October 1, 2022, there were 515 mass shootings (shootings of more than four people) and 21 mass murders (murder of four or more people in a mass shooting; https://www.gunviolencearchive.org). During this same period, 15 547 persons were murdered (intentional and unintentional homicide, defensive gun use) and 18 348 persons committed suicide with a gun. In addition to more research on those who already own a gun or will become new gun owners,11 as well as how they will carry and use guns, parallel efforts to examine the toll of gun violence exposure on individuals and communities, as well as effective prevention, are also necessary. Â1PU

Sidebar

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The Cruel Public Health Consequences of Anti-Immigrant Rhetoric

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ABSTRACT (ENGLISH)

The United States has long used immigration policy to shape the demographic and economic future of the nation.1 Federal policy balances several priorities, including economic stability, humanitarian goals, family (reunification, and national security. Changes in immigration policy reflect shifts in the relative emphasis placed on each of these priorities. Since the 1980s, Americans' increasingly polarized views on immigration have contributed to Congress's failure to pass comprehensive immigration reform, frequent changes in aspects of immigration policy that can be regulated without Congress, and a system that is increasingly difficult for immigrants to navigate.1

Two articles in this issue of AJPH address one federal immigration policy: the public charge rule. The public charge rule is designed to ensure that immigrants who enter the United States will be able to sustain themselves without relying on the government for financial support.2 In 1999, the public charge rule stated that noncitizens may be denied a green card if they have received general cash assistance or long-term institutionalization funded by the US government or a state, regional, local, or tribal government.2 Immigrants' use of noncash benefits such as Medicaid and certain cash benefits such as childcare subsidies did not impact their green card eligibility.2

In 2017, the Trump administration leaked a draft of a new rule, stating that Medicaid, the Supplemental Nutrition Assistance Program (SNAP), and housing, energy, and childcare assistance would now factor into public charge determinations. The final version of the rule was published in August 2019. The rule was challenged in court and was in effect off and on from October 2019 through March 2021 3 On September 9, 2022, the US Department of Homeland Security (DHS) released a new version of the public charge rule under which public charge determinations are again based on the guidelines used before 2019.

FULL TEXT

The United States has long used immigration policy to shape the demographic and economic future of the nation.1 Federal policy balances several priorities, including economic stability, humanitarian goals, family (reunification, and national security. Changes in immigration policy reflect shifts in the relative emphasis placed on each of these priorities. Since the 1980s, Americans' increasingly polarized views on immigration have contributed to Congress's failure to pass comprehensive immigration reform, frequent changes in aspects of immigration policy that can be regulated without Congress, and a system that is increasingly difficult for immigrants to navigate.1

Two articles in this issue of AJPH address one federal immigration policy: the public charge rule. The public charge rule is designed to ensure that immigrants who enter the United States will be able to sustain themselves without relying on the government for financial support.2 In 1999, the public charge rule stated that noncitizens may be denied a green card if they have received general cash assistance or long-term institutionalization funded by the US government or a state, regional, local, or tribal government.2 Immigrants' use of noncash benefits such as Medicaid and certain cash benefits such as childcare subsidies did not impact their green card eligibility.2

In 2017, the Trump administration leaked a draft of a new rule, stating that Medicaid, the Supplemental Nutrition Assistance Program (SNAP), and housing, energy, and childcare assistance would now factor into public charge determinations. The final version of the rule was published in August 2019. The rule was challenged in court and was in effect off and on from October 2019 through March 2021 3 On September 9, 2022, the US Department of Homeland Security (DHS) released a new version of the public charge rule under which public charge determinations are again based on the guidelines used before 2019.2

The Migration Policy Institute estimates that, even under the broad 2019 rule, less than 1% of the 22.1 million noncitizens currently living in the United States could be denied a green card because of public benefits enrollment. Few noncitizens are both subject to the public charge rule and eligible for public benefits. Use of benefits by US citizen children or other household members does not count against a green card applicant in public charge determinations.2

Although very few immigrants are subject to the intended effects of this rule, there are widespread unintended effects.2 As two articles in this issue of AJPH show, the 2019 public charge rule led many immigrants to avoid public benefits, even before the rule was implemented. Miller et al. (p. 1738) use the Survey of Income and Program Participation to show that mixed citizenship status households were less likely to use SNAP and school breakfast and lunch programs after the draft rule was leaked in January 2017. Using New York State Medicaid claims, Wang et al. (p. 1747) show that, compared with noncitizens who gave birth in 2014-2016, noncitizens who gave birth after January 2017 enrolled in Medicaid later in pregnancy; were more likely to have delayed, inadequate, or no prenatal care; and had smaller babies.

These findings contribute to growing evidence that after the 2019 rule was announced, enrollment in many meanstested benefits programs declined; immigrants avoided nongovernmental services, including those designed for survivors of domestic and sexual violence; and immigrants were afraid to access COVID-19 testing and vaccination.2 Older adults, immigrants with disabilities, and US citizen children with immigrant parents were disproportionately impacted.2 Through the 2022 rule, DHS attempts to limit chilling effects while adhering to the congressional mandate to identify immigrants who are likely to become a public charge.2 However, experts expect some level of chilling effect to continue.3

CHANGING POLICIES CREATE CONFUSION AND MISTRUST

The public charge rule illustrates a broader issue: In the absence of congressional immigration reform, the executive branch is the primary driver of immigration policy. The federal immigration policy landscape changes drastically with each presidential administration. For example, President Obama used executive actions to establish the Deferred Action for Childhood Arrivals (DACA) program and to focus immigration enforcement primarily on immigrants who pose a threat to public safety and national security.4,5 President Trump issued over 400 executive actions on immigration, including large cuts in refugee resettlement, an attempt to end DACA, and expanded immigration enforcement at the border and within the United States.4,6 The Biden administration has used executive actions to undo some of President Trump's policies, with varying success.4,5

The legislative branch also has a key role in determining immigration policy, because many executive actions have been challenged in court. In 20202021, court decisions repeatedly enjoined the 2019 public charge rule, then allowed it to go back into effect.2 The same is true of other policies, including the termination of DACA and requirements that asylum seekers remain in Mexico while waiting for asylum hearings.4,6

Frequent policy changes create confusion, misinformation, and mistrust among immigrants. It is difficult for immigrants and immigrant-serving providers to keep up with policy changes, and it is not always clear how policies will be implemented.3 Misinformation about the public charge rule includes the belief that noncitizen parents may be denied a green card or even deported if their citizen children enroll in Medicaid, as well as fears that if a green card holder accesses public benefits, they may be ineligible for naturalization.2,3

Dramatic shifts in immigration policy also communicate to noncitizens that their presence in the United States is dependent on the whims of the current president. Immigrants act on the basis of not only current policy but also concerns that policies may become more punitive in the future.3 Even when immigrants know that they or their children are eligible for public benefits and can enroll without endangeringtheir legal status, many decide that it is not worth the risk that these policies may change again soon.3

IMPLICATIONS FOR PUBLIC HEALTH RESEARCH

The articles published in this issue of AJPH advance our understanding of immigration policy in two key ways. Both Miller et al. and Wang et al. show that chilling effects on food assistance, Medicaid, and prenatal care emerged as soon as the 2019 public charge rule leaked-over two years before it went into effect. Past research has focused on the effects of policies that are passed and implemented7; these findings suggest that immigrant health is also harmed by policies that are proposed but fail to pass. Both studies also find that effects of the public charge rule varied on the basis of where immigrants lived. By examining how local context limits or amplifies the effects of federal policies, researchers may identify ways local communities can advance health equity for immigrants.

IMPLICATIONS FOR PUBLIC HEALTH PRACTICE

By deterring immigrants from seeking public benefits and health care, the 2019 public charge rule may have exacerbated the COVID-19 crisis.2 The 2022 final rule is an important step toward addressing the public health consequences of the 2019 rule, but it must be accompanied by outreach so that immigrants feel safer accessing public benefits.3 DHS should disseminate information through communitybased organizations that have already established trust in immigrant communities,8 and medical-legal partnerships could incorporate immigration lawyers who can provide up-to-date guidance on changing policies.3 However, until Congress passes comprehensive immigration reform, public health professionals will face an uphill battle against the misinformation, confusion, mistrust, and fear that currently constrain immigrants' access to health care and public benefits.3 /4JPH

Sidebar

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Immigrant-Inclusive Policies Promote Child and Family Health

Bovell-Ammon, Allison, MDiv [1] ; Ettinger de Cuba, Stephanie, PhD, MPH [2] ; Cutts, Diana B, MD [3] [1] Children's HealthWatch, Boston Medical Center, Boston, MA [2] Children's HealthWatch, Boston Medical Center, Boston, MA; also with the Boston University Schools of Public Health and Medicine [3] Hennepin County Medical Center, Minneapolis, MN

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ABSTRACT (ENGLISH)

In this issue of AJPH, findings by Miller et al. (p. 1738) suggest that anti-immigrant rhetoric and proposed changes to public charge during the early years ofthe Trump administration significantly reduced federal nutrition assistance program participation among mixed-status immigrant households. Mixed-status households in states with the most, compared with the least, generous eligibility provisions for noncitizens had greater declines in Supplemental Nutrition Assistance Program (SNAP) participation, and those in moderately generous states saw declines across SNAP and school meals programs. Public charge is a determination made when some potentially eligible noncitizens seek legal permanent residency. Trump-era changes to public charge included an expansion of assistance programs considered indicative of whether the applicant is deemed likely to be dependent on long-term government assistance in the future (i.e., a "public charge"). Prior to final rule issuance in August 2019, the proposed rule and several leaked drafts, as well as speculation about the scope, time frame, and contents ofthe rule change, perpetuated fear in immigrant communities. Miller et al.'s results indicating significant participation reductions in SNAP, the National School Lunch Program (NSLP), and the School Breakfast Program (SBP) are concerning, given robust evidence demonstrating these programs' health and educational benefits. These findings suggest potentially harmful long-term consequences of anti-immigrant rhetoric and regulatory changes, underscoring the urgent necessity of implementing policy solutions that promote equitable assistance program access without fear.

FULL TEXT

In this issue of AJPH, findings by Miller et al. (p. 1738) suggest that anti-immigrant rhetoric and proposed changes to public charge during the early years ofthe Trump administration significantly reduced federal nutrition assistance program participation among mixed-status immigrant households. Mixed-status households in states with the most, compared with the least, generous eligibility provisions for noncitizens had greater declines in Supplemental Nutrition Assistance Program (SNAP) participation, and those in moderately generous states saw declines across SNAP and school meals programs. Public charge is a determination made when some potentially eligible noncitizens seek legal permanent residency. Trump-era changes to public charge included an expansion of assistance programs considered indicative of whether the applicant is deemed likely to be dependent on long-term government assistance in the future (i.e., a "public charge"). Prior to final rule issuance in August 2019, the proposed rule and several leaked drafts, as well as speculation about the scope, time frame, and contents ofthe rule change, perpetuated fear in immigrant communities. Miller et al.'s results indicating significant participation reductions in SNAP, the National School Lunch Program (NSLP), and the School Breakfast Program (SBP) are concerning, given robust evidence demonstrating these programs' health and educational benefits. These findings suggest potentially harmful long-term consequences of anti-immigrant rhetoric and regulatory changes, underscoring the urgent necessity of implementing policy solutions that promote equitable assistance program access without fear.

HEALTH EFFECTS OF REDUCED BENEFIT PARTICIPATION

Decades of research show that SNAP participation is associated with health benefits across the life span, including positive birth outcomes, healthy cognitive development among children, and good overall health status and reduced acute health care use and spending for children and adults, in addition to reducing food insecurity.1-3 Beneficial health impacts of SNAP participation in childhood persist into adulthood.2 School meal programs are associated with positive health and education outcomes among children. NSLP is linked to reduced rates of poor health and obesity among school-age children and improved attendance, behavior, and academic achievement.4 SBP is associated with improved nutrient intake, better student mental health, and positive education outcomes.5 Given these public health considerations, paired with the fact that more than one-fourth of children in the United States have at least one immigrant parent, maintaining consistent access to federal nutrition assistance programs is essential for promoting optimal population health.

Although Miller et al. did not find changes in food security, other research demonstrates increased rates of food insecurity among families with immigrant mothers following the 2016 election.6 Both the final expanded rule, which took effect in fall 2019, and the COVID-19 pandemic occurred after the study period presented in Miller et al.'s article7; still, following these events, chilling effects in federal assistance program participation persist. Given rising economic hardships resulting from the COVID-19 pandemic, Miller et al.'s findings become only more relevant for ensuring that families with noncitizens continue to be able to afford basic needs. Lessons from the pandemic response may further illuminate necessary action. Noncitizen and mixed-status families have faced an increased risk of COVID-19-related poor health outcomes and economic hardships during the pandemic compared with US-born households while being less likely to benefit from COVID-19-related protections and relief policies.8,9

SYSTEMIC, POLICY CHANGES NEEDED

The Biden administration has taken steps to reverse harmful changes to the public charge rule and has finalized a rule returning the public charge definition to the 1999 precedent, which narrowly focused on specific cash benefits and public long-term institutionalization and excluded other housing, food, and health care programs (Miller et al.). This effort was undertaken by the administration to stem welldocumented chilling effects in health and assistance programs among immigrants and their families. Reversal is an important step toward alleviating chilling effects, but issuance of the new public charge regulation alone is unlikely to ameliorate harms inflicted upon immigrant communities across decades of US policy.

Miller et al. rightfully emphasize effects on public assistance participation among noncitizens following exclusionary policymaking efforts in the late 1990s and the ways state-level responses interacted with federal level changes in families' lives. In addition to existing public assistance program eligibility restrictions and changes to public charge, increasing efforts across the nation to criminalize immigrant communities, separate families, and marginalize immigrants through xenophobic rhetoric have resulted in significant harm that is not easily undone.11 Responding to the public health issue of xenophobia and antiimmigrant policymaking will require a robust response across all levels of government and society.11

Policy and programmatic solutions responsive to the needs and requests of immigrants themselves are important for advancing equity and immigrant inclusion. In addition to comprehensive immigration reform that creates a path to citizenship, eliminates family separation, and lifts pandemic-era border restrictions on asylum seekers, federal legislation that simplifies eligibility, is inclusive, and eliminates barriers to assistance programs is paramount. The complex patchwork of eligibility rules across public assistance programs creates significant confusion-not just for immigrant families in need of support but also for public assistance workers, service organizations, and legal professionals, not to mention the general public. Removing all immigration-related rules from eligibility determinations would provide the most seamless and health-promoting access to the essential support provided by SNAP, school meals, and other public assistance programs. Experience gained during the pandemic shows implementation of universal school and child care meals nationwide would mean that all children, regardless of immigration status, have access to healthy meals without unnecessary and costly administrative burden. For SNAP, important progress toward more inclusive policy would include lifting the five-year bar that prevents otherwise eligible, lawfully present noncitizens who have resided in the United States for less than five years from accessing SNAP and other healthpromoting federal programs. These changes are critically important investments in the current and future health of children in the United States.

Congress and the current administration have several imminent opportunities for enacting transformative policy improvements. These include current efforts to develop a national strategy to end hunger by 2030 as part of the White House Conference on Hunger, Nutrition, and Health; ongoing Child Nutrition Act reauthorization deliberations; and the forthcoming farm bill debate. Intentionally focusing on addressing the marginalization of immigrant families, including specific attention to both mixed-status and noncitizen families, in federal policy discussions is critical to reverse harms documented by Miller et al. and many others. In addition to federal policy change, investment in and support for community-based groups with a track record of responding to the needs of noncitizen and mixed-status families is important for further bolstering immigrant health and the health of the more than one fourth of children in the United States with immigrant parents. Miller et al. hypothesize that these community groups may have been key in promoting food security among mixed-status families despite declines in federal assistance program participation.

Finally, although these changes and investments are important, an adequate response to generations that have experienced historical bias and trauma requires further action. Rebuilding trust in public institutions and reversing adverse outcomes will require sincere engagement with trusted immigrant-led community groups and elevation of a diversity of immigrant voices in decisionmaking. Following the leadership of immigrants is essential not only for establishing trust but also for ultimately ensuring that equitable policies are enacted, evaluated, and continuously improved. Only then can we achieve truly equitable child and family health for all families in the United States

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Knowledge and Practice of Pinworm Infection in Preschool Children, Jiangsu Province, China, 2019–2020

Mao, Fanzhen, MSc; Yang, Yougui, BA; Zhang, Qiang, MSc; Ding, Xin, MSc; Xu, Xiangzhen, MSc; Chen, Yuying, BA; Dai, Yang, PhD; Cao, Jun, PhD

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ABSTRACT (ENGLISH)

We conducted a two-year (2019-2020) longitudinal study in Jiangsu Province, China to analyze risk factors of pinworm infection and evaluate the effect of behavior change communication-based (BCC-based) interventions in preschool children. The positive rate of pinworm infection was higher in private preschool (2%) than in public preschool (0.24%). Poor sanitation behaviors were risk factors among private preschool children. BCC-based intervention could improve knowledge and practice and reduce pinworm infection. This study may help fill in gaps in pinworm control. (AmJ Public Health. 2022;112(12):1716-1720. https:// doi.org/10.2105/AJPH.2022.307067)

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Headnote

We conducted a two-year (2019-2020) longitudinal study in Jiangsu Province, China to analyze risk factors of pinworm infection and evaluate the effect of behavior change communication-based (BCC-based) interventions in preschool children. The positive rate of pinworm infection was higher in private preschool (2%) than in public preschool (0.24%). Poor sanitation behaviors were risk factors among private preschool children. BCC-based intervention could improve knowledge and practice and reduce pinworm infection. This study may help fill in gaps in pinworm control. (AmJ Public Health. 2022;112(12):1716-1720. https:// doi.org/10.2105/AJPH.2022.307067)

Enterobiasis, caused by pinworm (Enterobius vermicularis) infection, is one of the most prevalent parasitic diseases among children regardless of their socioeconomic level, culture, or race.1-3 In severe cases, insomnia, weight loss, vomiting, abdominal pain, and appendicitis can appear. Pinworm eggs are transmitted from person to person, directly via anus-to-mouth contamination, finger contamination, or through indirect touch of contaminated objects (e.g., toys and classroom tables). Preventing infection and reinfection may be challenging because of a simple life cycle.4 Children with poor personal hygiene are susceptible to pinworm infection and reinfection, especially those in crowded organizations.5 However, enterobiasis in children is considerably neglected by parents and health officials. Enterobiasis is rarely a subject of in-depth epidemiological inquiries, in developed or developing countries, despite its wide occurrence. Screening of key populations, analyzing risk factors, and precise interventions are conducive and necessary to pinworm control. Behavior change communication (BCC) is widely used to promote and sustain healthy changes in behavior through tailored health messages and approaches.6 BCC-based intervention may facilitate pinworm control at the community or school level.

INTERVENTION AND IMPLEMENTATION

We conducted two preschool-level surveys to implement data collection. Letters of information, informed consent forms, and questionnaires were given to parents or principal caretakers prior to the survey. The BCC-based intervention included health education and providing health consultation services. Health education comprised guiding daily hygiene, developing hygiene habits, holding lectures, distributing leaflets, and providing health consultation services. We recruited experts from municipal-level and province-level Centers for Disease Control and Prevention to provide health consultation services. The parents received feedback on the results of pinworm detection. We told parents of children testing positive to seek medical treatment and advice.

We treated Gulou District and Gangzha District as intervention groups and Haimen District and Guangling District as control groups. The inclusive and exclusive criteria are shown in panel b of Figure B (available as a supplement to the online version of this article at https://www.ajph.org). However, we excluded the Haimen District children from the control group because of the preschool adjustment made by the local government at the beginning of 2020.

BCC-based health education was implemented with the aim of having teachers and parents cultivate conscious hygiene habits in the children studied. Lectures were held four times per year (twice a semester) by health workers. Leaflets were given out to children and parents every semester (two semesters a year). Moreover, teachers in these preschools were requested to hold a lecture about pinworm infections and prevention at the parents' meeting. Considering the low pinworm infection rates in public preschool, we conducted BCC-based intervention in private preschools. Sample collection was performed in the morning, before the children defecated and bathed. Health workers from county- and municipallevel Centers for Disease Control and Prevention took one sample from each child. The adhesive cellophane tape swab (patent number: ZL201420707045.8) was used over the perianal skin and was then inspected by a trained municipallevel microbiologist and checked by an expert from Jiangsu Institute of Parasitic Diseases. One or more eggs found under the microscope indicated a pinworm infection. We invited the child's parents or principal caretakers to complete a questionnaire (Table A, available as a supplement to the online version of this article at https://www.ajph.org); questions included information related to demographics, household sanitary conditions, and knowledge and practice regarding enterobiasis. The content of the questionnaire was the same at baseline and at follow-up.

We used SPSS version 13.0 (SPSS Inc, Chicago, IL) to conduct data analyses. We used the x2 test to test significant differences in group outcomes. We conducted multivariate logistic regression by treating the grouping variable (intervention group or control group) as outcome and gender, age, residence, mother's educational level, type of flooring in the home, and hygiene habits among the follow-up population as covariates to achieve the propensity score, which was classified into four groups according to quartiles. We applied the Cochran-Mantel-Haenszel test, adjusted by grouped propensity score, to test statistical differences between the intervention group and control group. We estimated odds ratios and 95% confidence intervals using the Poisson loglinear model of risk factors for pinworm infection at baseline (2019). We applied principal component analysis to detect hygiene factors. The factor of the principal component analysis with an eigenvalue above 1 was retained. A P value of less than .05 indicated a statistically significant difference.

PLACE, TIME, AND PERSONS

The study included preschool children in six districts of Nanjing, Yangzhou, Nantong, and Yancheng Prefectures (Figure A, available as a supplement to the online version of this article at http://www.ajph.org). The program (Figure B) was conducted September 1, 2019 through October 31,2020 in Jiangsu Province, China. We made epidemiological assessments and analyzed associated risk factors of pinworm infection after a cross-sectional survey (September-October 2019). We then implemented a BCC-based intervention. The participants were followed up from September to October 2020.

Preschool children aged two to six years, as well as their parents or principal caretakers, were included. In each study site, we selected two types of preschools: public preschools, which only admit children from permanent population families, and private preschools, which only admit children from transient population families. A majority of children came from one-child families. If a family had multiple children aged two to six years attending the selected preschool, all children were recruited as respondents.

PURPOSE

Although enterobiasis was mostly controlled, it was not completely eliminated.7,8 The aim of this study was to explore risk factors and BCC-based intervention approach for pinworm infection in Jiangsu Province, China.

EVALUATION AND ADVERSE EFFECTS

A total of 3678 preschool children (1697 from public preschool and 1981 from private preschool) aged two to six years were enrolled in 2019 (Table 1). The overall rate of pinworm infection was 1.2%. At baseline (in 2019), 54% were boys, and the mean (±SD) age of the children was 4.4 (±1) years; a majority of children were aged four to five years (65.6% and 64.0% for private preschool and public preschool, respectively); four (0.24%) and 41 (2%) positive cases of pinworm infection were found in public preschools and private preschools, respectively. Hygiene behaviors of Enterobius vermicularis infection among preschool children are shown in Table B (available as a supplement to the online version of this article at https://www. ajph.org).

Improvement of Knowledge and Practice

Knowledge improved in the intervention group, whereas it decreased in the control group (Table 2). Moreover, private preschool children showed greater improvement in behavior after BCCbased intervention, especially in relationship to washing hands, sucking fingers, and sucking toys and pens (Table C, available as a supplement to the online version of this article at https://www. ajph.org).

Reduced Positive Rate, But New Infections

The intervention group consisted of 723 children from Gulou and Gangzha Districts (positive rate: 4.3%), whereas the control group comprised 258 children from Gangling District (positive rate: 0.4%; panel b, Figure B).

In 2020, we followed up 740 children from baseline: 505 children in the intervention group (51.9% boys; 60.2% of children aged four to five years) and 235 children in the control group (50.6% boys; 67.7% of children aged four to five years). Following the one-year intervention, 18 of the children positive at baseline were found to be negative; however, seven new infections were found (positive rate: 1.4%). There was no infection in the control group during follow-up.

Factors Associated With Infections

We used principal component analysis to develop hygiene factors from nine variables related to personal hygiene behaviors (Table D, available as a plement to online version of this article at https://www.ajph.org). We retained four principal components (PCs). PC1 indicated a composite factor of sucking habit; PC2 indicated the habit factor of washing hands; PC3 indicated a composite factor of maintaining personal hygiene and tidiness; PC4 indicated bathing habits. According to the Poisson loglinear model of children from private preschool, risk factors found to be associated with pinworm infections were age (odds ratio [OR] 5 1.6; 95% confidence interval [CI] 5 1.2, 2.3), PC3 (OR 5 1.2; 95% CI 5 1.01,1.5), and PC4 (OR 5 1.4, 95% CI 5 1.1,1.8; Table E, available as a supplement to the online version of this article at https://www.ajph.org). Among public preschool children, only brick or wood floor (reference 5 cement floor) resulted as a risk factor (OR 5 19.9; 95% CI 5 13.1,30.4; Table E).

We observed no adverse effects.

SUSTAINABILITY

Children's pinworm infections have been overlooked because there is a serious lack of studies on the topic. This work calls for more attention to be paid to pinworm infections among preschool children, as well as for the sustainable practice of pinworm control. Moreover, in this study, we have developed a protocol of BCC-based intervention approach and control strategy, incorporated in annual parasitological surveys with funding support, which may facilitate the formation and continuity of best practices for pinworm infection control in preschool.

PUBLIC HEALTH SIGNIFICANCE

To the best of our knowledge, the present study is the first report on the prevalence of pinworm infections among private and public preschool children. To better understand the context of this study, it's important to note that the distinction between public and private schools may have different connotations in China compared with other parts of the world. This study provides an in-depth and new insight into preschool-based pinworm risk and intervention efforts worldwide. BCC-based intervention, which could improve knowledge and practice and reduce pinworm infection, could be further applied for pinworm control among children, especially private preschool children.

Sidebar

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J. Cao and Y.Dai conceptualized the study. F. Mao, Y. Yang, and Q. Zhang analyzed the data, drafted the manuscript, and contributed to data analysis and interpretation. X. Ding, X. Xu, and Y. Chen assisted with data collection. All authors critically reviewed and revised the manuscript.

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The authors have no conflicts of interest to declare.

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Effect of Masking to Prevent COVID-19 Transmission in Schools and the Responsibility of States to Protect Public Health

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ABSTRACT (ENGLISH)

The 2022-2023 school year marks the third time US children and adolescents have returned to school during the COVID-19 pandemic, and there is hope that it will be less challenging than the previous two years. At the start of the 2021-2022 school year, the highly transmissible Delta variant was causing rapid increases in cases and hospitalizations, notably among children and adolescents.1 By December 2021, the even more infectious Omicron variant had emerged. At its peak in January 2022, Omicron caused almost 1 million cases per day, with a rate of new cases among school-aged children (5-11 years) of 1545 per 100 000 per week.2 The Omicron surge also caused considerable disruption of school attendance. In a New York Times poll, half of US parents reported that their child missed three or more days of in-person schooling inJanuary 2022.3

The COVID-19 pandemic may not be over, and there is considerable uncertainty about how COVID-19 will impact the current school year and about our level of preparedness. Given the pattern of the past two years, the potential for new surges is an important concern, particularly given the low vaccination coverage among schoolaged children. Although COVID-19 vaccines are now authorized for children aged six months and older, at the start of the school year, only 31% of schoolaged children had been vaccinated, and less than 15% had received a booster.2 Uptake of boosters among adults is also low, even among those at high risk because of age or comorbidities.

An additional concern is that the guidance on COVID-19 mitigation strategies from the Centers for Disease Control and Prevention (CDC)for the 2022-2023 school year recommends a localized approach that is responsive to COVID-19 community levels as indicated by hospitalization and case data. The CDC recommends using face masks in schools when community infection levels are high4; however, our recent work suggests that implementation of these guidelines may be challenging. Because of the widespread use of at-home antigen tests, which are not included in routine surveillance data, it may be difficult to accurately track the number of new COVID-19 cases and to use these data to rapidly respond to surges.

FULL TEXT

The 2022-2023 school year marks the third time US children and adolescents have returned to school during the COVID-19 pandemic, and there is hope that it will be less challenging than the previous two years. At the start of the 2021-2022 school year, the highly transmissible Delta variant was causing rapid increases in cases and hospitalizations, notably among children and adolescents.1 By December 2021, the even more infectious Omicron variant had emerged. At its peak in January 2022, Omicron caused almost 1 million cases per day, with a rate of new cases among school-aged children (5-11 years) of 1545 per 100 000 per week.2 The Omicron surge also caused considerable disruption of school attendance. In a New York Times poll, half of US parents reported that their child missed three or more days of in-person schooling inJanuary 2022.3

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An additional concern is that the guidance on COVID-19 mitigation strategies from the Centers for Disease Control and Prevention (CDC)forthe 2022-2023 school year recommends a localized approach that is responsive to COVID-19 community levels as indicated by hospitalization and case data. The CDC recommends using face masks in schools when community infection levels are high4; however, our recent work suggests that implementation of these guidelines may be challenging. Because of the widespread use of at-home antigen tests, which are not included in routine surveillance data, it may be difficult to accurately track the number of new COVID-19 cases and to use these data to rapidly respond to surges.5

EFFECTIVENESS OF SCHOOL-BASED COVID-19 PREVENTION STRATEGIES

In this issue of AJPH, DeJonge et al. (p. 1791) present the findings of a study comparing the effectiveness of COVID-19 mitigation strategies in Wisconsin school districts in the fall of 2021. Using employment records and COVID-19 testing data from September through November 2021, they compared the incidence of new cases of COVID-19 among teachers working in school districts with prevention policies with the incidence of infections in districts without policies. The researchers examined the individual effects of three different COVID-19 prevention strategies: mask wearing by teachers and students, physical distancing, and quarantine.

The study found that the overall COVID-19 incidence rate was 5458 per 100000 educators during the first three months of the 2021 -2022 school year. The researchers also showed that although distancing and quarantine had no impact on reducing infections among teachers, masking policies were associated with decreased risk of infection. Teachers across all grade levels who worked in districts with masking policies were 19% less likely to have a positive test result for COVID-19 than those in districts without masking policies (hazard ratio = 0.81; 95% confidence interval = 0.72, 0.92). Furthermore, the study shows that even among a highly vaccinated population (78% of Wisconsin teachers were fully vaccinated), masks were protective against COVID-19 transmission. These findings demonstrate that during a period of high infection rates, the combination of masking and vaccination provided stronger protection than vaccination alone.

The study is comprehensive and has important strengths. It includes data from 307 Wisconsin school districts (81%) and almost 52 000 teachers. It adjusted for critical confounders, including the age, sex, and vaccination status of teachers, as well as community characteristics (vaccination coverage and infection rates) and school-level factors (average class size and location). Notably, it was conducted before the widespread use of at-home antigen testing, which could make conducting similar studies more difficult because of decreased recording of cases.5 A reported limitation of the study is the lack of accounting for adherence to COVID-19 prevention policies by districts. However, nonadherence to prevention policies would most likely have biased the results toward the null, indicating that masking in schools may be more protective than this study was able to show.

Unfortunately, this study did not measure COVID-19 infections among students to demonstrate the direct benefit of mitigation strategies for children and adolescents. The finding of reduced infections among educators is indicative of lower transmission within schools, which is indirect evidence of the impact on students. The findings are consistent with previous studies showing that masking prevents secondary transmission in schools.6 This evidence for the protective effect of masking in the school environment is important and timely, given the high levels of COVID-19 vaccine hesitancy among US parents that we have previously reported.7,8 With so few schoolaged children vaccinated, these findings are particularly relevant because masking will be a critical prevention intervention in the event of another COVID-19 surge during the 2022-2023 school year.

RESPONSIBILITY OF STATE GOVERNMENTS TO PROTECT PUBLIC HEALTH

The study by DeJonge et al. also demonstrates how many US states refused to implement evidence-based public health policies that would have protected their workers, students, and communities during a critical point in the pandemic. At the start of the 2021 -2022 school year, only 18 states had mandates requiring masking in schools, whereas eight states passed laws prohibiting school districts from requiring masks, and the remaining 24 states allowed local decisions about masking policies.9 KFF reported that in the fall of 2021, more than two thirds of school-aged children lived in US states that either did not have mask requirements or prohibited them. Explanations for why several states chose to legislate against evidencebased COVID-19 mitigation strategies have been examined in previous editions of AJPH.10 Fewer studies have described the reasoning behind and consequences of the approach taken by other states that left critically important public health decisions up to individual school districts.

Wisconsin was one of the states that did not adopt a statewide mask mandate for schools in the fall of 2021, in spite of CDC guidance recommending the use of masks and existing evidence at the time showing lower COVID-19 caseloads in states that implemented mask mandates.11 DeJonge etal. showed that at the start of the 2021 - 2022 school year, the most common COVID-19 mitigation policy in place across Wisconsin school districts was physical distancing, adopted by 68%, followed by quarantine, implemented in just over half (52%). Only 25% of school districts in Wisconsin in the fall of 2021 had masking policies, while 21% of school districts were not implementing any of the COVID-19 mitigation policies examined.

According to the Wisconsin Department of Health Services, COVID-19 cases were increasing in early September 2021 and continued rising throughout the fall.12 The largest increase in cases during this period was among school-aged children and adolescents, which marked the first time that COVID-19 cases in children across the state had outpaced those in adults.12 In the week of September 12,2021, those younger than 18 years in Wisconsin had a COVID-19 infection rate of 447 cases per 100 000 (5624 cases) compared with the next highest age group, 35-44-year-olds, with 345 cases per 100 000 (2492 cases). Wastewater surveillance from this time showed similar trends of rising infections across the state after the start of the school year. In this context, it is remarkable that more was not done at the state level to protect Wisconsin's students and educators from COVID-19. Further studies should explore whether lack of statewide mandates compounded unequal distributions of COVID-19 cases, hospitalizations, and deaths.

The study by DeJonge et al. adds to the body of evidence showing that the use of face masks helps prevent COVID-19 transmission in schools and communities.11,13,14These data are critical for informing plans for future surges, when widespread use of masks may be necessary again to protect children, educators, and their communities. In addition, enhanced surveillance that does not rely solely on reported cases is also needed to allow immediate and appropriate interventions. Finally, this study demonstrates that reliance on local decision-making about critical public health measures left many schools unprotected from COVID-19 and created inequities in risk for Wisconsin's children and educators. Protecting public health is one of the fundamental responsibilities of governments, and the COVID-19 pandemic has made it clear that many state governments need to take stronger actions to protect the health of all of their citizens. >4JPU

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CONTRIBUTORS

C. A. Teasdale and S. A. Fleary contributed to the drafting of the manuscript.

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Considering Potential Risks Associated with Coopetition in Social Determinants of Health/Respond

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ProQuest document link

ABSTRACT (ENGLISH)

Butler and Nichols highlight the possibilities of coopetition (i.e., cooperative competition at interorganizational and intraorganizational levels) to fund the infrastructure of social determinants of health (SDoH).Although early examples showed success, coopetition poses possible risks to community-based organizations (CBOs) that offer SDoH services.

FULL TEXT

Butler and Nichols1 highlight the possibilities of coopetition (i.e., cooperative competition at interorganizational and intraorganizational levels) to fund the infrastructure ofsocial determinantsof health (SDoH).Although early examples showed success, coopetition poses possible risks to community-based organizations (CBOs) that offer SDoH services.

RISK 1: COST

A formal coopetition mechanism can be expensive and may impose above average functioning costs on participating organizations.2 Increased functioning costs may reduce the overall philanthropic efforts in CBOs outside the coopetition model. Thus, it is important to evaluate the total cost and total income at the CBO level before and after coopetition.

RISK 2: EQUITABLE FUNDING AND PURCHASING

Health plans possess tremendous financial power and can influence the purchasing decisions of other funders in coopetition. For instance, health plans are innately more interested in SDoH solutions that generate short-term, clear returns on investment for them (e.g., food) than in other solutions (e.g., home modifications, family caregiver support).3 It is possible that solutions with less return on investment evidence experience reduced funding. Trackingthe funding status of services that are outside the coopetition model ata community level will offer a more comprehensive picture of coopetition's impact.

RISK 3: AUTONOMY

Coopetition often requires a CBO network lead to negotiate on behalf of a group of CBOs. Although the CBO network lead plays an important role, some emerging evidence in coopetition shows that formal hierarchical structure has a negative effect on knowledge sharing, whereas informal lateral relations (e.g., social interactions) have a positive effect.4In particular, a hierarchical model may unintentionally harm knowledge sharing and capacity building for small, minority-led organizations. Coopetition models should maximize autonomy and lateral interactions.

RISK 4: RESEARCH AND DEVELOPMENT

Radical innovation in SDoH is needed. One known advantage of coopetition is accelerating research and development. Yet coopetition in SDoH today still focuses too much on providingSDoH servicesand information exchanges, which may limit flexibility in research and development.5 Two practices may catalyze research and development. First, long-term SDoH coopetition is encouraged because coopetition that spans five to seven years is more likely to generate benefits related to increased innovation.2 Second, coopetition should treat CBO-led research and development as part ofthe infrastructure and allow flexible funding for such activities.

The US social care system is at a tipping point. Thoughtful coopetition that prioritizes structural, long-term benefits for CBOs warrants further research. _4jPH

Sidebar

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V. Wong is one of the founders of EVISET, a new venture aiming to improve structural equity in the field of social care.

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Trend in Loaded Handgun Carrying Among Adult Handgun Owners in the United States, 2015–2019

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ABSTRACT (ENGLISH)

Objectives. To determine the frequency of loaded handgun carrying among US adult handgun owners overall and by state concealed carry law status. Methods. Using a nationally representative survey of US firearm-owning adults in 2019, we asked handgun owners (n = 2389) about their past-month handgun carrying behavior. Results. A total of 30.3% (95% confidence interval [CI] = 28.0%, 32.6%) of handgun owners carried handguns monthly, of whom 38.1% (95% CI = 33.6%, 42.7%) did so daily. In permitless carry states, 29.7% (95% CI 5 25.9%, 33.9%) of handgun owners carried handguns in the past month, compared with 33.1% (95% CI 5 29.9%, 36.3%) in shall issue states and 19.7% (95% CI = 14.9%, 25.5%) in may issue states. Of handgun owners without a permit, 7.5% (95% CI 5 4.1 %, 13.3%) of those in may issue states and 11.5% (95% CI 5 8.5%, 15.4%) of those in shall issues states carried handguns in the past month. Conclusions. In 2019, about 16 million US adult handgun owners carried handguns in the past month (up from 9 million in 2015), and approximately 6 million did so daily (twice the 3 million who did so in 2015). Proportionally fewer handgun owners carried handguns in states where issuing authorities had substantial discretion in granting permits. (AmJ Public Health. 2022;1 12(12):1783-1790. https://doi.org/ 10.2105/AJPH.2022.307094)

FULL TEXT

Headnote

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Results. A total of 30.3% (95% confidence interval [CI] = 28.0%, 32.6%) of handgun owners carried handguns monthly, of whom 38.1% (95% CI = 33.6%, 42.7%) did so daily. In permitless carry states, 29.7% (95% CI 5 25.9%, 33.9%) of handgun owners carried handguns in the past month, compared with 33.1% (95% CI 5 29.9%, 36.3%) in shall issue states and 19.7% (95% CI = 14.9%, 25.5%) in may issue states. Of handgun owners without a permit, 7.5% (95% CI 5 4.1 %, 13.3%) of those in may issue states and 11.5% (95% CI 5 8.5%, 15.4%) of those in shall issues states carried handguns in the past month.

Conclusions. In 2019, about 16 million US adult handgun owners carried handguns in the past month (up from 9 million in 2015), and approximately 6 million did so daily (twice the 3 million who did so in 2015). Proportionally fewer handgun owners carried handguns in states where issuing authorities had substantial discretion in granting permits. (AmJ Public Health. 2022;1 12(12):1783-1790. https://doi.org/ 10.2105/AJPH.2022.307094)

Little is known about the frequency and features of firearm carrying among adult handgun owners in the United States. In fact, over the past 30 years, only a few peer-reviewed national surveys, conducted in 1994, 1995,1996, and 2015, have provided even the most basic information about firearm carrying frequency.1-4 Since the first of these surveys, reasons offered by firearm owners for why they own firearms have shifted from hunting and sports shooting toward personal protection. In 1994, for example, 46% of firearm owners reported owning firearms for protection2; by 2015, that number had reached 65%,5 and, by 2019, it had reached 73%.6 As personal protection became the predominant motivation for owning firearms, handgun ownership increased disproportionately from 64%

in 1994 to 83% in 2021.2'7

These trends have been accompanied by a loosening of state laws governing who can carry handguns in public places. State laws regulating concealed handgun carrying are typically divided into the following types: (1) permitless: no permit is required; (2) shall issue: the issuing authority is required to grant a permit to anyone who meets certain minimal statutory requirements with no or limited discretion; (3) may issue: the issuing authority has substantial discretion to approve or deny a concealed carry permit to an applicant.8 In 1990, only 1 state allowed permitless handgun carry; at the time of this writing, that number had risen to 21 8

To our knowledge, the only contemporary national estimates of handgun carrying among US adults come from the National Firearms Survey in 2015 (NFS-201 5). NFS-2015 found that 23.5% of adult handgun owners (9 million adults) had carried a loaded handgun on their person in the month before the survey; ofthose, 34.5% (3 million) had done so every day.4 Of handgun owners who carried, 4 in 5 carried primarily for protection, 4 in 5 had a concealed carry permit, 2 in 3 always carried concealed, and 1 in 10 always carried openly.4 The prevalence of handgun carrying was similar in states with permitless carry laws and states with shall issue carry laws. By contrast, the prevalence of carrying was notably lower in states with may issue carry laws.4

In the current study (NFS-2019), we used nationally representative survey data collected from July 30, 2019, to August 11,2019, to update information pertaining to the proportion of handgun owners who carried a handgun over the previous month (and, of those, the fraction who carried daily), the characteristics of those who carried, and the prevalence of handgun carrying by handgun owners in states that did versus did not require a permit for concealed carrying at the time of the survey.

METHODS

Data for this cross-sectional study came from the Web-based NFS-2019. We designed the survey to assess firearmrelated beliefs and behaviors, including handgun carrying, in a nationally representative sample of US adults living in firearm-owning households. The survey was conducted by the research firm Ipsos from July 30, 2019, to August 11, 2019. Consistent with NFS-2015, respondents were drawn from Ipsos's Knowledge Panel, an online sampling frame comprising approximately 55 000 US adults selected using address-based sampling methods on an ongoing basis with an equal probability of selection.

Panel members' report of whether they live in a home with firearms is collected on enrollment in Knowledge Panel and updated approximately annually, allowing us to restrict invitations for participation to adults (other than those on active duty in the US military) who reported that they lived in a home with firearms. E-mail invitations to participate in the survey contained a link that sent them to the survey questionnaire. No description of the survey content accompanied the invitation. Reminder e-mails were sent to nonresponders on days 3, 6, 9, and 12. Ipsos has a modest point-based incentive program through which participants accrue points to redeem for rewards. Of the 6721 panel members invited to complete the survey, 4379 started and 4030 completed the survey (response proportion: 65.2%; participation proportion: 92.0%). Participants were not involved in the design, conduct, reporting, or dissemination plans of our research. More details about the survey can be found elsewhere.9

Measures

Firearm ownership status was determined by responses to the question: "Do you personally own a gun?" Only respondents who responded affirmatively were then asked questions about the type of firearms owned. The current study was limited to respondents within firearm-owning households who reported that they personally owned a handgun (n = 2389) regardless of whether they also owned a long gun. The survey focused exclusively on loaded handgun carrying on the person, and not in a vehicle. Respondents were asked: "In the past 30 days, have you carried a loaded handgun on your person?" Those who answered affirmatively were then asked about the number of days that they had carried (range = 0-30) and the primary reason for carrying.

Additional survey domains included respondents' sociodemographic characteristics, presence of children in the home, veteran status, type of firearm owned (handguns only vs handguns and long guns), and holding a concealed carry permit. Selected survey questions related to this analysis are provided in the Appendix (available as a supplement to the online version of this article at https://ajph.org). State handgun carry laws were identified using the state law database at Giffords Law Center to Prevent Gun Violence.8 State laws were coded by whether they required a permit for concealed handgun carrying in public in July to August 2019.

Some survey respondents refused to answer some questions about handgun ownership and handgun carrying behaviors. Of the 4030 total respondents, 1 refused to answer if they had carried a loaded handgun in the past 30 days, 3 refused to answer how many days they had carried a loaded handgun, 28 refused to answer if they had a concealed carry permit, and 15 refused to answer questions about the types of guns they owned (handguns, long guns, etc.). In addition, 81 respondents said that they did not know if they had a concealed carry permit. These refusedto-answer or "do not know" responses were recoded as missing.

A total of 20 respondents who indicated that they had carried a handgun in the past 30 days responded "0 days" when asked for the number of days in which they had carried their handgun in the past 30 days. We recoded these individuals as "did not carry in the past 30 days" in our analyses. There was no missingness in information on the reason for carrying a handgun. We generated variables about carrying laws by state; because there was no missingness in the state data for respondents, there was no missingness in carrying law variables either. There was no missingness in any demographic data from the survey respondents. Overall, because ofthe low frequency of missing values in this analysis, we conducted no imputation.

Statistical Analysis

Analyses used individual-level survey weights provided by Ipsos. These weights account for survey nonresponse and under- or overcoverage imposed by the study-specific sample design. Weights also adjusted for benchmark demographic distributions from the US Census Current Population Survey or the American Community Survey and population characteristics that are not available in either of those surveys (e.g., firearm ownership) based on Knowledge Panel profile data for gender, age, race, ethnicity, census region, metropolitan statistical area status, and education.

For this analysis, we calculated weighted percentages and their corresponding 95% confidence intervals (CIs) for each measure. Sociodemographic characteristics of handgun owners and type of firearms owned were described by past-30-day handgun carrying status (i.e., did carry vs did not carry). We conducted all analyses in Stata version 14 (StataCorp LP, College Station, TX) using the "svy" suite of commands.

RESULTS

Of all handgun owners, 30.3% (95% CI 5 28.0%, 32.6%) reported having carried a handgun in the past 30 days. Among those, 38.1% (95% CI = 33.6%, 42.7%) reported doing so every day (Figure 1). Among handgun owners who reported carrying at least once in the past 30 days, the mean number of carrying days was 18.1 (95% CI = 17.1,19.2).

Compared with handgun owners who did not carry a handgun, a significantly greater proportion of those who carried were younger, male, lived in the South (South Atlantic, East-South Central, West-South Central), and owned both handguns and long guns (Table 1). The distributions of race, educational attainment, annual household income, urbanicity of the community of residence, presence of children in the household, and veteran status were not notably different between handgun owners who carried and those who did not (Table 1). Prevalence estimates of handgun carrying by specific handgun owner characteristics are available in Figure A (available as a supplement to the online version of this article at https:// ajph.org). Most handgun owners who carried a handgun did so primarily for personal protection against people (71.8%; 95% CI = 67.4%, 75.8%; Figure 2). Findings on the frequency of and reasons for carrying stratified by gender are found in Figures B through E (available as supplements to the online version of this article at https://ajph.org).

A smaller proportion of handgun owners residing in may issue states (19.7%; 95% CI = 14.9%, 25.5%) carried a handgun than did those in permitless carry (29.7%; 95% CI = 25.9%, 33.9%) and shall issue (33.1 %; 95% CI = 29.9%, 36.3%) states (Figure 3). Approximately 11.0% (95% CI 5 8.7%, 13.8%) of handgun owners who lived in a state that required a permit to carry but did not themselves have a permit reported that they had carried a handgun in the past month. Specifically, of handgun owners who resided in a may issue state but did not have a permit, 7.5% (95% CI 5 4.1 %, 13.3%) carried a handgun; of handgun owners who resided in a shall issue state but did not have a permit, 11.5% (95% CI 5 8.5%, 15.4%) carried a handgun (Figure F, available as a supplement to the online version of this article at https://ajph.org).

DISCUSSION

In this nationally representative study conducted in 2019 (NFS-2019), we found that about 3 in 10 handgun owners carried a loaded handgun on their person in the past 30 days; among those, about 4 in 10 did so every day. Extrapolating to the estimated 53 million US adults who owned handguns in 2019, we estimate that about 16 million US adults carried a handgun in the past 30 days (up from 9 million in 2015), and that almost 6 million did so every day (twice the approximately 3 million who did so in 2015).4,7

In NFS-2019, about 7 in 10 handgun owners who carried handguns cited protection against people as the main reason for carrying. This proportion was greater (about 8 in 10) in NFS-2015. This difference could indicate an actual decline in the proportion of handgun owners who carried for personal protection against people from 2015 to 2019 or, alternatively, could be attributable to differences in the wording of the questions asked in 2015 and 2019. In 2015, the options included "For protection against strangers" and "For protection against people I know" while in 2019 the option was "For personal protection against people" (other options in both surveys included for protection against animals, hunting, sporting, and other reasons). Regardless, results from the current survey continue to demonstrate that a large majority of handgun owners who carry do so for self-defense.

We found no notable differences between the proportion of handgun owners residing in permitless carry states who carried handguns versus those residing in shall issue states who did so. Consistent with findings from NFS-2015, however, we found that proportionally fewer handgun owners residing in may issue states than those residing in permitless carry states and shall issue states carried handguns in 2019. In 2015, we found that 21.1% and 9.1% of handgun owners residing in permitless states and may issue states at that time had carried handguns, respectively. In 2019, those numbers were 33.1 % and 19.7%, respectively.

In addition, in 2015, only 1.2% of handgun owners without a permit residing in may issue states had carried handguns; that number rose to 7.5% in 2019. The NFS-2015 question specifically asked about concealed carrying whereas the NFS-2019 question asked about carrying. Nonetheless, if in 2019, as in 2015, only 10% of handgun owners always carried handguns openly (and thus would not necessarily be in violation of a permit law),4 our findings still suggest a substantial increase in the number of handgun owners who carried handguns without a permit when they were legally required to have one.

Limitations

Our study was subject to limitations. First, we did not ask survey respondents in which state they had carried their handgun; they may have carried their handgun in a state different from the one in which they resided at the time ofthe survey resulting in some degree of misclassification in our findings pertaining to the prevalence of handgun carrying in relation to state laws.

Second, NFS-2019 did not ask respondents whether they carried a handgun concealed or openly. However, it is likely a safe assumption that that the overwhelming majority of those who carried handguns did so concealed, at least on some days. In NFS-2015, for example, only about 10% of handgun owners who carried said they always carried openly. If that same fraction pertained in 2019, it would revise our estimate ofthe number of past-month carriers to 14.6 million, which still represents a substantial increase from 2015.4

Third, as in all self-report surveys, recall and reporting bias may have affected our results. To minimize recall error, questions on handgun carrying referred to the 30-day period before the survey, reducing concerns about recall bias. Although reporting bias (e.g., social desirability bias) may still have affected our results, online panel surveys such as ours tend to be less biased than alternatives, such as telephone surveys, in this specific aspect.10

Fourth, panel members who chose not to participate in our survey may have been different from those who chose to participate regarding their frequency and features of handgun carrying. However, an advantage of online panels is high completion proportions for individuals who begin the survey.11 In our study, the completion proportion was 92.0%; only 15 respondents refused to answer handgun ownership questions, and only 4 respondents refused to answer handgun carrying behavior questions. Our survey response proportion of 65.2% is also substantially greater than the range of percentages observed in typical nonprobability, optin, online surveys (2%-16%).11

Public Health Implications

On November 3, 2021, the US Supreme Court heard its first case explicitly related to handgun carrying (New York State Rifle &Pistol Association v. Bruen).12 The case tested whether the New York law requiring lawful firearm owners to provide a proper cause to obtain a permit to carry is too restrictive. On June 23, 2022, the Supreme Court ruled that New York's proper-cause requirement violates the Fourteenth Amendment's guarantee of equal protection under the law by preventing law-abiding citizens with ordinary self-defense needs from exercising their Second Amendment right to keep and bear arms in public for self-defense.13 This ruling could further catalyze the loosening of firearm-carrying regulations in different parts of the country at a time when, as our study indicates, trends in handgun carrying already point to more US adults carrying loaded handguns in public places, including without a permit when a permit is required. The effect of this loosening on firearm ownership and carrying as well as public safety and public health should be an important subject of research in the future. _4jPH

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CONTRIBUTORS

A. Rowhani-Rahbar, D. Azrael, and M. Miller contributed to the conceptualization and design of the study. All authors contributed to the acquisition, analysis, or interpretation of data. A. Rowhani-Rahbar drafted the article. All authors contributed to the critical revision of the article for important intellectual content. A. Gallagher conducted the statistical analyses. D. Azrael and M. Miller obtained funding. A. Rowhani-Rahbar, D. Azrael, and M. Miller provided administrative, technical, and material support, and supervision.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

HUMAN PARTICIPANT PROTECTION

This study was approved by the institutional review board at the Harvard T. H. Chan School of Public Health.

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Neighborhood Composition and Air Pollution in Chicago: Monitoring Inequities With a Dense, Low-Cost Sensing Network, 2021

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ABSTRACT (ENGLISH)

Objectives. To evaluate the efficacy of a novel, real-time sensor network for routine monitoring of racial and economic disparities in fine particulate matter (PM2.5; particulate matter <2.5 pm in diameter) exposures at the neighborhood level. Methods. We deployed a dense network of low-cost PM2.5 sensors in Chicago, Illinois, to evaluate associations between neighborhood-level composition variables (percentage of Black residents, percentage of Hispanic/Latinx residents, and percentage of households below poverty) and interpolated PM2.5. Relationships were assessed in spatial lag models after adjustment for all composition variables. Models were fit with data both from the overall period and during high-pollution episodes associated with social events (July 4, 2021) and wildfires (July 23, 2021). Results. The spatial lag models showed that racial/ethnic composition variables were associated with higher PM2.5 levels. Levels were notably higher in neighborhoods with larger compositions of Hispanic/ Latinx residents across the entire study period and notably higher in neighborhoods with larger Black populations during the July 4 episode. Conclusions. As a complement to sparse regulatory networks, dense, low-cost sensor networks can capture spatial variations during short-term air pollution episodes and enable monitoring of neighborhood-level inequities in air pollution exposures in real time. (AmJ Public Health. 2022;112(12): 1765-1773. https://doi.org/10.2105/AJPH.2022.307068)

FULL TEXT

Headnote

Objectives. To evaluate the efficacy of a novel, real-time sensor network for routine monitoring of racial and economic disparities in fine particulate matter (PM2.5; particulate matter <2.5 pm in diameter) exposures at the neighborhood level.

Methods. We deployed a dense network of low-cost PM2.5 sensors in Chicago, Illinois, to evaluate associations between neighborhood-level composition variables (percentage of Black residents, percentage of Hispanic/Latinx residents, and percentage of households below poverty) and interpolated PM2.5. Relationships were assessed in spatial lag models after adjustment for all composition variables. Models were fit with data both from the overall period and during high-pollution episodes associated with social events (July 4, 2021) and wildfires (July 23, 2021).

Results. The spatial lag models showed that racial/ethnic composition variables were associated with higher PM2.5 levels. Levels were notably higher in neighborhoods with larger compositions of Hispanic/ Latinx residents across the entire study period and notably higher in neighborhoods with larger Black populations during the July 4 episode.

Conclusions. As a complement to sparse regulatory networks, dense, low-cost sensor networks can capture spatial variations during short-term air pollution episodes and enable monitoring of neighborhood-level inequities in air pollution exposures in real time. (AmJ Public Health. 2022;112(12): 1765-1773.

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Recognizing health equity as a priority, public health researchers and practitioners are increasingly seeking to monitor and mitigate disparities in exposures to preventable causes of disease.1,2 Air pollution in the form of fine particulate matter (PM2.5; particulate matter <2.5 pm in diameter) is a leading environmental contributor to disease burdens3 and disparities in disease burdens.4 Adding to the urgency is the role of climate change in increasing overall PM2.5 exposures through longer and more extreme wildfire seasons,5 although little is known about the extent to which these climate change-exacerbated pollution events affect inequities in exposures.

In the United States, public health agencies obtain PM2.5 data from the Environmental Protection Agency (EPA) ambient air monitoring network. This network, implemented as a result of the Clean Air Act, has been credited with contributing to a reduction in PM2.5 of approximately 70% since 1981.6 However, remote sensing data offer evidence that areas with the highest air pollution exposures in 1981 remain the most polluted areas more than 30 years later.6 Moreover, modeled estimates from EPA emissions inventories show that Black and Hispanic/Latinx people experience higher exposures than White people.7 These findings provide a rationale for monitoring systems that track not only pollution exposures but also disparities in these exposures.

Existing EPA data provide accurate information on air pollution exposures but are subject to limitations related to data coverage over space and time. In Chicago, Illinois, a city of 600 square kilometers, the EPA maintains 4 stations monitoring PM2.5. Real-time hourly estimates of PM2.5 from monitors at 2 of these stations are available through the public AirNow tool,8 which provides estimates of regional-level exposures; however, the data are too spatially sparse to allow inferences about more granular levels of exposure, which is a problem given that evidence from mobile monitoring campaigns shows air quality can vary significantly between neighborhoods and city blocks.9 Alternatively, the EPA does provide a "downscaler model" of PM2.5 estimates at the census tract level,10 but the model cannot be used to track real-time exposures because the most recent data are from 2018.

Dense city-wide networks of low-cost sensors could complement existing regulatory networks, enabling routine real-time monitoring of spatial variations in environmental exposures. To date, however, cities in the United States have largely not designed and implemented their own dense sensing networks (with a few exceptions such as New York City11). Instead, cities monitoring air quality at "hyperlocal" levels rely on data from crowdsourced and mobile monitoring initiatives, approaches subject to limitations. Crowdsourced networks are poorly suited to monitoring disparities as a result of systematic biases in sensor locations; for example, commonly used PurpleAir sensors are more likely to be located in White areas and areas of high socioeconomic status than in areas with environmental justice concerns.12,13

Mobile monitoring campaigns, for which research-grade sensors are placed on moving vehicles, offer both city-wide coverage and insights on spatial variation9; if the vehicle fleet is small, however, this approach cannot compare multiple places at the same time or provide real-time insights for the city as a whole. Running larger campaigns would be prohibitively time and labor intensive for an urban public health department. Other common approaches (e.g., estimating PM2.5 levels from satellite imagery, emissions inventories, or sophisticated chemical transport models) are subject to model-related uncertainties and would benefit from training and validation with additional data collected across diverse neighborhoods.5 There is thus an opportunity for dense real-time monitoring to complement existing regulatory networks for the specific purpose of monitoring disparities in exposures.

In this study, we deployed a low-cost sensor network built to monitor racial/ ethnic and economic inequities in air pollution exposures. We conducted our research in the city of Chicago, building on previous efforts to document heightened exposures in environmental justice neighborhoods14,15 as well as evidence that heightened air pollution exposures and social vulnerabilities are clustered on the south and west sides of the city.16 We evaluated data from July 2021 given that July historically has higher PM2.5 readings in comparison with other months.17 In addition, there were 2 air pollution episodes in July 2021: on July 4, an expected pollution episode contributed to large but short-term increases in PM2.5, and on July 23, an unexpected pollution event that corresponded to wildfires similarly contributed to heightened PM2.5 levels over a short period of time. We examined spatial clustering in PM2.5 in relation to the spatial clustering of sociodemographic variables; we further evaluated relationships between neighborhoodlevel sociodemographic composition and PM2.5.

METHODS

Chicago is a diverse city characterized by roughly equal thirds of White, Black, and Hispanic/Latinx populations. Chicago is also one of the most segregated cities in the United States and has seen concerns regarding structural racism as a fundamental cause of inequitable pollution burdens.16

Air Pollution

Network design. Our work relied on air pollution data from a novel network of 115 sensors located on bus shelters across Chicago. We deployed the network duringthe summer of 2021 in collaboration with the city of Chicago, the academic Array of Things initiative, and JCDecaux Chicago, the local affiliate of JCDecaux SA-the world's largest outdoor advertising company-which installed sensing devices on the city's bus shelters. We also collaborated with the Environmental Law and Policy Center to support neighborhood environmental justice organizations in reviewing the network design.

The network was designed with the aim of monitoring local inequities in air pollution exposures. For 80 devices, we selected sites using a stratified random sampling design based on the approach of the New York City Community Air Survey.11 Of the remaining devices, 26 were allocated to sites selected by community partners, and 9 were sited across 3 EPA regulatory monitoring stations (3 per station). Additional details on the network design can be found in Appendix A (available as a supplement to the onlineversion of this article at http://www.ajph.org). In this analysis, we used only sites allocated through stratified random sampling.

Eclipse device. We designed devices used in the networkto provide realtime measurements of air pollution in an urban setting (for full details on the hardware, see Daepp et al.18). Each device included a Sensirion SPS30 sensor, which collected PM2.5 readings every 5 minutes, as well as sensors for relative humidity, barometric pressure, and temperature. Further details on the Sensirion SPS30 are provided in Appendix A. In addition, details on our calibration function to improve sensor accuracy to levels consistent with EPA recommendations for low-cost sensors are provided in Appendix B (available as a supplement to the online version of this article at http://www.ajph.org). Of note, daily average sensor values were highly correlated with daily averages from regulatory monitors surrounding Chicago (for details, see Appendix B and Appendix C, Figure C1, available as a supplement to the online version of this article at http://www.ajph.org).

Data cleaning and processing. From July 2 to July 31, we obtained 568156 5-minute readings from 78 sensors. Following Lu et al., we implemented a 4-step quality control procedure.19 First, we removed sensor data that were deemed as malfunctioning, determined according to a moving 5-hour standard deviation of 0 (0% of readings). Second, we removed implausible readings by excluding values of 0 and values above the measurement range of 1000 micrograms per cubic meter per manufacturer specifications (0.003%). Third, using a 75% completeness criterion, we removed readings from hours with less than 9 (of 12) 5-minute measures and from days with less than 18 (of 24) hours of data (1.86%). Finally, as a secondary check for malfunctioning devices, we assessed the extent to which sensor readings were consistent with readings from neighboring sensors.

In addition, we performed a linear regression of daily average readings for a given index sensor and its neighbors within a 5-kilometer radius and removed all readings from the index sensor if the R2 value was less than 0.6 (0.01 % of readings, affecting only a single sensor). With these criteria, 557 457 (98.1 %) of the original 5-minute readings remained.

Daily average PM2.5 values were calculated for each sensor by initially averaging 5-minute readings for each hour within a specified day (up to 24 hours), calibrating hourly data, and then aggregating those hourly averages for each specified day. With the exclusion criteria, 77 sensors remained. Preliminary analyses assessing spatial clustering in the set of device days excluded suggested no substantial clustering (Appendix C, Figure C2, available as a supplement to the online version of this article at http://www.ajph.org).

Spatial interpolation. We used inverse distance weighting (IDW) to estimate PM2.5 across 77 community areas for the entire study period and during 2 air pollution episodes (July 4, consistent with excess air pollution caused by fireworks,20 and July 23, consistent with nationwide increases in air pollution caused by wildfires on the west coast21). Chicago is divided into 77 community areas covering an average of 7.8 square kilometers. These community areas have historically been used for planning and statistical purposes and remain largely consistent with residents' contemporary perceptions of neighborhood boundaries.22

IDW interpolation allowed usto predict PM2.5 values across unknown points (i.e., reference points) on the basis of nearby points where PM2.5 is known (i.e., monitoring points). The approach assigns values to reference points through a weighted average of the values at monitoring points; monitoring points closest to a given reference point have larger weights than monitoring points further away. Weights are defined by the inverse of the distance between each reference point and monitoring point and then raised to an arbitrary power that we set equal to 2 (i.e., the square ofthe inverse distance), a value supported by both empirical cross validation and previous literature.23

We used IDW to create smoothed maps (rasters) of averaged estimated PM2.5 at a grid cell resolution of 100 x 100 meters. We then aggregated these grid cells to compute community area-level averages such that a grid cell belonged to a given community area if its centroid fell inside of it. We further evaluated the robustness of our results to the use of a different interpolation approach, ordinary kriging; the 2 approaches produced similar neighborhood-level estimates (Spearman's p 5 0.86), and thus we used the IDW approach because of its interpretability and consistency with theoretical models of air pollution spread23 and its widespread usage both in academic research23,24 and by the EPA.25

Sociodemographic Composition Variables

We used sociodemographic data from the 2015 to 2019 American Community Survey26 to measure racial/ethnic composition and the percentage of households below poverty. Regarding racial/ ethnic composition, we focused on percentages of non-Hispanic Black and Hispanic/Latinx residents because these are the 2 largest racial/ethnic minority groups in Chicago, accounting for 29.1% and 28.7% of the city's population, respectively. Census tract-level measures were aggregated to community areas such that a census tract belonged to a given community area if its centroid fell inside of it.

Statistical Analysis

Initially, we computed descriptive statistics for each outcome (interpolated PM2.5 values for July 2-31, July 4, and July 23) and composition variable. We also assessed the degree of spatial autocorrelation for each variable by calculating global Moran's I statistics. Moran's I values range from -1 to 1; values near 0 indicate no autocorrelation (i.e., randomness), positive values indicate clustering, and negative values indicate dispersion. We then mapped the distribution of PM2.5 and each composition variable at the community area level. In addition, we assessed bivariate relationships between tract-level composition variables and PM2.5 using Spearman correlation coefficients.

To model the relationship between sociodemographic composition and PM2.5, we created linear regression models adjusting for each socioeconomic composition measure over the entire study period and separately for theJuly4andJuly23 air pollution episodes. We adjusted for all 3 measures to avoid overestimating the effects of any single variable. Because air pollution is spatially patterned, violating the linear regression assumption of independence,27 we also fit a series of spatial lag models to account for spatial dependence.

Spatial lag models are similar to linear regression models, but they include in addition a lagged dependent variable reflecting the weighted average of PM2.5 values across neighboring community areas. The coefficient associated with this lagged variable (p) quantifies the strength of spatial dependence. If p is greater than 0, this indicates that PM2.5 values are positively related to those of neighboring community areas; a negative value indicates the inverse. A value of 0 indicates no dependence and renders the equation equivalent to a linear model.28 Spatial lag models, relative to other spatial regression models such as spatial error models, are often used when researchers believe that spatial autocorrelation is caused by an underlying substantive process.28,29 In the case of air pollution, we theorized that industrial zoning and related planning policies that resulted in clusters of pollution sources were ultimately caused by distal, structural processes of discrimination and residential segregation.30

To evaluate the presence of autocorrelation in our regression models, we calculated Moran's I values for residuals using first-order queen contiguitybased weights. Models incorporating queen contiguity-based weights yielded lower Akaike information criterion (AIC) values than preliminary models employing (1) rook contiguity-based weights and (2) the minimum distance for all community areas to have at least 1 neighbor and were thus chosen for our analysis. Pseudo P values for Moran's I statistics were generated via a Monte Carlo simulation of 999 random replications. We considered autocorrelation to be present if pseudo P values were less than .05.

We used R version 4.1.0 (R Foundation for Statistical Computing, Vienna, Austria) in conducting our analyses; we used the gstat package to perform IDW and the spdep package to generate spatial lag models. All models were fit with community area-level data; as a sensitivity analysis addressing concerns regarding the modifiable areal unit problem, we replicated our main analyses at the census tract level.

RESULTS

Table 1 summarizes descriptive statistics across the 77 community areas. The average level of interpolated PM2.5 during the study period was 13.16 pg/m3 (range 5 11.3-14.6 pg/m3). Average interpolated PM2.5 levels were slightly elevated on July 4 (14.2 pg/m3; range = 10.6-17.3 pg/m3) and doubled on July 23 (26.6 pg/m3; range = 24.1-28.3 pg/m3). The network design resulted in an average of 1 sensor allocated to each community area (range = 0-4). The average community area was composed of 38.1% Black residents (range 5 0.4%-96.5%) and 26.0% Hispanic/Latinx residents, with an average of 19.6% of households below poverty (range 5 3.5%-53.6%). Consistent with known racial and economic segregation patterns in Chicago, as shown in Appendix C, Figure C3 (available as a supplement to the online version of this article at http://www.ajph.org), Black residents were clustered in areas on the west and south sides (Moran's 15 0.71; P 5 .001); Hispanic/Latinx residents were clustered in areas on the northwest, southwest, and south sides (Moran's I5 0.63; P 5 .001); and the percentage of households below poverty was generally larger along the outer edge of the city (Moran's I5 0.51; P 5 .001).

Figure 1 illustrates the spatial distribution of interpolated PM2.5 values during the entire study period and for each air pollution episode. Interpolated values of PM2.5 displayed substantial spatial clustering, indicated by large Moran's I values (overall: 0.74; July 4: 0.81; July 23: 0.66; all pseudo Ps 5 .001). Notably, higher PM2.5 levels appeared to cluster primarily along the west side during the study period overall and the July 23 pollution episode, whereas higher levels appeared to cluster alongthe south side during the July 4 pollution episode.

We provide aspatial Spearman correlation coefficients in Appendix D, Table D1 (available as a supplement to the online version of this article at http://www.ajph.org), and focus the remainder of our results on regression models. Specifically, we focus on adjusted spatial lag models, as Moran's I values were reduced to nearly 0 and pseudo P values were all above .05, indicating that spatial models sufficiently removed spatial autocorrelation; furthermore, these models achieved better fits than corresponding linear regression models. For the period from July 2 to July 31, Table 2 shows substantial evidence of a positive relationship between Hispanic/Latinx residential composition and PM2.5 (B 5 0.47; 95% confidence interval [CI] 5 0.10,0.84). Relationships between Black residential composition and percentage of households below poverty were also positive but marked with imprecision.

DuringtheJuly 4 episode, the adjusted spatial model suggested positive, substantial relationships between PM2.5 and both Black residential composition (B 5 1.13; 95% CI 5 0.44,1.82) and Hispanic/Latinx residential composition (B 5 0.67; 95% CI 5 0.01,1.33). The relationship between percentage of households below poverty and PM2.5 was positive but marked with imprecision once again. Finally, duringtheJuly 23 episode, the adjusted spatial model showed that all sociodemographic composition variables had a positive relationship with PM2.5 but were marked with imprecision.

Sensitivity analyses in which census tracts were used yielded results similar to those of our main analyses at the community area level, albeit with increased precision and substantial autocorrelation in adjusted spatial lag models (Appendix D, Table D2, available as a supplement to the onlineversion of this article at http://www.ajph.org).

DISCUSSION

In this study, we examined differences in sociodemographic disparities in PM2.5 across long-term monitoring periods versus during short-term air pollution episodes. We have provided evidence of spatial variation across neighborhoods in levels of PM2.5 both across the study period and during specific high-pollution episodes characterized by social events (July 4) and wildfires (July 23). Exposures were substantially higher in areas with larger compositions of Hispanic/Latinx residents across the entire study period and substantially higher in areas with larger compositions of Hispanic/Latinx and Black residents during the July 4 episode. No sociodemographic composition variable was associated with PM2.5 during the July 23 episode. Our results demonstrate the effectiveness of a city-wide, real-time sensing network for measuring ongoing and episodic neighborhood-level disparities in poor air exposures.

Evidence of heightened PM2.5 in areas with relatively more Hispanic/Latinx and Black residents is consistent with literature documenting racial and ethnic disparities in PM2.531 as well as studies linking racial residential segregation to environmental disparities.30,32 Our study adds to this body of literature in 2 key ways. First, we demonstrated differences in the groups affected in short-term episodes versus over longer time periods. Although neighborhoods with larger proportions of Hispanic/Latinx residents appeared to have the largest PM2.5 burden overall, July 4 may be an especially harmful pollution event disproportionately affecting areas with larger proportions of Black residents. These results point to the need for more targeted interventions that consider both spatial and temporal contexts. Although similar findings might be obtained by downscaling models that combine regulatory monitoring data with chemical transport models or satellite data, a particular benefit of a real-time monitoring approach is its potential to make findings available to policymakers immediately after or even during a pollution episode, supporting mitigation efforts.

Second, our work offers evidence that city-wide high-pollution events such as the wildfire-related episode on July 23 may result in minimal variations across sociodemographic composition, making dense, real-time monitoring particularly beneficial if such events obscure disparities occurring during more typical PM2.5 exposure days.

Limitations

Our study is subject to several key limitations. First, logistical delays in sensor deployment resulted in missing data over space and time. Of the 80 sensors intended for analysis in this study, 3 could not be deployed until the end of July; a slow rollout over the first week of monitoring as well as occasional intermittent sensor failures further limited the sample size to 59 sensors on July 4 and 71 on July 23. However, the data collected were robust against data quality issues, as our quality control procedure identified issues with less than 2% of the 5-minute readings collected and no spatial clustering was detected in the fraction of missing device days.

Second, low-cost sensors can exhibit low accuracy for regulatory purposes. We sought to address this limitation through calibration and focusing on the comparison of trends overtime and of sensors with each other; however, exact estimates should be treated with caution because the results may have been affected by systematic sensor error. Our network thus cannot substitute for regulatory networks; rather, as a complement to sparse regulatory monitors, our approach can help prioritize monitoring and mitigation of disparities in air pollution. We were also able to reduce random error by aggregating data to daily average values; however, this methodological decision limited our ability to take advantage of the high temporal resolution of the sensor readings.

Third, the generalizability of our results may be limited by our siting of sensors at bus shelters. However, there were also benefits to the use of bus shelters; all devices were placed in similar contexts and at a consistent height, and, because technicians regularly visit these bus shelters, the siting approach facilitated maintenance that mitigated data loss.18 Moreover, bus shelters represent locations where people congregate and-importantly-breathe. Also, our analyses were limited to July 2021 and may not generalize to other months; however, our work does provide a framework for extending such a monitoring network over longer periods.

Finally, land use regression models could offer increased precision relative to IDW in estimating hyperlocal variations in PM2.5. However, these models incorporate temporally invariant covariates (e.g., physical geography) that would smooth out key real-time fluctuations. A lack of ground-truth data beyond what the 4 EPA sites capture further limited our ability to validate our models.

Policy Implications

We have described the development of a dense, real-time sensor network that enables characterization of spatial variations in PM2.5 at the neighborhood scale. Examining a period characterized by multiple short-term air pollution episodes, we showed persistent inequities throughout the study period as well as important variations in the groups most affected by different short-term events. It follows that interventions seeking to address inequities in air pollution exposures may need to contend with how inequities vary across time and specific pollution events. Our results show how low-cost sensors can be used in a large, urban setting for monitoring environmental inequities, offering an approach that can be reproduced by public health departments in other cities seeking to promote environmental justice. >4JPH

Sidebar

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CONTRIBUTORS

P. Esie, M.I.G. Daepp, and S. Counts contributed to study design and writing. M. I. G. Daepp, A. Roseway, and S.

Counts contributed to data collection. P. Esie and M. I. G. Daepp contributed to data analysis. All ofthe authors contributed to study conception.

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CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

HUMAN PARTICIPANT PROTECTION

Because no human participants were involved, this study was exempt from institutional board review.

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DETAILS

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Communities, Mistrust, and Implementation: Addressing a Large Gap in the National Strategy for COVID-19 and Future Pandemics

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ABSTRACT (ENGLISH)

The United States is at a turning point in responding to the ongoing pandemic. Although the severity of disease associated with the rapidly evolving severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) appears to have decreased, the huge number of infections and reinfections are impacting quality of life, disrupting public health and economic and social functioning, and presenting a potentially large post-acute epidemic burden from "long COVID," even while additional variants continue to emerge with unpredictable risks.

FULL TEXT

The United States is at a turning point in responding to the ongoing pandemic. Although the severity of disease associated with the rapidly evolving severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) appears to have decreased, the huge number of infections and reinfections are impacting quality of life, disrupting public health and economic and social functioning, and presenting a potentially large post-acute epidemic burden from "long COVID," even while additional variants continue to emerge with unpredictable risks.

NATIONAL STRATEGIES FOR MANAGING CURRENT AND FUTURE PANDEMICS

This has promoted a re-evaluation of national strategies for managing the current and future pandemics. Commentators such as Emanuel et al.1 have proposed focusing on appropriate risk thresholds; rebuilding the public health system; improving testing, disease, and genomic surveillance systems; building ventilation systems and personal protective devices; investing in next-generation vaccines; and accelerating the development of antiviral treatments. Coupled with the recent announcement of grand initiatives being undertaken, such as the $150 million Pandemic Prevention Institute funded by the Rockefeller Foundation to support global data collection and the $500 million Center for Forecasting and Outbreak Analytics being created by the US Centers for Disease Control and Prevention (CDC),2 a consensus is emerging on the broad outlines of a comprehensive response to the current and future pandemics.

ADDRESSING MISTRUST

But does this vision adequately address fundamental aspects of pandemics? Although many have acknowledged the challenge of public distrust of health agencies and evidence-based policies resulting in a lack of adherence to riskmitigation measures, a national strategy for addressing such distrust is lacking. This is a glaring omission, considering that, for example, vaccine hesitancy and denial are likely responsible for a large portion of the estimated 319 000 excess COVID-19 deaths that vaccinations could have been prevented in the United States (as of April 30,20223) since vaccines became widely available.

In terms of those affected, national surveys have shown that skepticism and vaccine hesitancy are strongly associated with Republican political preferences and conservative religious beliefs.4 As another example, distrust of institutions (based in large part on a long history of racism related to health care and medical research) leading to low rates of vaccination has been shown to be likely responsible for the disproportionate impact of COVID-19 on African Americans,5 one ofthe many health inequities made starkly apparent by the pandemic.

The challenge posed by distrust, of course, is complex, as it relates to some segments ofthe population with respect to institutions, political parties, scientific experts, and media outlets. Distrust has also been fueled by a lack of clear communication about the need to change policies as scientific information evolved, misinformation, uncertainty about the content or sources of information, and contradictory information. Surveys tracking public attitudes found that 78% of adults say they have heard at least one of eight different false statements about COVID-19 that they believe to be true or they are unsure of its veracity.6

We propose that a national strategy is essential to address distrust as a critical factor in controlling pandemics and will require attention and investments in several aspects of "population health implementation science," an area that remains consistently underrecognized, underfunded, and understudied.7 These include, for example, risk communication methods; the epidemiology of information and disinformation; the impact on attitudes and behaviors of popular media, social media, and other forms of communication; controlled trials of policy and messaging interventions; and the direct involvement of communities as sources of vital information and participants in the planning and conduct of research. In addition, a national strategy is needed to accommodate regional differences, including the testing and adoption of optimal strategies that may differ widely within and between populations and regions in terms of racism and ethnicity, culture, socioeconomic status, urban versus rural, levels of education, gender identity, and other factors.

COMMUNITY-BASED PARTICIPATORY RESEARCH AND EDUCATION

We describe an example that was implemented first in Los Angeles, CA, during April 2021 to April 2022, and then in 34 cities across the country. The Vaccinate LA campaign is a joint effort by 14 units of the University of Southern California (USC) and Children's Hospital Los Angeles, two local creative agencies: Wondros, and Everyone Can Eat Productions, more than 160 community-based organizations, the USC Keck School of Medicine Stay Connected LA program, and a community advisory board.8 The campaign implemented a mass media educational effort focused on Black and Latino/a/x populations, developed and deployed trainings of community vaccine navigators, and assessed the impact on attitudes, beliefs, and behaviors toward COVID-19 vaccinations.

The goal was to address pervasive misinformation and distrust at the community level and provide access to COVID-19 vaccines in 34 zip codes in the eastern and south-central areas of Los Angeles experiencing low vaccination rates, high hospitalizations, and deaths. Using a community-based participatory research and education approach,9 the program incorporated listening sessions (focus groups and town-hall meetings), information delivery, interactive and field-based activities (pop-up vaccination clinics or sites), and social media. Community vaccine navigators (promotores de salud and community health workers) who speak Spanish and English were trained and deployed doorto-door, at community events, and at pop-up vaccination clinics, and they provided one-on-one counseling to address misinformation, increase trust, respond to frequently asked questions regarding fears and concerns of vaccinations, and link individuals directly to vaccines (M. Kipke, August 2022, Vaccinate LA Final Report to the W. M. Keck Foundation).

Forty-two focus groups with more than 300 participants and 21 town hall meetings with more than 200 participants informed the campaign. These and other baseline and posttestdata, changes in frequently asked questions, social media data analytics, and surveys revealed changes in attitudes and beliefs regarding vaccinations. In early 2022, the program's success led to its adoption and adaptation by the National Alliance for Hispanic Health, an organization serving more than 15 million Hispanics nationwide, which, in turn, resulted in the training of 450 community vaccine navigators. Training included updated COVID-19 information, approaches to handling misinformation and frequently asked questions, debunking myths and addressing conspiracy theories, and the use of evidence-based approaches and innovative multimedia strategies including culturally adapted films ("Granny's Birthday," "Of Reasons and Rumors") developed by local Latino/a/x and Black filmmakers.

A digital communication campaign was conducted with Hollywood Health and Society, producing "Life Noggin," an animated science show on YouTube reaching 3.26 million viewers10; postings for social media, and production of 41 #ShareYourWhy videos, resulting in 2.9 million views. A fotonovela in Spanish was produced and disseminated through newspapers, including La Opinion, with a Spanish-language readership of 540000. Pop-up events were conducted with community partners to get shots in arms and supported local artists in an art-meets-public health program (Stay Connected Los Angeles).11

At a total cost of $1.2 million along with efforts coordinated with the Los Angeles County Department of Public Health, these community-based participatory research and education approaches resulted in a vaccination rate that was 30% higher than predicted in the targeted areas based on Los Angeles County averages. Nationally, with support from the CDC, trained vaccine navigators conducted one million community vaccine navigator consultations across the United States resulting in 500 000 shots in arms in 38 cities nationwide. While promising, limitations that became apparent included unclear generalizability to Blacks across the country, the need to stay current with an ever-changing virus, the wide spread of the virus across multiple geographic areas, and the need to combat a constant stream of misinformation.

COMMUNITY-BASED IMPLEMENTATION SCIENCE

This experience and a handful of other examples12,13 align with emerging principles of population health implementation science that must become part of national strategy to address pandemics. Such a strategy should include national funding of research as well as regional centers of excellence that can develop and evaluate approaches tailored to specific communities, with engaged community participation in the design and implementation being an essential component. Such strategies need not be expensive; in fact, public health implementation strategies developed in resource-poor countries have been shown to be of value in rich countries, an example of reverse innovation.14 Most importantly, programs that are developed with and for communities, utilizing community-based and participatory principles, can reach populations with greater accuracy and effectiveness and provide a trusted source of information for sound community, familial, and individual decision-making. /4JPH

Sidebar

CORRESPONDENCE

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CONTRIBUTORS

H. Hu conceptualized the article, wrote the first draft, and revised the article. F. Gilliland and L. Baezconde-Garbanati contributed text to the first draft and contributed to the revised article.

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CONFLICTS OF INTEREST

The authors report no conflicts of interest.

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DETAILS

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Taggart, T.,PhD.M.P.H., Ransome, Y.,DrP.H.M.P.H., Andreou, A., M.P.H., Song, I., M.A., Kershaw, T., PhD., & Milburn, N., PhD. (2023). Activity space assessments to investigate neighborhood exposure to racism-related stress and related substance use among young black men: Connecticut, 2019. American Journal of Public Health, Suppl.Supplement 2, 113, S136-S139. Retrieved from https://www.proquest.com/scholarly-journals/activity-space-assessments-investigate/docview/2842084617/se-2?accountid=211160

Objectives. To use activity space assessments to investigate neighborhood exposures that may heighten young Black men's vulnerability to substance use and misuse. Methods. We surveyed young Black men in New Haven, Connecticut in 2019 on the locations (activity spaces) they traveled to in a typical week and their experiences of racism and any alcohol and cannabis use at each location. Results. A total of 112 young Black men (mean age = 23.57 years; SD = 3.20) identified 583 activity spaces. There was significant overlap between racism-related events and substance use (alcohol and cannabis use) at specific locations. Areas with a higher prevalence of violent crime also had a greater frequency of racism-related events and substance use. Conclusions. An activity space approach is a promising method for integrating objective and subjective experiences within neighborhood contexts to better understand the frequency and co-occurrence of racism-related stress and substance use among young Black men. (Am J Public Health. 2023;113(S2): S136-S139. https://doi.org/10.2105/AJPH.2023.307254)

Loeb, T. B., PhD., Banks, D., PhD., Ramm, K., B.S., Viducich, I., M.S.W., Beasley, Q., B.A., Barron, J., B.A., . . . Hamilton, A. B.,PhD.M.P.H. (2023). Achieving health equity and continuity of care for black and latinx people living with HIV. American Journal of Public Health, Suppl.Supplement 2, 113, S107-S109. Retrieved from https://www.proquest.com/scholarly-journals/achieving-health-equity-continuity-care-black/docview/2842084284/se-2?accountid=211160

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Tan, Kevin,PhD., M.S.W., Mahoney, Jenna,M.S.W., L.C.S.W., Campbell, J., M.S.W., Laursen, T., A.L.M., Kemp, D., EdD., & Kim, Bo-Kyung Elizabeth,PhD., M.S.W. (2023). The promise of racial healing to achieve health equity through school-based prevention. American Journal of Public Health, Suppl.Supplement 2, 113, S119-S123. Retrieved from https://www.proquest.com/scholarly-journals/promise-racial-healing-achieve-health-equity/docview/2842081951/se-2?accountid=211160

In the wake of the American Public Health Association's formal declaration of racism as a public health crisis, there is an urgent need for more approaches to promoting the socioemotional well-being of K-12 Black, Indigenous, people of color (BIPOC) students, educators, and families.1 Cumulative exposures and reexposures to direct and indirect acts of racism can adversely affect emotion regulation and the ability to sustain meaningful relationships, disrupting socioemotional health and well-being.2 Race-based stress can lead to racial trauma, and merely perceived experiences of racial discrimination can produce such stress.2Household and community-level experiences of racial trauma have effects similar to those of other adverse childhood experiences,3,4 and calls to address racism within K-12 schools by interrupting and preventing the transmission of intergenerational cycles of trauma at the systemic, institutional, and individual levels are well placed.5,6 Such action will need to counteract the whitewashing of the public K-12 curriculum, evident through the censoring of antiracist books and the movement to ban the teaching of accurate US history about race, exacerbating generations of systemic disadvantage in BIPOC communities.7

Bernard, D. L., PhD. (2023). Toward a socioecological model of training and mentoring to reduce disparities in mental health service use among black youths. American Journal of Public Health, Suppl.Supplement 2, 113, S133-

S135. Retrieved from https://www.proquest.com/scholarly-journals/toward-socioecological-model-training-mentoring/docview/2842081773/se-2?accountid=211160

Across clinical settings, significant racial disparities exist in access to and the quality of mental health services. Relative to other racial/ethnic groups, Black youths are universally underserved in mental health care, despite the profoundly increasing rates of unmet psychological need within this population.1 Although the reasons behind these disparities are multifaceted, attention is often placed on individualor community-level characteristics (e.g., stigma, mistrust, socioeconomic factors) to explain why such disparities continue to persist. However, public health professionals (PHPs) may also contribute to and perpetuate these disparities, as their lack of culturally responsive training and mentorship leave them ill-equipped to appropriately respond to the unique challenges that Black youths encounter in our highly racialized society.2The article by Hampton-Anderson et al. (p. S140) is an important contribution to the literature; it asserts that the reduction of mental health care disparities is closely tied to the provision (or lack thereof) of culturally relevant trainings and mentorship to PHPs. Specifically, the authors ground their article within a socioecological framework and articulate the critical need for culturally responsive trainings and mentorship across three key areas. First, they contend that training and mentorship are needed to bolster the awareness and skills of PHPs to understand how risk and resilience among Black youths are shaped by social and cultural factors embedded across ecological systems (e.g., schools, neighborhoods). Second, Hampton-Anderson et al. assert that training and mentorship are also needed to assist PHPs in flexibly balancing treating and advocating for Black youths seeking mental health services who may also be navigating inequitable systemsand policies that may further compound presenting problems (e.g., encounters with law enforcement). Third, they note that training and mentorship are needed to enhance case conceptualization and approaches to treatment selection from a strengths-based perspective. They call upon such case conceptualizations to build upon cultural strengths, values, and practices (e.g., incorporation of the family) to address presenting concerns more effectively. Targeting training as an intervention point to reduce disparities has significant downstream effects that can fundamentally alter how future generations of PHPs are taught, how clinical interventions are approached, and how issues pertaining to race and culture are prioritized within clinical practice.

Bowleg, L., & Landers, S. (2023). Intergenerational trauma and structural racism: New mentorship approaches to HIV and substance use prevention and treatment. American Journal of Public Health, Suppl.Supplement 2, 113 doi:https://doi.org/10.2105/AJPH.2023.307316

This issue features a collection ofarticles under the umbrella of "HIV, Substance Use, and Trauma: Mentoringto DismantleStructural Racism." Historically, most research on racial discrimination and trauma and HIVand substance use has examined these issues primarily as individual-level processes. Echoingthemes from Krieger's ecosocial theory (https://bit.ly/3MC6vIk), the articles in this collection seekto advance knowledge about how structural racism and intergenerational trauma are embodied for racialized US communities, resulting in disproportionate rates ofHIV and substance abuse.

Wyatt, G. E., PhD., Chin, D., PhD., Loeb, T. B., PhD., Norwood-Scott, E., McEwan, J. A., M.P.H., Zhang, M., M.S., . . . Liu, H., PhD. (2023). Women-centered program for women of color (WC4WC): A community- based participatory, culturally congruent sexual health intervention in los angeles county, california. American Journal of Public Health, Suppl.Supplement 2, 113, S110-S114. doi:https://doi.org/10.2105/AJPH.2023.307296

The Women-Centered Program for Women of Color, a culturally congruent sexual health intervention, was implemented in 2018 in Los Angeles County, California, according to the principles of community-based participatory research: enhancing community capacity, establishing sustainable programs, and translating research findings to community settings. Participants exhibited significantly increased knowledge of and interest in preexposure prophylaxis (PrEP) and postexposure prophylaxis (PEP) over time, but no significant change in condom use was evident. Booster sessions are needed to maintain interest in PrEP and PEP given concerns about reproductive and sexual health. (Am J Public Health. 2023; 113(S2):S110-S114. https://doi.org/10.2105/AJPH.2023.307296)

Zhen-Duan, J., Colombo, D., B.A., & Alvarez, K., PhD. (2023). Inclusion of expanded adverse childhood experiences in research about Racial/Ethnic substance use disparities. American Journal of Public Health, Suppl.Supplement 2, 113, S129-S132. Retrieved from https://www.proquest.com/scholarly-journals/inclusion-expanded-adverse-childhood-experiences/docview/2842070893/se-2?accountid=211160

Investigations of the impact of adverse childhood experiences (ACEs) on health outcomes have been of major public health importance in the past several decades. The original studies of ACEs were monumental because they unveiled that seemingly common family-level childhood stressors (e.g., maltreatment, family dysfunction) affected individuals' health throughout their lifetime.1 Individuals who experience ACEs, which are stressful and potentially traumatic experiences during childhood, are more likely to engage in substance use2,3 and suffer from the main leading causes of death (e.g., cardiovascular and respiratory diseases, cancer).4 However, a major limitation of the original ACE studies was that participants were mostly White, middleincome, highly educated adults.5 Thus, although public health interventions have been developed to target ACE prevention and detection, these were developed while the experiences of a substantial portion ofthe population were neglected. In addition, assessments of community-level stressors that particularly affect racially/ethnically minoritized and economically diverse populations, many of which are rooted in structural racism and discrimination,6 remain excluded from this work.We argue that it is imperative to expand the conceptualization and assessment of adversity in substance use research, as exposure to both family and community-related ACEs (e.g., community violence, discrimination) increases the risk of alcohol and drug misuse, which is causally associated with disease, disability, and early death. We posit that increasing the number of studies focused on examining the ways community-level adversities affect substance use risk is crucial in health equity research, as community-level adversities disproportionately affect individuals of color and those of low-income backgrounds.

Berke, D. S., PhD., & Collins, M. L., A.B.A. (2023). Toward a community- led, public health approach to multilevel violence prevention for black and brown transgender and gender- diverse communities. American Journal of Public Health, Suppl.Supplement 2, 113, S115-S118. Retrieved from https://www.proquest.com/scholarly-journals/toward-community-led-public-health-approach/docview/2842069848/se-2?accountid=211160

There is currently a war on Black and Brown transgender and nonbinary (TNB) people in America. TNB people include those whose gender differs from the sex assigned to them at birth, those who do not identify with gender binary constructs of "man" or "woman," and those who are expansive or fluid in their gender. The year 2021 was the deadliest on record for TNB communities, with at least 57 documented murders ofTNB individuals; 66% of the victims were Black women, 86% were people of color, and 69% were killed with a gun.1 These numbers are likely an underestimate, as TNB victims are often misgendered in official reports1 and most murders of TNB people remain unsolved. Beyond lethal violence, data indicate that nearly one in 10 TNB individuals have been physically assaulted in the past year and 47% experience sexual violence in their lifetimes.2Victimization ofTNB people must be understood within the larger context of discrimination at the intersection of interlocking systems of oppression (e.g., racism, sexism, heterosexism, and cisgenderism). Discrimination against individuals and structural sources of oppression are mutually reinforcing or co-constitutive and jointly contribute to interpersonal violence against TNB people. For Black and Brown TNB people, community violence linked to cisgenderism and gender oppression is intertwined with White supremacy.2 TNB people of color are uniquely targeted and criminalized by police, government, and media, as evident by widespread dissemination of misinformation in news, political scapegoating, biased law enforcement, and legislation designed to exclude Black and Brown TNB people from public life (e.g., "walking while trans" bills).3Because of discrimination, TNB people of color experience disproportionately higher rates of unemployment, housing insecurity, and incarceration compared with White TNB people. In the National Transgender Discrimination Survey (NTDS),2 Black TNB people had nearly twice the unemployment rate of all TNB respondents (26% vs 14%) and over three times the unemployment rate of the broader US population (7%). Black transgender respondents also reported a much lower rate of homeownership (14%) compared with transgender respondents of all races (32%) and the general US population (67%). An alarming 41% of Black respondents reported experiencing homelessness compared with 19% of all transgender respondents. Thirty-fve percent of Black respondents had been arrested or held in a cell because of bias compared with 7% of all transgender respondents.

These disparities are directly linked to the pervasive violence to which Black and Brown TNB people are exposed in the public sector (e.g., employment, housing, health care, prisons).2In addition to its direct influence on morbidity and mortality, community violence and discrimination have significant health impacts, elevating risk for depression, anxiety, suicidality, substance use disorder, and HIV.4,5 Further, community violence perpetrated in the public sector disproportionately erodes trust in the very organizations upon which TNB communities of color depend to access life-saving and quality of life-supporting services. For example, 34% of Black NTDS respondents, compared with 23% of respondents of all races, reported delaying necessary health care because of anticipated violence or mistreatment by providers.

Hampton-Anderson, J., Novacek, D. M., PhD., Zhen-Duan, J., Latimer, S., M.P.H., Perry, T., B.A., & Renard, D., B.A. (2023). Redefining the role of public health professionals serving black youths seeking mental health care: Implications for training and mentoring. American Journal of Public Health, Suppl.Supplement 2, 113, S140-S148. doi:https://doi.org/10.2105/AJPH.2022.307194

Attrition rates for Black youths in mental health treatment settings are high, and the extant literature suggests this may be because treatment is not meeting their unique needs. Public health professionals, defined here as all individuals who work to increase the well-being of youths, can play a major role in changing these outcomes. The purpose of this article is to suggest a broader scope of practice, or a redefined role, for public health professionals who work with Black youths seeking outpatient mental health care and to explicate ways in which training and mentoring can help accomplish this goal. Bolstered by a socioecological conceptual model, we suggest 3 standards of practice that we believe must be satisfied to meet the requirement for this redefined public health professional role: using a sociocultural framework, exercising flexibility in one's assigned role, and understanding and incorporating culturally specific strengths and protective factors into care. (Am J Public Health. 2023;113(S2):S140-S148. https://doi.org/10.2105/AJPH.2022.3071 94)

Burton, K. L., PhD., Ritchwood, T. D., PhD., & Metzger, I. W., PhD. (2023). Structural racism and racial trauma among african americans at elevated risk for HIV infection. American Journal of Public Health, Suppl.Supplement 2, 113, S102-S106. Retrieved from https://www.proquest.com/scholarly-journals/structural-racism-racial-trauma-among-african/docview/2842069477/se-2?accountid=211160

Forty years into the HIV epidemic, we have witnessed remarkable achievements. People living with HIV (PLWH) can thrive because of the availability of antiretroviral therapy (ART), with a lifespan like those without HIV. We learned that "U = U"; that is, we now know that PLWH whose HIV cannot be detected by laboratory testing cannot sexually transmit the virus to their partners. The advent of preexposure prophylaxis (PrEP) expanded biomedical HIV prevention tools, enabling people without HIV to protect themselves from infection. While we have the necessary HIV prevention and treatment tools to end the HIV epidemic, such a goal remains elusive. Unfortunately, these great achievements in research and practice have been accompanied by profound failures, including inequitable access to new HIV prevention and treatment options among African Americans.Despite accounting for only 13% of the US population, African Americans comprise 42% of all new HIV diagnoses.1 For members of key subpopulations, the situation is even more dire; approximately half of African American men who have sex with men (MSM) are expected to contract HIV in their lifetime.1 Among all cisgender women, African Americans identifying as cisgender comprise 54% of new diagnoses, and African American transgender women comprise 46% of new diagnoses among all women.1 Compared with their peers from other racial/ethnic backgrounds, African Americans have lower rates of engagement in the HIV treatment continuum.1 In 2019 alone, for every 100 African Americans diagnosed with HIV, 74 received some HIV care, 56 were retained in care, and 61 were virally suppressed, indicating lower engagement than their White and Hispanic/Latino peers.1 While individual and social factors (e.g., HIV-related stigma, HIV knowledge, poverty, sexual risk) are frequently cited as the primary contributors to low engagement in the HIV prevention and treatment continuum, the spotlight on such factors masks the broader social, political, and economic conditions that generate and maintain observed racial disparities in HIV infections and related outcomes, such as structural racism and repeated exposures to racial trauma.2,3In this article, we discuss the influence of structural racism (i.e., the way in which society promotes and sustains racial discrimination through larger systems and macro-level conditions that limit the opportunities, resources, power, and well-being of racial minorities) and racial trauma (i.e., the emotional injury resulting from exposure to various forms of racism, racial discrimination, and racial bias) on HIV-related outcomes among African Americans. We conclude with recommendations aimed at addressing these factors to end racial disparities observed in the HIV epidemic.

Bounds, Dawn T,PhD., P.M.H.N.P.-B.C., Rodrigues, Sarah M,B.S.N., R.N., & Milburn, N. G., PhD. (2023). Strengthening families to disrupt intergenerational health InequitiesWith adolescents at risk for commercial sexual exploitation, substance use, and HIV. American Journal of Public Health, Suppl.Supplement 2, 113, S124-S128. Retrieved from https://www.proquest.com/scholarly-journals/strengthening-families-disrupt-intergenerational/docview/2842069447/se-2?accountid=211160

Individuals aged 13 to 24 years account for one out of every five new HIV diagnoses in the United States.1 The commercial sexual exploitation (CSE) of children is a major risk factor for transmission of HIV and other sexually transmitted infections.2 CSE is a complex crime encompassing recruitment of minors for the performance of commercial sex acts, buying sexual services, and "survival sex" or the exchange of any sexual activity for basic needs regardless of the monetary value.2 While children from every demographic in the United States have experienced CSE, minoritized adolescents-particularly those identifying as racially/ethnically minoritized or minoritized because of sexual preference or gender identity (lesbian, gay, bisexual, transgender, queer or questioning, or other LGBTQ+]) are disproportionately vulnerable.2The substance abuse, violence, and HIV/AIDS syndemic refers to the documented clustering of substance abuse, violence (including CSE), and HIV among marginalized groups.3 A syndemic lens views these phenomena as interrelated health disparities occurring within a broader milieu of power relations, trauma, and structural inequities.3 A syndemic approach to CSE prevention recognizes the contribution of social environments to vulnerability and centers families and communities as key protective resources.4Family-based public health interventions must shift away from the historical focus on individual risk factors (e.g., gender, race, sexual orientation) to adequately consider how identity, historical trauma, and systemic and internalized oppression (sexism, racism, homophobia, and transphobia) affect minoritized individuals' vulnerabilities and disproportionate exposure to adversity.2 Key to preventive public health approaches is recognizing that adversity-impacted adolescents who simultaneously experience adverse childhood experiences, financial strain, and housing instability are most vulnerable to CSE, substance use, and HIV infection. While racially/ethnically minoritized adolescents navigate added burdens of racial stress, trauma, and discrimination, their parents are shouldering the added responsibility (and stress) of enabling their children to cope with racism and discrimination.5 Public health practitioners working with high-risk populations must therefore be careful not to perpetuate narratives about minoritized families that fail to examine how oppressive power structures impede healthy family functioning.

Taggart, Tamara,PhD., M.P.H., Smiley, Sabrina L, PhD,M.P.H., M.C.H.E.S., & Ritchwood, T. D., PhD. (2023). Advancing public health and social equity through research, training, and action. American Journal of Public Health, Suppl.Supplement 2, 113, S98-S101. Retrieved from https://www.proquest.com/scholarly-journals/advancing-public-health-social-equity-through/docview/2842069390/se-2?accountid=211160

Despite advances in prevention and treatment, people of color in the United States are at heightened risk for substance use and HIV because of underlying structural and social inequities. Although racism, stigma, and discrimination are known drivers of disparate substance abuse and HIV outcomes, public health efforts to advance research and support the systemic policy and programmatic changes needed to address racial and social inequities have been inconsistent in approach and implementation. In recent years, highly publicized miscarriages of justice and civil rights violations (e.g., murder of George Floyd and other national and international incidents of police brutality, disproportionate burden and impact of the COVID-19 pandemic on communities of color, and forced sterilization of women in immigrant and criminal detention facilities) have propelled systemic inequities and racial trauma to the forefront of public discourse, ushering in renewed attention to these longstanding issues.Still, research examining the ill effects of racism, stigma, and discrimination on HIV and substance use outcomes, as well as potential evidence-based solutions, remain limited in their capacity to sufficiently advance health equity. There remains an urgent need to clarify how harmful structural racism is to substance use and HIV outcomes and how it, along with intersectional stigma and discrimination, uniquely affects different populations. For this research to be responsive, relevant, and culturally grounded, greater community engagement, including the inclusion of research perspectives from Black people, Indigenous people, and other people of color (BIPOC), should be prioritized.In this AJPH special issue, we highlight the work of early career investigators who completed the HIV/AIDS, Substance Abuse, and Trauma Training Program. This is a mentored research training program funded by the National Institute on Drug Abuse. It provides multidisciplinary, state-of-the-art training to better equip early career investigators to advance National Institutes of Health-funded research that investigates and challenges practices in racialized systems (e.g., education, employment, health care, and criminal justice) that stymie public health efforts to achieve health equity. Central to this program is mentoring to support rigorous communitydriven research with special attention to the challenges that new investigators, especially BIPOC, face that constrain opportunities and stifle creative approaches and solutions to our most pressing public health challenges.The articles in this issue investigate a range of public health challenges, including community violence, racial trauma, HIV, substance use, and mental health problems, calling for a paradigm shift in the training, theoretical frameworks, methodological and intervention approaches, and policies used to achieve health equity.

Smith-Clapham, A., Childs, J. E., M.S.W., Cooley-Strickland, M., Hampton-Anderson, J., Novacek, D. M., PhD., Pemberton, J. V., PhD., & Wyatt, G. E., PhD. (2023). Implications of the COVID-19 pandemic on interpersonal violence within marginalized communities: Toward a new prevention paradigm. American Journal of Public Health, Suppl.Supplement 2, 113, S149-S156. doi:https://doi.org/10.2105/AJPH.2023.307289

During the COVID-19 pandemic, reports of domestic violence across the United States increased from 21% to 35%. Stay-at-home orders, designed to protect the public against the spread of COVID-19, along with heightened societal stressors as a result of the global pandemic, inadvertently increased rates of illicit drug and alcohol use, job loss, and isolation, resulting in increased stress and nonphysical (e.g., psychological, emotional, economic, technological) abuse that often escalated to physical violence. These processes were exacerbated in marginalized communities. These risks were heightened among Black women and Latinas, who experience high rates of domestic violence, long-standing distrust in law enforcement, and compromised self-reporting or anonymous reporting of abuse. We make recommendations for training key stakeholders (e.g., law enforcement, mental health clinicians, and public health care professionals) to facilitate the safety and well-being of domestic violence survivors and to better manage prevention or intervention efforts targeted at domestic violence. We make public health policy suggestions for individuals, communities, and governing structures. (Am J Public Health. 2023;113(S2):S149-S1 56. https://doi.org/10.2105/AJPH.2023.307289)

Shatas, A., M.S., & Hubbell, B., PhD. (2022). Using low-cost sensor networks: Considerations to help reveal neighborhood-level exposure disparities. American Journal of Public Health, 112(12), 1693-1695. Retrieved from https://www.proquest.com/scholarly-journals/using-low-cost-sensor-networks-considerations/docview/2754073894/se-2?accountid=211160

The growing availability of low-cost sensors can potentially democratize the process for reducing disparities in exposures to harmful air pollution. When used collaboratively with government agencies and researchers, sensors deployed by community organizations can build trust in environmental decision-making.1 Low-cost continuous sensors can complement regulatory monitoring networks required by the Clean Air Act, which have high confidence but relatively low geographic coverage. Sensors are often portable or even mobile and can prove particularly useful if they measure some of the same air pollutants as regulatory monitors.Sensors deployed on a neighborhood scale can reveal spatial and temporal variations in air quality, as Esie et al. (p. 1765) show. Increased temporal resolution can identify episodes of poor air quality that exacerbate existing inequities in exposure or if those episodes, when compared with mean air quality levels, create new inequities. Increased temporal resolution can show when exacerbations happen and, in combination with higher spatial resolution, can then reveal the cause. Identifying the sources of the emissions provides communities and decision-makers with the information needed for action in addressing inequities. However, communities and government agencies must work together to agree on how to interpret and evaluate sensor data, especially in cases when it may not agree with regulatory monitors, to prevent friction and loss of trust.1Sensors have a wide appeal and market availability, but the quality of data they generate must be considered. To help those using sensors as part of air monitoring, the US Environmental Protection

Agency's (EPA's) Air Sensor Toolbox2 provides the latest science on sensor performance and operation, and the EPA is providing $20 million in grants to enhance community and local efforts in monitoring air quality, including in or near underserved communities.3 In addition, the Inflation Reduction Act4 contains provisions to deploy air monitoring in communities, including deploying sensors in low-income and disadvantaged communities.

Wang, Scarlett Sijia,M.S., M.P.H., Glied, S., PhD., Babcock, C., M.P.A., & Chaudry, A., PhD. (2022). Changes in the public charge rule and health of mothers and infants enrolled in new york state's medicaid program, 2014–2019. American Journal of Public Health, 112(12), 1747-1756. doi:https://doi.org/10.2105/AJPH.2022.307066)

Objectives. To examine the effect of the January 2017 leak of the federal government's intent to broaden the public charge rule (making participation in some public programs a barrier to citizenship) on immigrant mothers and newborns in New York State. Methods. We used New York State Medicaid data (2014-2019) to measure the effects of the rule leak (January 2017) on Medicaid enrollment, health care utilization, and severe maternal morbidity among women whojoined Medicaid during their pregnancies and on the birth weight oftheir newborns. We repeated our analyses using simulated measures of citizenship status. Results. We observed an immediate statewide delay in prenatal Medicaid enrollment by immigrant mothers (odds ratio = 1.49). Using predicted citizenship, we observed significantly larger declines in birth weight (-56 grams) among infants of immigrant mothers. Conclusions. Leak of the public charge rule was associated with a significant delay in prenatal Medicaid enrollment among immigrant women and a significant decrease in birth weight among their newborns. Local public health officials should consider expanding health access and outreach programs to immigrant communities during times of pervasive antiimmigrant sentiment. (AmJ Public Health. 2022; 112(12):1747-1756. https://doi.org/10.2105/AJPH.2022.307066)

DeGarmo, E., M.P.H., Rosen, Joanne,J.D., M.A., & Rutkow, Lainie, JD,PhD., M.P.H. (2022). Use of law by US states during the COVID-19 pandemic with respect to people who were undocumented. American Journal of Public Health, 112(12), 1757-1764. doi:https://doi.org/10.2105/AJPH.2022.307090

Objectives. To systematically identify and analyze US state-level legislation concerning people who were undocumented during the COVID-19 pandemic, from January 2020 through August 2021. Methods. Using standard public health law research methods, we searched Westlaw's online database between November 2021 and January 2022 to identify legislation addressing COVID-19 and people who were undocumented. We abstracted relevant information, analyzed the data, and identified primary themes for each bill and resolution. Results. Sixty-six bills and resolutions, from 13 states, met the inclusion criteria. Legislation addressed 5 primary themes: eligibility and access to health-related services (n = 16), health and personal information (n = 10), housing assistance (n = 13), job security and employment benefits (n = 14), and monetary assistance (n = 13). Conclusions. Approximately one quarter of state legislatures introduced bills or resolutions regarding people who were undocumented and COVID-19. State-level laws are an important tool to mitigate the disproportionate impact of public health emergencies on vulnerable groups. Public Health Implications. As states shift attention away from the exigencies of COVID-19, this research provides insight into how law might be used to protect those who are undocumented throughout the full cycle of future public health emergencies.

Olfson, Mark,M.D., M.P.H., Cosgrove, C. M., M.P.H., Altekruse, Sean F, DVM,PhD., M.P.H., Wall, M. M., PhD., & Blanco, Carlos,M.D., PhD. (2022). Living alone and suicide risk in the united states, 2008–2019. American Journal of Public Health, 112(12), 1774-1782. doi:https://doi.org/10.2105/AJPH.2022.307080

Objectives. To evaluate the association between living alone and suicide and how it varies across sociodemographic characteristics. Methods. A nationally representative sample of adults from the 2008 American Community Survey (n 5 3 310 000) was followed through 2019 for mortality. Cox models estimated hazard ratios of suicide across living arrangements (living alone or with others) at the time of the survey. Total and sociodemographically stratified models compared hazards of suicide of people living alone to people living with others. Results. Annual suicide rates per 100 000 person-years were 23.0 among adults living alone and 13.2 among adults living with others. The age-, sex-, and race/ethnicity-adjusted hazard ratio of suicide for living alone was 1.75 (95% confidence interval = 1.64,1.87). Adjusted hazards of suicide associated with living alone varied across sociodemographic groups and were highest for adults with 4-year college degrees and annual incomes greater than $125 000 and lowest for Black individuals. Conclusions. Living alone is a risk marker for suicide with the strongest associations for adults with the highest levels of income and education. Because these associations were not controlled for psychiatric disorders, they should be interpreted as noncausal. (Am J Public Health. 2022;112(12):1774-1782. https://doi.org/10.2105/AJPH.2022.307080)

Bonne, S., M.D. (2022). Promoting evidence-based policy solutions to the US gun violence epidemic. American Journal of Public Health, 112(12), 1705-1706. Retrieved from https://www.proquest.com/scholarly-journals/promoting-evidence-based-policy-solutions-us-gun/docview/2754073410/se-2?accountid=211160

Firearm ownership and carriage in the United States remains an intensely personal, political, and social issue. In recent years, firearm ownership has remained at the forefront of our society's dialogue about safety, personal freedom, and the role of government in regulating firearm access. Although some national regulations govern access to firearms, specific restrictions and regulations on firearm ownership and carriage are largely delegated to the states. Because states have varying laws, there are many opportunities for natural experiments that explore the relationship of firearm regulations to firearm ownership and carriage behavior, injury, and mortality.In public health, we are interested in the external, population-level interventions and policies that decrease death and disability from injury or disease. Oftentimes, behavior change as a result of an intervention or policy is the crucial step that prevents the negative health outcome. Consequently, RowhaniRahbar et al. (p. 1783 in this issue of AJPH) have sought to understand whether state-level differences in firearm policies affect firearm carriage behavior with a loaded handgun, with an understanding that such behavior may be linked to the outcomes of interest, in this case, injury and death by firearm. It is known that firearm access and carriage are two of the most significant risk factors for pediatric firearm injuries,1-5 intimate partner homicide,6-8 suicide,9-11 and homicide ofthose who cohabitate,12-14 although relatively less is known about the relationship of population-level firearm carriage to population-level death and injury by firearm.By using a nationally representative sample survey of firearm-owning adults, Rowahani-Rahbar et al. analyzed loaded handgun carriage. They then described the groups of respondents by demographics and the reasons cited by the owner for carrying the weapon. They also demonstrated that firearm owners carried loaded weapons in significantly more permitless carry and shall issue states than states with may issue policies. These data, when extrapolated, demonstrate that about 16 million adults in the United States have carried a loaded handgun in the past 30 days, a significant increase over 2015 data, which estimated 9 million adults did so.

DeJonge, Peter M,PhD., M.P.H., Pray, Ian W,PhD., M.P.H., Gangnon, Ronald,PhD., M.S., McCoy, K., PhD., Tomasallo, Carrie,PhD., M.P.H., & Meiman, J., M.D. (2022). School district prevention policies and risk of COVID-19 among in-person K–12 educators, wisconsin, 2021. American Journal of Public Health, 112(12), 1791-1799. doi:https://doi.org/10.2105/AJPH.2022.307095

Objectives. To assess the rate of COVID-19 among in-person K-12 educators and the rate's association with various COVID-19 prevention policies in school districts. Methods. We linked actively working, in-person K-12 educators in Wisconsin to COVID-19 cases with onset from September 2 to November 24, 2021. A mixed-effects Cox proportional hazards model, adjusted for pertinent person- and community-level confounders, compared the hazard rate of COVID-19 among educators working in districts with and without specific COVID-19 prevention policies. Results. In-person educators working in school districts that required masking for students and staff experienced 19% lower hazards of COVID-19 than did those in districts without any masking policy (hazard ratio = 0.81; 95% confidence interval = 0.72, 0.92). Reduced COVID-19 hazards were consistent and remained statistically significant when educators were stratified by elementary, middle, and high school environments. Conclusions. In Wisconsin's K-12 school districts, during the fall 2021 academic semester, a policy that required both students and staff to mask was associated with significantly reduced risk of COVID-19 among in-person educators across all grade levels.

Shaw, R. J., PhD. (2022). Living alone and suicide risk: A complex problem requiring a whole population approach. American Journal of Public Health, 112(12), 1699-1701. Retrieved from https://www.proquest.com/scholarly-journals/living-alone-suicide-risk-complex-problem/docview/2754073353/se-2?accountid=211160

Death by suicide is one of the great challenges in public health. Suicide is a tragedy that affects not only the deceased individual but also everybody to whom that individual was connected. Yet, despite the link between death by suicide and social integration being long recognized and many efforts to reduce suicide rates in recent decades,1 the age-adjusted rate of suicide in the United States increased from 10.5 per 100 000 in 1999 to 13.9 in 2019.2 Before the pandemic, suicide was the 10th leading cause of death in terms of all-age mortality; in comparison, ageadjusted rates for the top three causes of death are 161.5 per 100 000 for heart disease, 146.2 for cancer, and 49.3 for unintentional injuries. Suicide is even more important among those younger than 65 years, ranking as the fifth leading cause of death.2 The US suicide rate is not atypical, with the suicide rate for other high-income countries being 13.7 per 100 0003 Thus, identifying how to best target interventions to address suicide is a global priority.In this issue of AJPH, Olfson et al. (p. 1774) describe who dies alone and how. The strongest associations between living alone and risk of suicide are for those with the most advantaged social positions, as indicated by education, income, and ethnicity. Looking at the results in additional detail provides more information. Among adults living with others, suicide rates decline with increasing income and education levels. Conversely, there is little evidence of any differences in suicide rates by income or education among people living alone, a finding that cannot be explained by chance.

Bustamante, Arturo Vargas,PhD., M.P.P., Nwadiuko, Joseph,M.D., M.P.H., & Ortega, A. N., PhD. (2022). State-level legislation during the COVID-19 pandemic to offset the exclusion of undocumented immigrants from federal relief efforts. American Journal of Public Health, 112(12), 1729-1731. Retrieved from https://www.proquest.com/scholarly-journals/state-level-legislation-during-covid-19-pandemic/docview/2754073312/se-2?accountid=211160
