

Addressing Health and Wellness for At-Risk Urban Youth: A Community-Based Participatory Research (CBPR) Study to Assess Environmental Health (EH) Concerns

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ABSTRACT: At-risk urban youth benefit from mentored activities. The Champion Academy (CA) is a youth mentoring program for high risk urban youth. We used a community based participatory research (CBPR) approach to explore 1) youth perspectives on health and wellness, EH and EJ; and 2) community perspectives on the intersection of structural racism, health equity, and youth health and wellness. We surveyed CA participants to assess health and wellness and conducted youth and adult interviews and focus groups to understand what environmental factors impact their daily lives. In 45 youth surveys, 64% reported enjoying time outdoors; 45% had concerns about pollution. The five youth focus groups (N = 49) and individual interviews (N = 10) identified 3 themes: (1) pervasive community violence; (2) systemic racism, and (3) limited power to make change. The two adult focus groups (N = 7) and individual interviews (N = 5) identified: 1) normalization of environmental problems and violence; 2) youth prioritize survival over health and wellness; 3) CA education should emphasize relevance to youth; 4) access to healthy foods is limited; and 5) mindsets need to change. In sum, youth's real-life environmental concerns must be addressed as part of more typical EH concerns.

INTRODUCTION

Research about youth in the general population indicates that involvement in group activities, particularly structured activities, may enhance development by easing depression (Mahoney et al., 2002), enhancing academic achievement (Cooper et al., 1999; Mahoney et al., 2003; Posner and Vandell, 1999) and psychological functioning (Bartko and Eccles, 2003), and reducing substance abuse (Elder et al., 2000). Structured activities that have focused goals and adult leadership appear to provide the greatest benefits, as they teach youth to learn and practice social skills, contrib-

ute to the community, identify with a social group, and build peer and adult relationships that can be maintained into the future (Eccles et al., 2003).

Youth at risk for poor outcomes may particularly benefit from structured activities. Our prior work has focused on early childhood toxic stress for children in foster and kinship care, and has included a variety of teaching groups, including foster parent training (Conn et al., 2018), youth development programming (Jee et al., 2014), and mindfulness training with youth in foster and kinship care (Jee et al., 2015, Jee

et al., 2019). More recent work has focused on interventions to teach medical students and pediatric providers about trauma-informed care (Steen et al., 2021; Jee et al., 2019) and the intersection between pediatrics, structural racism, and environmental injustice for underserved communities (Gutshow et al., 2021). These studies were foundational for the CA project.

The Champion Academy's Extreme Mentoring and Empowerment Initiative. Champion Academy (CA) is a non-profit mentoring program whose mission is to provide teens in poverty with the critical support, consistency, and accountability necessary to overcome barriers and reach their fullest potential. Each summer, the CA accepts 100 teens who are Rochester residents, who are entering seventh or higher grades, and who are facing at least three risk factors for dropping out of school.

The CA's Extreme Mentoring Program is operationalized by ongoing and consistent touchpoints with youth. They attend "Monthly Meetups," which are 4 hour teaching/training workshops for five days every month, in addition to field trips and outings. The first part of a typical afternoon program is snack and homework time between 3 pm to 5 pm, where youth, called "Champions" or "Champs," are paired with volunteers to support homework needs, or encourage unstructured physical activity, such as basketball, football, crafts, or games. Community volunteers are invited to do a "Meet and Greet" from 5 pm to 5:45 pm, during which time, adult community volunteers or visiting guests from various workplaces network with the Champs for informal discussions around career development and community resources. Visitors may be personnel from local businesses, such as banks, or community-based organizations.

The cornerstone of the CA is mentoring. Each youth is paired with a specific Member Accountability Coach, and each MAC has a caseload of youth with whom they are expected to touch base regularly throughout the month, and between program sessions. They also report to the key adult stakeholders in that Champ's life (i.e. parent/guardian, teacher, trusted family member), and emphasize core values of the CA, including excellence in personal responsibility and behavior. Personal choice is another important value that the CA promotes among the Champs. During monthly meet-ups, they can choose among workshops in the Environmental Club, Science Club, Physical Activity Club, or the Dance and Arts Club, as well as a variety of rotating community-based organization presentations and activities.

University of Rochester Medical Center: Contributions to the Youth Champion Academy. The University of Rochester Medical Center has had a consistent and sustained presence in the workshop programming with a "Club Med." It is run by one of the core founders of the Champion Academy

program, orthopedic researcher Edward Schwarz, Ph.D., and is staffed by University of Rochester (UR) graduate students. Dr. Sandra Jee, who directs the Finger Lakes Children's Environmental Health Center, leads program development for Environmental Club efforts since January 2020. This expanded programming allows medical students and pediatric residents to attend Champion Academy activities to function as health and wellness advocates for urban youth who are at-risk for poor educational and vocational outcomes.

Activities of the Environmental Club have included use of Science Takeout Kits to teach about environmental problems such as lead poisoning, radon exposure, vaping, and poor water quality in urban environments (Fallone et al., 2021). These hands-on educational activities combine didactics with group-based and interactive activities, such as mixing reagents to demonstrate color changes in liquids that simulate toxic lead levels, and other visually appealing science experiments that reinforce experiential learning for youth. (Markowitz and Holt, 2011). The partnership between the University of Rochester Medical Center and Champion Academy has fostered scientific exploration, and integrates experiences with graduate student and resident volunteers, who can not only teach youth, but serve as inspiring role models.

Focus of this Report: Youth Champions of Community Health and Wellness Pilot Project. The specific pilot program described in this paper details the efforts of a multi-year community-based participatory research (CBPR) approach that has engaged in community needs assessment to implement a meaningful partnership between an academic partner (University of Rochester) and a community partner (Champion Academy). A CBPR framework allows the community to have an vital voice in identifying problems and proposing solutions (Israel, 2010; Ward, 2019). Previous studies using a CBPR approach have shown that academic-community partnerships enable effective interventions in complex social problems that emerge from the intersection of ACEs, poverty, structural racism, and limited community resources. (Schulz et al., 2023; Coombe, 2020; LiIacono Merves, 2015; Ward, 2019).

Our collaborative team has diverse expertise and years of dedication to community investment, with a strong commitment to Community-Based Participatory Research (CBPR) principles. CBPR is a research approach focused on equitable partnerships between community members, organizational representatives, and academicians throughout the research, from inception to completion (Detroit Urban Research Center, 2023). A CBPR framework has been a successful model in other youth development programs, such as child health farm models (Arnold et al., 2019) and programs for Cambodian American youth (Sangalong et al., 2015). Promoting

equity and community involvement has enabled projects to maintain community and stakeholder buy-in (Schulz et al., 2023) and identify the primary needs of at-risk youth.

We share here the pilot phase of our Youth Champions of Community Health and Wellness (YC-CHW) project, which aims to promote health and wellness for youth in the Champion Academy, and to teach them to be Environmental Health Ambassadors. We aimed to encourage a subset of youth leaders to serve as peer mentors and role models in their social networks and community, so they can help to promote wellness principles with an emphasis on healthy and sustainable eating of locally-sourced foods, and community-acceptable health messaging through videos, social media, infographics, and brochures.

Youth Champions-CHW promotes STEM education that is activated by CBPR-chosen extracurricular activities. We describe here our needs assessment for this project, which allowed us to move forward with STEM-focused teaching that reflects community-driven priorities. *We aim to make Youth Champions-CHW the leaders and drivers of the curriculum, which will ultimately invest in personal development of youth through project deliverables that are culturally acceptable to their communities.* The program invests in youth health and wellness while promoting community-identified priorities that support long-term health outcomes for community residents of all ages.

For our needs assessment, we conducted a mixed-methods analysis to: 1) assess youth perspectives on health and wellness and understanding of EH and EJ issues; and 2) explore community perspectives on the intersection of environmental justice, health equity, and youth health and wellness.

MATERIALS AND METHODS

Participants and Procedures. To collect needs assessment data to inform development of a curriculum and activities for the YC-CHW, in July 2022, we surveyed new youth participants during the summer orientation period, to assess their health and wellness. In addition, key informant interviews with youth, staff and key CA stakeholders were conducted to assess EH concerns. Data from the surveys and interviews were used to develop questions for following focus groups of youth and adult affiliates of the program.

The University of Rochester Institutional Review Board approved this study. Informed consent and/or assent were provided for all study procedures.

Surveys. Before initiation of the summer program in 2022, we collected surveys from new youth enrollees to assess their baseline health and wellness. The data helped to inform questions for follow-up youth and adult focus groups (see below) to understand what health and environmental factors impact their daily lives.

Individual Interviews. In-depth key informant interviews were conducted with Champ participants and staff prior (seven youth participants, two youth alumni, and five staff and key stakeholders) to the start of the summer's educational programming. We recruited from a subset of youth participating in field trip excursions with Champion Academy staff. We conducted interviews to assess concerns about their environment, including environmental health and environmental justice concerns. Results of the individual interviews and the de-identified aggregated survey results informed the focus group questions that we used for youth and affiliated adults of Champion Academy.

Individual interviews of 45 minutes were completed in Academy program space by an experienced qualitative investigator. All participants received a \$25 Amazon gift card for interview completion.

Focus Groups. We invited CHAMP participants who were participating in environmental health learning sessions to participate in focus groups, in order to assess concerns about their environment, including EH problems and EJ. We conducted five focus groups with Champs (total of 49 youth), and with two groups of adults (total of 7 parents and 2 affiliated adults). All focus groups were led by the group facilitator and an experienced qualitative investigator, with help from two research trained students (one-two students per focus group). Focus groups lasted approximately 45 minutes, and were audio-taped for verbatim transcription. All participants received a \$25 Amazon gift card for their participation in focus groups.

Measures. This study was conducted using a mixed methods analysis of data collected via a Community-Based Participatory Research framework. Informants were students in the Youth Champion Academy, and community partners and stakeholders. We did not collect socio-demographic information because participants were drawn from the same community. All the Champion Academy youth were Black, and ranged in age from (13-18 years).

Youth Survey of Knowledge on Health and Wellness. At orientation, youth participants at Champion Academy were asked to complete paper surveys to assess general knowledge of health and wellness. Respondents were instructed that completion of the survey would help the project implementation team to identify the key areas of health and wellness that were important to address in the upcoming year through Champion Academy programming. The surveys were distributed to all youth after a Power Panel, in which physicians and medical students (n=4) were interviewed by the Champs in a group format to answer questions about their experiences in science and medicine. Surveys were anonymous and voluntary. Youth were told

that refusal to complete the survey would not impact their participation in any Champion Academy activities.

The survey design was adapted from a Personal Wellness Assessment Survey with 8 Dimensions of Wellness. The paper survey included 70 questions covering a variety of health and wellness issues, such as Physical, Emotional, Occupational, Environmental, Social, Spiritual, and Intellectual Domains. Likert responses were scored from 1-4. We did not include Financial questions, as we did not feel it was relevant for youth (see Appendix for full survey). For each domain, the minimum possible score was 10, maximum 40. Survey questions were modified from the original Personal Wellness Assessment survey to focus on the areas of adolescent health and issues faced by this high-risk population. We aimed for the survey data to inform questions for follow-up focus groups and individual interviews that would help us explore adolescent views on health and wellness, and what environmental factors impact their daily lives.

Development of Interview and Focus Group Guides. We developed separate semi-structured interview guides for individual interviews and focus groups.

Individual interviews. We developed a semi-structured interview guide to assess youth perspectives on health and wellness and understanding of environmental health and environmental justice issues, and to explore community perspectives on the intersection of structural racism, health equity, and youth health and wellness. The youth interview guides were developed by authors SJ and CR and based on their expertise in the topic area. The questions were field tested by author KH.

Focus groups. We developed a semi-structured interview guide to examine youth and parent perspectives on health and wellness, understanding of environmental health and environmental justice issues, and the intersection of structural racism, health equity, and youth health and wellness. Based on the existing literature and anecdotal hypotheses derived from the first round of key informant interviews with youth, we identified two topic areas for examination: 1) Understanding of health and wellness; 2) Understanding of what were key concerns related to environmental health.

Data Analyses.

Quantitative. Using data from the surveys, we used descriptive statistic and summative statistics to analyze quantitative data. Domains were comprised of 10 questions, and we analyzed Summative scores on these domains.

Qualitative. We used a qualitative case study design to understand youth perspectives of environmental health and environmental justice issues, and to explore community perspectives on the intersection of structural racism, health equity,

and youth health and wellness. A case study explores a case in its context using a variety of data sources to uncover its multifaceted essence (Baxter and Jack, 2008). We spoke with core staff of Champion Academy who had experience in managing ACEs in community settings to review the questions that we developed for the individual interviews.

The analytic team was comprised of two research-experienced individuals. All data were analyzed using a thematic framework approach (Pope et al., 2000), in which analysts looked for common themes or patterns that fit into the pre-selected domains described above. Interviews were analyzed separately by two independent readers who used a consensus approach to finalize themes and categorize data. Analysts listened to audio-tapes as needed to verify emphasis of speech in the transcribed interviews. Disagreements were addressed through debate to ensure reliability of analyses. We used constant comparison to check for coded themes in each transcript. (Pope et al., 2000).

Next, we re-examined the data as a whole, to allow for a greater depth of information and identification of themes. Finally, within each theme, we used a cross classification matrix (Ritchie and Lewis, 2003) to examine the inter-play among themes and further interpretation of data within a dynamic model, enabling the identification of sub-themes or other special patterns. Each level of the framework interacts with the next to produce a model of inter-related themes explaining foster parents' acceptability of and perceptions regarding the short and long-term effectiveness of the program.

Mixed Methods Analysis. We compared the qualitative data from focus groups and individual interviews and the quantitative surveys of youth knowledge of health and wellness in the interpretation phase. We identified commonalities and discrepancies between our qualitative and quantitative findings and used this, combined with prior literature, to develop extract meaning for these results.

We used an embedded mixed methods design (Creswell et al., 2003) where quantitative data was added to our qualitative design. The purpose was threefold: quantitative data would 1) inform the development of our qualitative design. 2) provide two sources of data to assess youth perspectives; and 3) add unique information regarding youths' general knowledge of health and wellness that could be compared to the information gained on youth concerns about EH and EJ in their environment. Thus, the embedded design allowed for cross-validation of findings and provided a more comprehensive assessment of results through corroboration and/or interpretation of quantitative findings (Creswell et al., 2003). We analyzed both quantitative and qualitative data separately, then assessed the joint influence at the interpretation phase.

RESULTS

Participation. Surveys on health and wellness were completed by 45 youth. In-depth interviews included eight Black youth (12-18 yr), two youth alumni, and five staff and key stakeholders. Five focus groups were conducted with youth (total n=49). Two focus groups were conducted with affiliated adults, which included staff and parents of Champion Academy students (total n=7, one parent provided feedback but declined to consent to share feedback).

Quantitative Findings from Surveys. Surveys on health and wellness knowledge (n=45; Figure 1) indicated that youth demonstrated highest functioning in the occupational health domain (mean 29.51, SD 7.31) and lowest in the physical domain (mean 25.23, SD 6.74). In the occupational health domain, most youth chose always or most of the time when answering the questions “Enjoyment is a consideration I use when choosing a possible career”, and “I am developing the necessary skills to achieve my career goals.” Other domains of high functioning for these youth were Emotional (mean 28.80, SD 7.26); Social (mean 28.39, SD 7.19); Spiritual (mean 28.26, SD 8.17); and Intellectual (mean 28.05, SD 7.37). In the Environmental domain, youth had a mean score of 26.64 (SD 7.30).

Qualitative Findings.

Data from Youth. After examination of all qualitative data (from both interviews and focus groups), we found three interacting themes that describe the youths’ perspectives on health and wellness and understanding of EH/EJ issues. These are: (1) pervasiveness of community violence; (2) impact of systemic racism, and (3) limited power to make change. (Table 1)

Perspectives on health and wellness. One general theme that emerged repeatedly in each of the five youth focus groups was the pervasiveness of community violence. We intended to ask about health and wellness, and the value of extreme mentoring and frequent touchpoints with

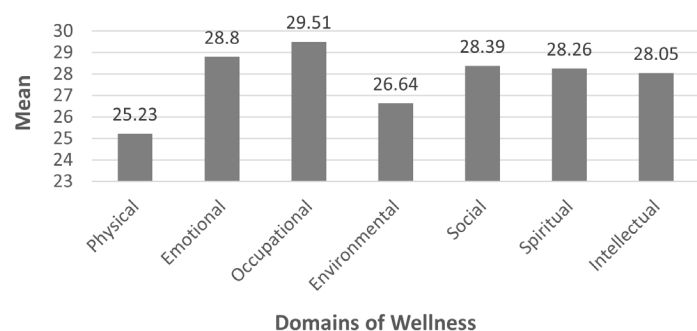


Figure 1. Youth Survey on Knowledge of Health and Wellness. Results from the baseline surveys of new, incoming CHAMPS participants who completed the eight domains of wellness questionnaire at orientation.

Table 1. Youth Perspectives on Community, Health and Wellness, and the Environment.

Theme	Interview Quotations Illustrating Themes
1. Pervasiveness of community violence	a. “It’s like violence here and there, but it’s violence wherever you go though. So that’s like a universal problem.”
	b. “I guess it makes me nervous. It doesn’t make me sad I guess. Because just like, it’s reality, like you have to face it. It doesn’t just happen here. I happens all over the world, everywhere you go. So you’re always live by somewhere, you’re always living shootings. There always be kidnappings everywhere. So it’s just like yeah.”
2. Impact of systematic racism	a. “Black Lives Matter, Police brutality. I’m not having any of that.”
	b. “A Black man getting killed over something that’s really dumb or something that shouldn’t have happened in the first place. That changes the world every day, just like with the George Floyd case. That was something that should never have happened in first place.”
	c. “People say like, you gotta fight for all Black lives matter. But make sure you truly mean it and you’re not just saying this to go along with the crowd or stuff like that.”
3. Limited power to make change	a. “No I don’t have that many ideas on how to fix [environmental issues] because they try but it don’t really help so I’m not really sure.”
	b. “I’m only 14 years old. But I mean, like I can’t do too much, the only thing I can think of is probably trying to tell the older adults to start up a pep rally or stuff or just help clean the streets for youth. But it’s been going on for such a long time now that who knows what could happen in next 10, 15, 20 years from now?”

the Member Accountability Coaches. In all focus groups, however, when we asked about ways to be healthy, youth mentioned barriers to being outdoors in many of their neighborhoods due to parental concern about safety. Much of the discussion was about trustworthiness and reliability of law enforcement. Many youth accepted that community violence was part of their everyday living experience (see Table 1, quotations a, b).

Impact of systemic racism. As a result, youth identified the problems between law enforcement and negative perspectives on race relations as impacting trust between communities of color and the law enforcement resources that were available. Table 1, 2a, 2b, 2c)

Limited power to make change. While youth identified problems related to structural racism and discrimination in their communities, they felt that they did not have much agency to make impactful changes.

It’s hard, because no one person’s gonna do it. Until more Black people are in politics or in power positions, there probably will never be, there won’t be a big change. There won’t be a big change until someone that represents the rest of the people is in power. It doesn’t matter what skin color we are, it doesn’t matter where we’re from, we are all human beings.

Table 2. Staff, Parent, and Key Stakeholder Perspectives on Challenges Facing Urban Youth.

Theme	Interview Quotations Illustrating Themes
1. Environmental issues and violence have been normalized in the youth's communities	a. "Well, I think it's because they see so much of like people polluting it's, it's kind of like they're used to it.... So I think in some of their neighborhoods, they're just so used to it, that they tend to do it as well." b. "I think they think [violence is] gonna continue. That's the norm of life. Yeah, at this point it's normal." c. "When I was younger, like, maybe one I went to a funeral for one of my friends. But now it's like, you could meet one champ. And then they had probably about four or five deaths in a year or two either in their family or friends or just people they know from school. When I was younger, I didn't experience so much gun violence, but now I feel like this every day."
2. The youth are often trying to just survive, which prevents them from putting direct attention towards modifying health and wellness	a. "It's scary to see or know that some of them feel that they're not going to make it past a certain age. Like they don't really have a hope for their future because they may not make it out of high school. And that's scary to me." b. "Being raised in survival mode is you know, instead of being just, you know, just by love that has a lot to do with it. You know, having the mindset of having to reach back. Even if these young kids are making it, they feel like they have to buy mom a house. In other environments, they don't have to do that. Mom already has a house. That feeling of always having to like, 'gotta get Mom straight, gotta get everybody.' I feel like our young men have a constant pressure on them all the time to provide." c. "It happens every day. So how they gonna deal with something that happens like every single day it's not enough support around"
3. Current educational efforts are lacking and are not accessible to youth. Educational interventions need to be grounded in reality and interactive	a. "Instead of keep building programs and programs and programs you gotta like really tap into the real issue. Can have million programs and nobody is touching on the real." b. "We can make 100 programs but are we really solving a problem or are we just taking care of the symptoms. So that's show I say that to the champs or with the youth we need to find out the real issues as opposed to if we just put a little band aid over for a little bit..." c. "I think the only access they get [to environmental health education] is the negative access. But I don't think they can get the access, how to handle it, or how to live through it and make it past it." d. "Why doesn't every organization specifically related to health and wellness have tik tok accounts? Why are we still putting Facebook groups together and flyers on buses...email blasts. We know that's not how people receive information that's where the intentionality of it comes to me. Everyone complains about youth being connected to their phone, but they don't find ways to educate them through their phone?"
4. Poor access to healthy food	a. "What they eat from school, they don't like it, they don't eat it, it's nasty. Or they get whatever's faster, whatever is cheapest. Like a lot of the healthy foods, with everything being increased, is harder to get. And I know McDonald's used to have salads, they're not even selling salads anymore. And that's tough. Like a lot of people go to McDonald's. A lot of people go to Burger King like those fast food they really do need to have healthier options and they don't." b. "Then, when it comes to food deserts and the cities, where youth don't have proper adequate resources from nutrition. If they want it, they got to travel outside of the city, and then they got to be able to afford it. There's very few options directly in their environment where they can get healthy, nutritious meals, and all that at an affordable price." c. "You wake up in the morning, the first thing you eat is Hot Cheetos and a guzzler and then they gotta go and try to learn algebra."
5. Mindsets need to change along with the issues.	a. "I would like to believe in my heart that if we just had fresh fruits and veggies at corner or if these corner stores offer fruit and veggies that champs and our youth will make the right decision. But this stuff is ingrained in us man like the hold that Pepsi and Coke products have on our community like kills me bro." b. "The kids don't even realize that this is your environment, that if we can change your mindset, we can change a little bit of the environment. Communicate that to them first."

So therefore, we should all have the same rights, the same privileges. It's not like that. There's still a lot of people that see in different ways. There's still a lot of people that see in color.

Data from Adults. After examination of all adult qualitative data, we found five interacting themes describe their perspectives on the intersection of structural racism, health equity, and youth health and wellness. (Table 2, 1-5). These are: 1) environmental problems and violence have become normalized; 2) youth trying to survive cannot pay attention to health and wellness; 3) current educational efforts for youth need to be framed in a way that is relevant to them; 4) poor access to healthy foods; and 5) mindsets need to change. Exploration of environmental health concerns identified the need to address community violence and structural racism.

Key themes for focus groups identified that a healthy environment means having clean air, water, and limited pollution. However, discussion of the environment focused

mainly on community violence and crime, which are part of the daily experience of urban youth. Staff, parents, and key stakeholders and affiliated adults of Champion Academy recognized that there are important ways that youth development programming should be grounded in reality and relevant to the urban youth experience. Teaching about environmental health, environmental justice, and STEM in group-based settings needs to recognize some of the challenges that urban families face, including community violence, which takes precedence over concerns about climate change.

DISCUSSION

Our CBPR pilot study examined perspectives on health and wellness among community youth who enrolled in an intensive mentoring and youth development program. The results were in some ways unexpected. We originally de-

signed the program to teach specifically about health and wellness, and to build upon prior educational sessions using the Science Take Out Kits (Fallone et al., 2021) that emphasized specific environmental health problems. The needs assessment from this pilot study, however, revealed that youth considered the primary barrier to health and wellness to be pervasive community violence. Frequent shootings prevented them from going outdoors in their communities to experience their natural environment. Moreover, the anonymous surveys that were intended to inform our follow up educational topics on environmental health revealed that youth were especially concerned about their physical and emotional health. Specific environmental topics, such as climate change, were not priority areas of concern for youth in this program. This is an important finding as prior programs for high risk youth have focused on improving pro environmental behaviors (Kudryavtsev et al., 2012; Ekenga et al., 2019), but none to our knowledge have addressed the youth perceived priority environmental factors.

We did not expect completing these anonymous surveys would be a comprehensive assessment of health and wellness, but would help to introduce youth to consider domains that might comprise health and wellness. We learned that youth identified physical and emotional health as areas that were in deficit. These findings might have been related to reactions to the social and physical isolation imposed by the COVID-19 pandemic. We shared this optional survey at the same time that some of our team (SJ, KH) participated in a panel discussion of health professionals who shared their own personal perspectives on their professional journeys that led them to careers in medicine and ways that they emphasize health and wellness. We asked youth to also think about ways that health and wellness were important and relevant to them.

Hence, use of a CBPR framework to clarify how high-risk urban youth understand EH allowed us to identify a primary need to address community violence, which was participants' highest priority when they thought about EH and EJ concerns. Students' real-life environmental concerns, such as violence, poor food quality, and poverty, were much more important to them than the EH concerns most often discussed by environmental advocates, such as air pollution, water quality, and lead poisoning.

Viewed from the reality of life on the streets, these opinions are hardly surprising. In our inner-city community, gun violence has exploded in the past few years. Although these events include some high-profile acts of police violence against Blacks, far more frequent acts of violence occur within the Black community, especially youth-against-youth shootings by gangs. How could climate change take precedence over violence outside the doors of one's own home?

Review of these data suggest that our next steps in curriculum planning, while including our preferred environmental

topics, must also address community safety and ways to reduce threats to life and personal health. One possibility might be to engage youth as health and safety ambassadors in the community, possibly with their churches. Perhaps a creative collaborative venture with city police might help to make the police more effective in protecting youth and keeping the community safer. While initiating carefully selected projects that include education and advocacy related to reducing violence on the streets, we can also work with our Champs to make them more interested in understanding the wider environment in which they live. We could begin with topics that are particularly salient to the health of the poor, such as allergies or respiratory diseases caused by pollution from nearby interstates (Brumberg and Karr, 2021), lead poisoning that impairs the lives and future livelihoods of exposed children, and extreme heat in the inner city that can be mitigated by planting trees. The next steps to build youth understanding of science, technology, and relevant climate-related health concerns might address access to fresh and locally sourced vegetables by fighting the forces that create food deserts in impoverished communities, or improved public transportation to reduce car pollution and improve access to work and health care for the poor. Some Champs might be interested in advocacy training linked to effective writing that targets local, state or national politicians. An advantage of projects like these is that they will demand and thus teach critical skills needed to build active partnerships within community, and among key stakeholders, academic partners, and potentially politicians. A collaborative approach to structural racism is needed to promote resilience in urban youth and at the same time build their fundamental skills needed for efficacy in environmental health and justice.

Limitations. All data was collected from urban youth at one youth development program in a city with one of the highest poverty rates in the United States. While the priorities of these youth may not be generalizable to all other communities, or to all urban youth development programs, our findings are likely relevant to other inner-city environments that struggle with pervasive threats to health and the effects of environmental injustice. Our sample size was small, but our qualitative analyses reached thematic saturation, the common indicator of an adequate sample in qualitative analysis. In this case, thematic saturation likely reflected commonality in the experiences of our participants.

Study strengths are that all youth who agreed to participate completed this study. Finally, while our results do not generalize to the entire US population, or even the entire US Black population, the study provides an initial conceptualization of youth perceptions of health and wellness, within their community context, and helps us to see how they frame an understanding of environmental health that fits their circumstances.

Implications. Use of a CBPR framework to understand the concept of EH by urban youth identified the need to address community violence, which was participants' highest priority to address EH and EJ concerns. Students' real-life "environmental concerns" (violence, poor food quality, poverty) take priority over their EH concerns (air pollution, water quality, lead poisoning). A collaborative approach to structural racism is needed to promote resilience, health, and wellness for urban youth and can inform teaching youth about EH.

We know from prior CBPR work that using a community participatory approach to youth programs enhances their academic well-being (Shek et al., 2020). The drawbacks of community engagement in these kinds of projects are the significant demands on time for project implementation (Flicker et al., 2018). We were committed to a CBPR approach based upon our joint training in a CBPR training program at the University of Michigan. (Coombe et al., 2018). To that end, we jointly identified key priority areas, revised our study protocol to obtain joint IRB approval, and co-presented this work at both national and regional meetings (Rush et al., 2023). We are currently continuing to collaborate on using these findings to develop next steps to address community priorities.

Next Steps. Promoting resilience among at-risk youth demands awareness of the challenges they face in their communities. We need to engage youth to develop health behaviors during adolescence that they can share with their peers, so they invest in their own long-term health and wellness as well as that of their community partners. Youth Academic Champions has formed a collaborative made up of key community stakeholders and youth, as well as a large academic institution, to oversee development of an effective environmental health and justice curriculum with a rich array of experiential activities in the community. We need to find external funding to invest in safety in the built environment for city residents, and also to create opportunities for youth and families to have ready access to locally-grown healthy fruits and vegetables as first steps to creating health and wellness. Publishing this work in peer-reviewed publications and sharing this work in local, regional and national forums can help to enhance understanding of what can be done to invest in at-risk youth in urban environments. Focused mentoring of youth, including exposure opportunities to STEM fields and higher education, can motivate youth to develop skills to become current and future ambassadors of health, wellness, and environmental change.

ASSOCIATED CONTENT

Supplemental material mentioned in this manuscript can be found uploaded to the same webpage as this the manuscript.

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The manuscript was written through contributions of all authors. All authors have given approval to the final version of the manuscript.

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ABBREVIATIONS

CA: Champion Academy; CBPR: Community-Based Participatory Research; EH: Environmental Health; EJ: Environmental Justice; UR: University of Rochester; YC-CHW: Youth Champions of Community Health and Wellness; YDP: Youth Development Program

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