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Community Organizing Network for Environmental Health: Using a Community Health Development Approach to Increase Community Capacity around Reduction of Environmental Triggers

Edith A. Parker,

Department of Health Behavior and Health Education, University of Michigan School of Public Health, Ann Arbor, MI 48109-2029, USA

Lynna K. Chung,

Department of Health Behavior and Health Education, University of Michigan School of Public Health, Ann Arbor, MI 48109-2029, USA

Barbara A. Israel,

Department of Health Behavior and Health Education, University of Michigan School of Public Health, Ann Arbor, MI 48109-2029, USA

Angela Reyes, and

Detroit Hispanic Development Corporation, Detroit, MI, USA

Donele Wilkins

Detroiters Working for Environmental Justice, Detroit, MI, USA

Edith A. Parker: edithp@umich.edu

Abstract

The Community Organizing Network for Environmental Health (CONEH), a project of Community Action Against Asthma, used a community health development approach to improve children's asthma-related health through increasing the community's capacity to reduce physical and social environmental triggers for asthma. Three community organizers were hired to work with community groups and residents in neighborhoods in Detroit on the priority areas of air quality, housing, and citizen involvement in the environmental project and policy decision-making. As part of the evaluation of the CONEH project, 20 one-on-one semi-structured, in-depth interviews were conducted between August and November 2005 involving steering committee members, staff members, and key community organization staff and/or community members. Using data from the evaluation of the CONEH project, this article identifies the dimensions of community capacity that were enhanced as part of a CBPR community health development approach to reducing physical and social environmental triggers associated with childhood asthma and the factors that facilitated or inhibited the enhancement of community capacity.

Keywords

Community-based participatory research; Community health development; Community capacity; Asthma; Environmental health

An extensive body of research acknowledges that stressors in the social and physical environment are associated with poor health outcomes and that these conditions contribute to ethnic, racial, and socioeconomic health disparities (Marmot and Wilkinson 2006; Parker et al. 2004; Schulz and Northridge 2004). Community-based participatory research (CBPR) has received growing recognition as a viable community health development approach for examining and addressing these health disparities (Israel et al. 2005, 1998; Minkler and Wallerstein 2008). CBPR is a collaborative approach to research that equitably involves community members, practitioners, and academic researchers in all aspects of the research process. By enabling all partners to provide their expertise and share responsibility and ownership, CBPR strives to enhance knowledge and integrate the knowledge gained with interventions and policies to improve health in the communities involved (Israel et al. 1998).

One of the strengths of a CBPR approach is its emphasis on building community capacity, which is a strategy that has shown promise for addressing the complex set of factors that contribute to overall community health (Freudenberg 2004; Minkler et al. 2008). The use of a CBPR approach is appropriate for enhancing community capacity given its emphasis on community identification of problems, engaging community members in participatory decision making, translating research into action, and mobilizing community members and organizations to advocate for change (Freudenberg 2004; Israel et al. 2008; Minkler et al. 2008). A number of CBPR partnerships are concerned with environmental public health and have recognized the crucial role of community capacity to address environmental exposures and health risks (Freudenberg 2004; Israel et al. 2005; Minkler et al. 2008; Minkler and Wallerstein 2008).

Freudenberg (2004) demonstrated how the conceptualization of community capacity by Goodman et al. (1998) can have utility as a framework to examine factors that contribute to a community's ability to protect itself against environmental exposures harmful to human health. Community capacity is placed within a logic model in which determinants of community conditions (e.g., enduring political and economic systems, political dynamics, cultural and ideological beliefs) impact on both the dimensions of community capacity (e.g., participation, social support) and community characteristics (e.g., physical environment, social environment). These, in turn, influence behavioral manifestations of community capacity (e.g., leaders act to mobilize community members, residents participate in environmental action). Behavioral manifestations can then lead to increased citizen action to address environmental problems, resulting in improved environmental and health outcomes. Building off of Goodman's and Freudenberg's works, Minkler et al. (2008) used these conceptualizations of community capacity to develop a model to assess, in CBPR projects, what dimensions of community and partnership capacity affect health-promoting change in environmental health.

Given the contribution of physical and social environmental factors to health disparities and the potential role that CBPR efforts can play in community capacity enhancement, there is a need to understand better what dimensions of community capacity may be developed through CBPR efforts and what factors contribute to the development of these capacities. Such an improved understanding will contribute to the development of strategies aimed at enhancing a community's capacity to protect against environmental exposures harmful to health. Using data from the evaluation of the Community Organizing Network for Environmental Health (CONEH) project, this article seeks to identify the dimensions of community capacity that were enhanced as part of a CBPR community health development approach to reducing physical and social environmental triggers associated with childhood asthma and the factors that facilitated or inhibited the enhancement of community capacity.

Definition of Community Capacity

Goodman et al. (1998) noted previous definitions of community capacity as (a) the characteristic of communities that affect their ability to identify, mobilize, and address social and public health problems (McLeroy 1996) and (b) the cultivation and use of transferable knowledge, skills, systems, and resources that affect community and individual level changes consistent with public health related goals and objectives (Rogers et al. 1995). As Freudenberg (2004) noted, the first definition is more of an outcome whereas the second focuses on the process by which capacity is created and thus might be a helpful guide for interventions seeking to increase capacity. Freudenberg built off of the framework of Goodman et al. and modified the dimensions to be more specific to environmental health (see Table 1). In this article, using the dimensions as defined by Freudenberg (see Table 1), we will assess the ways in which these dimensions were enhanced through a CBPR effort focused on reducing environmental triggers of childhood asthma in Detroit, Michigan.

Description of CAAA and the CONEH Project

Community Action Against Asthma (CAAA), a community-based participatory research partnership based in Detroit, Michigan (Parker et al. 2003), began in 1998 with funding from the National Institute of Environmental Health Sciences and the US Environmental Protection Agency. CAAA's initial proposal involved two combined projects: (a) a household intervention study to reduce environmental triggers for childhood asthma and (b) an epidemiological exposure assessment and health effects study of the relationship between ambient and indoor air quality exposures in Eastside and Southwest Detroit and children's lung function and other asthma health indicators. In following a CBPR approach, the work of CAAA has been guided by a steering committee (SC) comprised of representatives from community-based organizations (CBOs), health and human service organizations, and academia. The SC met monthly and was actively involved in all major phases of the research and intervention: for example, defining the research questions, designing survey instruments, hiring key staff, designing intervention activities and materials, co-presenting at conferences and meetings, and co-authoring manuscripts (Edgren et al. 2005; Parker et al. 2003). To ensure the partnership operated in a participatory fashion, the SC adopted a set of CBPR principles to guide the work of the partnership (Israel et al. 1998; Parker et al. 2003). The principles include that all partners are involved in all major phases of the research process, research is conducted in a way that strengthens collaboration and equity among all partners, and the research benefits the partners involved. In addition, the SC adopted dissemination procedures which explicate the role of all partners in the dissemination process.

The Community Organizing Network for Environmental Health (CONEH) was a project of CAAA—to complement the household intervention study—that focused on community organizing as a strategy to affect environmental health policy in the city of Detroit. As a CAAA project, the CONEH project was overseen by the CAAA SC and thus followed all CBPR principles. The CONEH project focused on environmental issues in Eastside and Southwest Detroit, although many of the activities of CONEH were citywide given that environmental issues extend beyond community boundaries. These areas of the city vary in terms of racial and economic characteristics, with Eastside Detroit predominantly African American (97%) and with lower socioeconomic status compared to other areas of the city and Southwest Detroit containing the majority of Detroit's Hispanic population (approximately 60%) with smaller populations of African American (16%) and White (20%) residents. The Eastside has a large number of single-family dwellings and contains a major interstate highway and some manufacturing plants. The majority of industrial facilities have historically been located in Southwest Detroit, where residents also experience heavy car and diesel truck traffic because of both the presence of two major interstate highways and the entrance and exit of the

Ambassador Bridge, the international border crossing that connects Detroit to Windsor, Canada (Keeler et al. 2002).

The major aims of CONEH were (a) to conduct and evaluate a multi-level, community-based intervention in order to reduce exposure to physical environmental and psychosocial environmental stressors associated with childhood asthma severity and exacerbation, and to strengthen protective factors (e.g., social support, community capacity) that may modify the effects of these stressors, and (b) to increase community awareness and knowledge of factors associated with the environment and asthma through the dissemination of research findings to community residents in ways that are understandable and beneficial to the community.

The CONEH project used a CBPR community health development approach with underpinnings in the ecological model. The ecological model (McLeroy et al. 1988) considers the interaction of the individual with his or her social and physical environment (Hancock 1993; Sallis and Owen 1997; Stokols 1992) and includes a range of individual and environmental factors that can influence behavior (and ultimately health). As noted above, CONEH sought to strengthen community protective factors, particularly community capacity.

Guided by this model, three community organizers were hired and based at CAAA partner organizations in Detroit. The organizers used a combination of community development and social planning and policy intervention approaches (Rothman 2001) to work with community groups and residents. In order to select and prioritize the major areas upon which to focus their community capacity-building efforts, the three organizers conducted interviews with key informants who represented CBOs and agencies in the neighborhoods involved. This information was then combined with data collected from the original two CAAA projects (i.e., the household intervention and the epidemiological exposure assessment) and information gathered at community forums (Lopez et al. 2005; Parker et al. 2008). On the basis of results of the data collected, the CAAA Steering Committee (SC) and project staff prioritized the following three major focus areas: (a) air quality, (b) housing, and (c) citizen participation in CONEH and policy decision-making.

Selected strategies undertaken by the community organizers and the SC to accomplish the goals of CONEH included activities such as door-to-door canvassing; organizing and facilitating community meetings around environmental concerns in the neighborhoods (e.g., monitoring of an elementary school constructed on a previously contaminated site, proposed expansion of several transportation-related projects); production and distribution of fact sheets for community members on issues such as the role of particulate matter (PM) in air pollution and health, housing and tenants' rights, and zoning regulations; writing and distributing press releases; policy briefings with local legislative representatives; presentations at conferences, community meetings, and forums; and CONEH staff and community member representation on and participation in state, city, and local advisory and policy-making boards. In addition, the SC members and CONEH staff provided information and assistance to the broader community to enable residents to advocate for consideration of the health effects of several transportation-related projects in Detroit (e.g., construction of the Detroit Intermodal Freight Terminal [DIFT] in Southwest Detroit, widening of an interstate highway, construction of a second international bridge crossing between Detroit and Windsor, Canada). Among the key strategies employed was providing education and data to community members and policy makers in order for these groups to understand the potential health implications of the proposed projects. Members of the CAAA partnership gave presentations to decision-making bodies (e.g., City Council, Council of Governments) around the effects of particulate matter (PM) on health and how proposed projects such as the DIFT would affect levels of air pollution in the community and health status.

Methods

In accordance with the principles of CBPR, the aims of the CONEH project were evaluated using a participatory and formative evaluation approach (Israel et al. 1995) in which SC members were active participants in the design and implementation of the evaluation activities including instrument development and the interpretation of the results. As part of the evaluation of the CONEH project, 20 one-on-one semi-structured, in-depth interviews were conducted between August and November 2005 involving 10 SC members (six CBO organization representatives and four university-affiliated research team members), five CONEH staff members, and five key community organization staff and/or community members who were not part of the CONEH partnership project but who were engaged in environmental health and environmental activism efforts in Detroit (hereafter referred to as “non-affiliated key community members”). As part of the interview, participants were asked to assess the impact of the project in terms of accomplishments, including increases in community capacity, and to identify factors that facilitated or hindered the achievement of accomplishments. The interviews lasted approximately 1.5 h and were conducted by a graduate student research assistant trained in qualitative methods who was not an active participant of CONEH or CAAA. As described below, for the purpose of this article we focused our analysis on participants’ perceptions of community capacity enhancement and facilitating factors for or barriers to that enhancement.

All interviews were tape recorded and transcribed verbatim. The University of Michigan’s Institutional Review Board approved the qualitative research protocol and interview guide. The transcribed interviews were analyzed using an open, focused coding process (Strauss and Corbin 1998). In vivo codes (i.e., codes using the words of the respondent) were assigned to restatements through a line-by-line, cross-interview analysis of the raw data. From the in vivo codes, focused code categories that exemplified specific themes that were identified from the data were developed. We then examined the extent to which the themes identified in the data were examples of and spoke to the dimensions of community capacity as articulated by the community capacity framework of Freudenberg (2004). This included examples of the dimensions and, where identified, facilitating factors for and barriers to community capacity. The analysis was conducted by a three-member research team consisting of the research assistant who conducted the initial interviews and two members of the research team with expertise in qualitative methods. It should be noted that given the cross-sectional nature of the data, it is difficult to say if these dimensions of community capacity were present before the project began or resulted from the project.

Results

Table 2 presents relevant examples from the CONEH project of the dimensions of community capacity that were present as described by CAAA SC members, CONEH staff, and non-affiliated key community members. The following section describes those dimensions in more detail, including facilitating factors and barriers to enhancing dimensions of community capacity, when identified by interviewees.

Leadership

Although not a part of the original proposed activities, a strong youth outreach initiative was developed given the recognition of a need to engage and educate youth about environmental issues and health. The vast majority of respondents were pleased with the focus on youth participation and development because it enabled a “whole different perspective” to be brought to the project. As stated by one staff member, “a lot of people kind of just ignore the youth” instead of “training them now.” In addition to educating youth through volunteer activities and sponsored events, CONEH staff accompanied youth to community meetings where they

learned more about environmental issues and health and had them do research on the Internet. As a result of these efforts, young adults became interested in environmental advocacy:

I don't know that much about the DIFT but, you know, I want to sign up to vote because I want to stop all this.... So it's like you think you're not making that much of an impact but when you have these young adults come to you and start asking you questions about it, it's a good feeling. It's then you know that, you know, it's working. Maybe I'm not getting everybody that I would like to, but I'm getting the ones that can make a difference for the future because these are our future; these are the ones that are gonna be able to vote and to be able to say what's gonna happen in their communities. And you're giving them information...[and] leadership skills to learn how to advocate. (SC member)

The youth group at a partner agency also developed a *Toxic Tour* video, complete with narration and music, as a teaching tool for community residents. In large part, CONEH's success with building environmental justice leadership among youth was attributed to the existing relationships of CONEH staff members and partner organizations with youth programs across the city of Detroit.

Participation

Respondents noted that the CONEH project had increased the number of community members, community organizations, and youth in Southwest Detroit participating in addressing environmental health concerns. When asked about the accomplishments of CONEH, one SC member replied:

Bringing people to the table that had never been before, people who had never been involved or never thought about environmental issues in the community becoming engaged and informed about what was happening and realizing that they could have an impact on policy was a huge thing.

This participation extended to participation of community members on governmental advisory boards such as the Local Advisory Council (LAC) set up by the Michigan Department of Transportation (MDOT) for the purpose of giving input for the proposed Detroit Intermodal Freight Terminal (DIFT) project. While advisory boards had existing community representatives, they were not always from the community most affected by the proposed activity or representative of the ethnic and racial composition of the community. As one SC member noted,

I think that the fact that we were able to place [people], regardless of who they were, at levels, in position to contribute to decisions, whether that was at the community advisory committee for DIFT...that there was a presence. I think that was an accomplishment. This had never been done before.

However, this was not easily achieved, as in the case of the DIFT LAC where there was initial resistance to CAAA's request for community representation (as will be discussed in more detail under Community Power).

A crucial facilitating factor for creating community capacity through participation was the increased awareness and knowledge of the role of environmental factors in health and an increased understanding of the process for policy making. Respondents agreed that the CONEH project had helped to educate community members about the importance of considering environmental issues and their potential contribution to individual health.

Together, community knowledge and locally relevant data generated by CAAA helped to facilitate the community's efforts to have a stronger voice to bring about change. The research

findings were shared broadly with community groups and residents through CONEH staff and SC community and university members via presentations, fact sheets, and smaller group meetings and were used by local residents and organizations throughout the Detroit area. Respondents spoke to the potency of this combination:

I think, in general, we've been very effective and persuasive communicators. You know, we are a joint effort of people with certain academic credentials with people that are, you know, based in the community, understand the community. And that's a potent combination; it works well... you know what you have to say is, you know, it's valid, important information, and it isn't easily refutable, and it's backed up by a tremendous amount of community interest and activism. (SC member)

Some respondents indicated that environmental issues were not always on the forefront of residents' concerns because of a focus on other issues that occupy their attention or lack of knowledge of the link between environmental factors and disease. One of the non-directly affiliated respondents noted that oftentimes asthma is "framed in a way that's like very individual in terms of the problem," with "very few people or organizations talking about sort of the built environment and the environment that affects...asthma." The respondent continued onto say that the research findings helped residents to make the connection between the environment and personal health, which was key.

Armed with this new knowledge of the link between environmental concerns and health, community members were able to articulate their concerns about transportation-related and other development projects that might increase the amount of PM in their communities. One of the staff members of CONEH explained:

I know that before this project, I never knew anybody that knew what particulate matter was. And at the end of this project, those people that were getting up and speaking. That would have never done it before, grassroot community folks that were actually using terms of PM_{2.5}, you know, ultrafines, things that I believe CAAA through a process educated these community people to be able to stand up and know what they were talking about when they were going up to microphones at forums, at community meetings, at block clubs.

Another factor that contributed to enhancing participation was the focus of CONEH on increasing governmental agencies' awareness of how to better include community representation and participation in decision-making bodies. Noted one SC member,

I think that's another accomplishment to these kind of governmental bodies and organizations of how to properly do community involvement. You know, I think that whether or not they'll actually listen to anything that the Local Advisory [Council] says or not remains to be seen. But if you saw the way that the [consulting group] helped MDOT set up for this bridge Local Advisory [Council], it was much more, I thought, representative of the persons of color in that neighborhood. I don't think it's necessarily ill will on the part of governmental bodies, but just that people are assigned to set up the advisory board that had no idea how to really make it representative or increase participation.

Skills

Respondents noted enhancement of knowledge and policy advocacy skills for SC, staff, and community members around environmental health. These skills included increased facility around use of environmental health data, policy advocacy skills, and increased knowledge of the decision-making process for public work projects. Although the majority of staff members and Detroit-based SC members were actually from the community, CONEH provided them

with a deeper understanding of local environmental issues and policy. In turn, this knowledge helped them to gain valuable skills in community organizing:

It was amazing to me how much I realized I didn't know. I never liked the idea of Detroit's incinerator sitting in the middle of the city, but I just thought that it was just a big cumbersome thing that, you know, a lot of the smoke coming out of the stack but I didn't really think about what type of impact it was having on the environment in reality. And, that's one of the things I went right around telling people over and over again about, you know, what this thing was really doing. And I think that—that what I was looking for...to get people to recognize what was really impacting them. (CONEH Staff member)

Many respondents also commented that community members were empowered by CONEH's outreach activities and, as a result, "seem[ed] to be asking the right questions and making the right comments." In addition to increasing local knowledge, CONEH enhanced the capacity of those involved through the enhancement of their policy advocacy skills. SC members and CONEH staff gained valuable exposure to public speaking and how to present research findings and data to policy makers, government officials, and the general public. Through the modeling of involvement in the political process by SC and staff members, respondents noted that community members who may not previously have been involved with policy advocacy became engaged. An example of how this was accomplished in Southwest follows:

We've taken a lot of people from our English as a Second Language classes to some of the meetings on the DIFT and environmental justice issues, and these are folks who had been feeling very disenfranchised through the whole political process—didn't think that they had a voice or any impact—and to learn that not only could they have an impact but that there were legislators and policy makers who sincerely were listening to them and that they could make a difference was very, I think, for me was a huge thing, 'cause this [Southwest] has typically been a community that has not been involved in the political process. (SC member)

Through employing strategies such as door-to-door canvassing, collecting signatures, writing press releases, and active participation in community meetings and forums, results of the evaluation suggest that CONEH also had a positive impact on increasing skills within organizations in the community. Respondents noted that CONEH increased awareness around the health impacts of the proposed land-use and transportation projects among organizations that were both peripherally and more closely (i.e., SC members) involved in the project. For organizations that had focused primarily on the environmental implications of the proposed projects, presentations and interactions with CONEH staff led to increased awareness and increased skills in understanding and interpreting air quality and health related data.

CONEH also helped staff with professional development by providing skills that could be readily applied to future employment opportunities. Staff honed their research, writing, and computer skills through activities such as developing fact sheets on topics such as asthma and air quality, tenant rights, and zoning laws; engaging in letter writing campaigns; and developing a resource guide to educate the community about health and social services available in the Detroit area. Staff also gained skills in networking and interviewing when they undertook the interviews with key informants at the beginning of the project as part of the initial assessment and prioritization process.

Resources

Respondents identified resources that were made available for addressing environmental health concerns through the CONEH project. Among those resources were access to locally relevant data and project staff to support policy advocacy-related activities. Respondents lauded the

availability of research findings that were specific for the city of Detroit to assist with on-the-ground advocacy efforts:

I think one of the best contributions has been just having real data, you know, about asthma and air quality and the connection between those in our community. And I think that's something that we're always looking for and something that, you know, CONEH helped to provide.... The data that came out of CAAA was really, in my mind, was really, really key and should be viewed as an independent source, because the University was involved producing that data that's been really, really useful in terms of advocacy work and trying to make some policy changes or direct community changes, you know, that would actually help people's lives and quality of living. (Non-affiliated key community member)

The fact that we had and have data that was collected in Detroit specific to these issues, you know, as part of CAAA, has been and hopefully will continue to be a powerful advocacy tool. So, it's not just coming in and saying, "Well, in L.A. they found this"... you know. We can say, "In Detroit—the work that we've done, here's what we've seen." And, I think that's been really compelling to be able to have that information. (SC member)

Having locally relevant data itself, however, was not enough to not make it accessible to the community. Respondents indicated that what helped to enhance this resource for community capacity was translating the research findings into lay language. Furthermore, university partners demonstrated a willingness and ability to share the research findings in a way that was respectful of community members:

I think people benefited because they felt like they were being treated respectfully. Here were scientists who are willing to explain this complicated scientific stuff to them in their language, who believe that they could understand it. You know, who respected them enough to explain it to them. People were thrilled with that! (CONEH Staff member)

The presence of CONEH staff was also identified as a resource to create capacity. When asked about facilitators for CONEH's accomplishments, a non-affiliated key community member identified staff as instrumental to CONEH's accomplishments:

Just having a team to do community organizing, and to get the word out, and to talk to people, and to talk to residents, that's a huge plus, and otherwise it's—so often, at least what I've observed here and also at a distance is that there's always a disconnect between academia and the community, for whatever reason it's just there. And, so, I saw CAAA's organizing piece as sort of the bridge to that, making like these really important studies and findings and recommendations that are coming out of the University; but also making it really accessible to people in the community in a way that makes sense to them, and also doing the research in a way that's appropriate and makes sense for the community. (Non-affiliated key community member)

Respondents also noted that having established relationships and access to University faculty and their research expertise was an important resource that contributed to an enhanced capacity on the part of the community to address environmental health concerns. Thus, it was not just access to locally collected data but also access to scientists who could comment on the technical aspects of the proposed activities that was viewed as a resource:

I think one of the things that we gained was a, you know, a closer connection to some people in the University who were doing research in areas that we have an interest in and continue to, you know, relate to some of them and be in contact with them. You know, for example, when we were just a couple weeks ago writing our comments to MDOT about the DIFT, you know, in a draft of that statement we followed, you know,

some of the researchers at the University to ask for their assistance and so that's definitely benefited us, you know, beyond the scope of the project. (Non-affiliated key community member)

Social & Organizational Networks

Respondents identified the bringing together of community organizations as an accomplishment of CONEH. Community organizations that had differing foci and priorities, and thus had not previously worked together, came to know each other and work together during CONEH. A respondent from an organization not directly affiliated with CAAA noted that "CONEH brought us more into contact with other groups in the community that we hadn't been working with...other groups that are community-based...[and] share some of our concerns but we hadn't worked with previously." This collaboration was seen as positive, with CONEH being acknowledged for bridging relationships and increasing awareness of the presence and foci of other organizations. CONEH also increased collaboration among community organizations that appeared to have competing interests, but upon collaborating, realized they may not:

The collaboration of different agencies and entities coming together for that, collaboration with community agencies...was a good thing—how do I say it without being—it brought out a lot of people that were looking at only economic development as opposed to what the community's environmental injustice was. (SC member)

Sense of Community

CONEH pushed the geographic barriers by creating a greater sense of community, particularly between areas of the city that differed racially and ethnically and on priority issues—the Eastside and Southwest areas of Detroit. These areas are quite different in terms of race, ethnicity, and culture, and traditionally they have not always interacted or worked with each other. As acknowledged by one staff member,

Detroit has been divided from the time that I was in elementary school as being Eastside versus Westside. CONEH brought these groups from southwest Detroit with the Eastside groups, groups that dealt with housing development with groups that dealt with child development, all under this common goal of environmental issues. (CONEH Staff member)

Participation in sponsored events enabled residents from all areas of the city (and from a neighboring city) to engage in a dialogue in order to better understand "how they were similar and how they were different in their outlooks." Many respondents mentioned that CONEH worked with other organizations to build alliances, traversing geographic locales and cultures. Most notably was the relationship formed among the Detroit communities and Dearborn, which borders Detroit:

[There was an organization] fightin' for rights in Dearborn for the Arab people—kind of the same as what we were doing for the Hispanic people and Eastside was doing for the African American people—coming together and utilizing our resources at the University, you know, our data to go not just to Detroit, but to entities in Dearborn. And being Arabs, Hispanics, and African Americans together to kind of present, you know, these findings, in a sense, to different entities... We went to state representatives together. And it wasn't like a Hispanic fight alone. It wasn't an African American fight alone. It was like—it was different cultures coming together. (CONEH Staff member)

Understanding of Community History

Limited references were made to examples of the dimension *understanding of community history*. One SC member described how underlying political and economic factors affect change in the community, demonstrating an example of understanding of community history and critical reflection. Noting the environmental problems her community has experienced compared to other, more affluent Southeast Michigan communities, this respondent questioned why her community has had to face these issues for many years when other communities have not. She noted that efforts have been made in her community to overcome these disparities:

I mean, because look, we had [an elementary school] built on contaminated land. Would that happen in Grosse Pointe? Would it happen in St. Claire Shores? You know, would it happen on Northwest side? No. It happens on this side [southwest Detroit] because the fact is, and I realize we have a long way to go; we're not politically strong; we don't have a lot of votes that come out on this area. And I know that's why we get dumped on. And I know that's a lot of our problem. We're working on it slowly but surely. But people kind of give up. They give up and go, "Okay, what's the point in voting." You know, the schools suck, services suck, you know; we're so polluted in this area; nobody wants to live in this area; property taxes are going up. But, yet, we're still being dumped on. So, yeah, okay, I understand, we're not politically strong. I understand that one hundred percent. But I also understand that through our own efforts in this community, this population has pulled itself up tremendously. (SC member)

Many respondents recognized that the importance of environmental health may differ by entity and community. Because the transportation-related projects that would affect the environment and personal health were happening on the southwest side of Detroit, and not in the Eastside, making the connection between environmental factors and health was not as salient to Eastside residents as other issues, such as economic development.

Community Power

While respondents noted the success in getting the message about the health effects of transportation projects to local and state policy makers and governing boards, they also expressed the challenges of achieving power. One example of an achievement of community power concerned a school environmental threat. The successful resolution of this threat was facilitated by many community entities, including CONEH. The elementary school had been constructed on a previously contaminated site that had not been properly cleaned. The majority of the parents of the school-aged children were Spanish-speaking. CONEH's field coordinator, a long-time resident of Southwest Detroit and native Spanish speaker, served as an intermediary and interpreter during meetings between parents of the children attending the school, a non-profit legal organization representing their interest in a suit against the school system, and the school system itself. The field coordinator was able to ensure that parents' concerns were represented in the eventual settlement and post-settlement monitoring agreement.

The [elementary school] I think was another major accomplishment in terms of that lawsuit. And, again, while it may not have been as directly involved with childhood asthma... you know, kids are in school on a toxic site...and they won the need to monitor that and make sure it continues to be safe and so forth... It was built, over community protest, on either a toxic landfill or some sort of not good place. And supposedly they, you know, cleaned it up and layered things and did all the proper precautions so that it would be safe, but there is still considerable concern about the safety and the desire on the part of parents to—that there should be ongoing monitoring to be sure that it's safe. And that wasn't happening. And, so that ultimately they sued the school system, I'm pretty sure it was, and won the lawsuit—it was like

a class action suit—but it took a lot of mobilizing of community members and informing them and [CONEH’s Field Coordinator] was really instrumental in that. (SC member)

According to respondents both directly and indirectly involved with CAAA, the conflict facilitated the creation of a vibrant Parent Safety Committee to monitor the site and advocate on behalf of all parents at the school. The success of the school initiative is ongoing and, as noted by one of the non-affiliated key community members, “We are constantly able to challenge some things that [the school system] has done and help make some changes in terms of the things that they are providing the parents.”

Although SC members, CONEH staff, and other community members had hoped for the successful resolution of many of the public works projects, the DIFT is an example of a yet to be resolved effort that represents the community’s lack of absolute power needed, as Freudenberg (2004) notes, “to resist changes affecting the community’s environment.” Working alongside other community groups that were opposed to the DIFT, the CAAA, SC, and CONEH staff spent considerable time and effort with mixed results. SC representatives were successful in presenting their research results to the Detroit City Council, which passed a resolution on July 31, 2002, stating that the DIFT had not been shown to be necessary. The City Council then passed an additional resolution on June 25, 2003, which included many of the points emphasized by CAAA and other community groups, that is, criticizing MDOT’s public participation process, their failure to include public health impacts in their environmental impact statement, and environmental justice concerns (US Environmental Protection Agency 2004). As indicated by a SC respondent, CONEH’s involvement and the research findings contributed to the passing of these resolutions:

I do think that there has been an impact. When I think about the presentation that was made [by CAAA] before City Council, for instance...around the known information about PM_{2.5} and the Ambassador Bridge during 9–11, seeing those folks faces when the presentations were made and convening the kind of people we had at the table to deliver that information. It had an impact. (SC member)

The SC was also successful in gaining representation on the DIFT LAC and received permission to present during a LAC meeting about the importance of considering health impacts within government mandated environmental impact statements. A non-affiliated key community member relayed her experience:

In terms of the research findings or the summary findings, I was at a meeting for the DIFT at their Local Advisory Council where CAAA was able to have a presentation there. And I think that they were trying to, one, just get a seat at the table for months, and months, and months; and, then, two, just to have a presentation there for months, and months, and months, and being turned down for months, and months, and months. So, finally when they were able to have a presentation there I think it was really helpful for me and also just non-LAC members and just regular community folks who attended to see the actual presentations, and to sort of—not really to validate like the concerns that people already had about the health impacts, but just to just provide more evidence that increased trucks in the area are going to lead to increased asthma, you know, attacks or hospitalizations. So it just, it provided more, I guess, fuel for the fire, I guess.

But while respondents lauded the positive impact that CONEH had, they also noted the long (and as of yet, unsuccessful) process of demonstrating the community’s power in resisting changes that affect the community’s environment and the long process of achieving outcomes representative of power. One SC member, while noting that the project remained unresolved, stated the impact that she felt had been made:

At the [DIFT Local] Advisory [Council] level, the fact that we were insistent that public health information about the DIFT be presented and provided to the decision makers. That had an impact. Now, I know that folks are still negotiating as though the project is going to exist, but the impact has been reduced in terms of the original 16,000 trucks and all that kind of stuff. And there's a level of negotiation that may not have happened if there had not been the kind of assistance that people provided at the ground that would push this process forward.

A non-affiliated key community member noted the difficulty of knowing when a success has been achieved when resisting outside projects that may harm the community's health:

Gosh, you know, I guess in some ways I think the difficulty with a lot of what we do and, therefore, the, you know, the projects that we're involved in is that it's not easy to see an impact a lot of times. And so, you know, for instance, the DIFT continues on; we don't know what's gonna happen in that situation.

Community Values

Although many residents had shared values around environmental issues in their community, some differences were evident in terms of willingness to compromise around proposed transportation projects in Southwest, suggesting that by Freudenberg's (2004) definition, this community had not yet achieved this element of community capacity. While some community members believed that public works projects should not be accepted as proposed and were not willing to compromise, other community members felt that they could accept alternative plans if appropriate provisions such as acknowledgement of economic development were made to the community. When asked if any tensions arose between CAAA and other groups, respondents mentioned how the philosophy of CAAA/CONEH differed from that of an already existing community coalition organized to fight the proposed DIFT project. This other group and its affiliated community members wanted alternatives that favored economic development while providing some environmental protection provisions. While the SC supported this group at first, after further interaction with community residents regarding the DIFT, the SC decided to take a position of not accepting the proposed DIFT project, regardless of proposed alternatives, due to concern about harmful air quality and disruption to the surrounding neighborhood. This conflict was described by a SC member:

There was big tension between ourselves and—[the community coalition]. We still have a disagreement with them about negotiating. They have a particular interest in negotiating a particular resolution with the DIFT. They want the DIFT to be structured in a way that will give them funding for some economic development projects that they want in the area, regardless of the health impact and what the rest of the community wants. So we had some major disagreements about that. Also, the fact that most of the people that they have around the table were White, and—they didn't—and they did not include people of color, people who live in this community. People who have a long history in this community were not invited to their meetings, were not welcome at the table, their opinions were not included in their position, and they've moved forward with their position regardless of what the rest of the community wants. So they've never taken into consideration the values of this community, the culture, the health needs, those are not important.

Another example of differing values arose internally among SC members. This tension presented a major challenge around values and expectations associated with taking a position on specific environmental issues. The SC had adopted a consensus model for decision making where all partner organizations express agreement to the proposed activities before the activities are implemented. But rarely in the past had the SC focused on decisions with potential political and/or funding ramifications. This caused some of the more environmentally focused

members of the SC to express their frustrations about what they perceived as differing norms about taking a political stand. As summarized by one SC member:

And I'm sure other people have mentioned sort of this challenge we had of how to get us all to agree that we could take stands on issues, particularly for some community-based organizations it's very threatening. They are thinking they could potentially lose their sources of funding from City groups if they oppose those City groups. And they're not primarily about environmental; that's one of the many things they do. So they have to sort of make sure that they're, not cutting off the source of funding from their constituency or other kind of funding. (SC member)

Critical Reflection

Respondents demonstrated critical reflection in three ways. The first was a recognition of how early strategies of CONEH may not have been appropriate. The second was an observation that economic arguments are often made in opposition to an action to reduce environmental threats (and their response to that argument). Third was a frustration that CONEH had not made more progress in changing environmental policies.

In reflecting upon previous strategies used by CONEH, a respondent described a time when CONEH staff, with the approval of the SC, wrote a letter to a high-ranking government official asking that official to fire the project manager. The staff and SC felt the project manager was not being responsive to community concerns and input about the proposed project. The respondent who described this incident noted that the action was a mistake, did not achieve what the group wanted, and ended up hurting CONEH's credibility.

As described previously under Community Values, respondents also spoke about how CAAA's philosophy differed from an already existing community coalition organized to fight the proposed DIFT project. This other group and its affiliated community members wanted alternatives that favored economic development while at the same time providing some environmental protection, but CAAA and other community groups and members that were not affiliated with the coalition wanted alternatives that protected the community as much as possible from potentially harmful air quality, despite economic ramifications. Noted a SC member,

And then more recently, there's been this... letter that came out that we were—coming from [the coalition], which we were asked to sign because some other community groups in Southwest Detroit were trying to negotiate with the DIFT to say it's okay if you do these things. And these are folks who are particularly interested in economic development issues. And some of our partners don't feel like those economic development issues are in the best interest of the community. And, so, you know, it's not just CAAA, CONEH, and these organizations but the organizations themselves, you know, within southwest Detroit trying to figure out whose side they're on and you know, who they support. And, so that's created some tension, again, around the DIFT.

Respondents also commented on the need to critically reflect on the often mentioned tension between economic development and environmental concerns. The DIFT project had promised the creation of jobs as well as broader economic benefits to Southeast Michigan through the more efficient movement of goods through the area. Yet, community members expressed concerns about how many of the immediate jobs would benefit residents of southwest Detroit or why some of the major car companies had not endorsed the DIFT if it was to benefit Southeast Michigan and manufacturing industries. One staff member raised the possibility of economic development and environmental stewardship co-existing, noting the following:

Basically what's going on is...the traditional fight between economic development and environmental issues. Seeing them as two separate things warring against each other and not recognizing how they're really, you have to do both. They don't have to war against each other. I mean, for example, if there's really crappy air quality in your community... you can't encourage businesses to locate there. They're not going to want to be there. Their families aren't gonna want to be there, if they don't have good air. Or if you don't have green areas, parks, places for people to walk they're not gonna want to be there. And if you have just housing that is old and leaky and with lots of cracks that lets in cockroaches and mold, you know, liquid and you get mold and stuff, it's not healthy and people aren't gonna want to be there. So, you have to pay attention to the environment in order to have economic development. So, I think people are gonna be looking for ways to get that message across and to form more partnerships with economic development types.

Finally, respondents noted their disappointment with not achieving more policy change resulting in through improved environmental health through the CONEH project. When asked what they hoped CONEH would accomplish, a SC community member responded:

I really was hoping for policy change. I was hoping for policy change. And by doing that policy change that maybe Southwest Detroit would be looked at differently instead of just an industrial area, and a border town, and an area that people like to dump all their stuff environmentally—factories, companies that are polluting left and right. People always say, “Oh”, you know, “that’s an industrial area. What do you expect?”.... I think one of the—some of the—well, one of the policy changes I was hoping would be that—to look at an area that has been considered industrial for many years and has been polluted for many, many years, the policy would say we have to now look at an area demographically and say this particular population has escalated regardless of whatever has been there for the last ten years, and the pollution that has come there. Now we need to look and say, okay, legislatively—policymaking and looking at legislation states that this particular area has already had enough and it needs to change and let it develop into a different type of employment, whether it be manufacturing or something different or tourism or something.

Study Limitations

There were several limitations to this study. Among these was the cross-sectional nature of our data, which did not allow for deeper exploration of the processes through which community capacity was increased as a result of the CONEH project. In addition, our reliance on only one method of data collection (i.e., in-depth interviews), although rich in content, limits our ability to generalize our findings to the broader community. The generalizability of our study results is further limited by the small sample size of the interviews. The inclusion of other sources of data and increasing the number and variety of persons interviewed would strengthen this study. A final potential limitation is that our interview guide did not explicitly ask respondents to assess how CONEH had increased the capacity of the community around environmental health advocacy; rather, respondents were asked to describe the goals of the project, their expectations of what they had hoped CONEH would accomplish, and their perceptions of CONEH's accomplishments and factors that both facilitated and hindered these accomplishments. This may, in part, explain the limited number of examples for some of the dimensions of community capacity and the limited number of facilitating factors and barriers that were identified by participants as essential for community capacity building efforts. However, though this is a potential limitation, the type of questions that were asked may have actually strengthened our findings, as participants were not led to discuss issues of community capacity, but rather, examples emerged naturally from their perceptions and observations of the project and its results.

Discussion and Implications

Participants identified the presence of aspects of all of the dimensions of community capacity in the communities involved in CONEH and attributed enhancement of many of these aspects to the CONEH project. Of the ten dimensions of community capacity, respondents described the most examples of participation, skills, resources, community power, and critical reflection. This may be because these dimensions were more salient for the goals and activities of CONEH and the CBPR approach the project took, or it may be due to the previously mentioned limitation of the interview questions, which did not ask specifically about the dimensions of community capacity. Particularly striking are the lack of examples of the dimension of leadership, where only examples of youth leadership development emerged. Given the identified importance of leadership in capacity-building initiatives (Goodman 2008; Kegler et al. 2008; Zakocs and Guckenburg 2007) the lack of examples is surprising. However, given the limitations of the data collection methods, it is difficult to know if the lack of mention of leadership is due to an actual lack of demonstration of leadership in the communities or to the limitations of the questions asked of respondents.

The existence of a CBPR partnership—described as a “potent combination” of university and community members—appeared to facilitate many of the capacity building efforts undertaken by CONEH. Through this partnership and the efforts of project-related staff, community members gained an increased awareness of the link between the environment and health as well as exposure to and skills in the process of decision-making and policy advocacy around environmental and transportation-related projects in the city of Detroit. In addition, the existence of locally relevant data collected by CAAA’s partnership facilitated the building of new relationships and collective efforts to resist public works projects in Detroit. Not only was the data useful to CAAA, but other CBOs and community members were successful in leveraging the data to help argue against projects that would negatively impact the health of community residents.

Although many dimensions of community capacity were enhanced, notable barriers limited CONEH’s ability to actualize environmental health policy change. First, respondents described how economic development and personal health were often seen as competing community values rather than complementary options where one can “choose to have both.” Many respondents described the tension between community groups and residents who believed public works projects that have the potential to harm a community should not be accepted, while others were willing to compromise if economic development concerns were addressed in these projects. Second, respondents noted that some neighborhoods in Detroit have historically been marked by ongoing environmental contamination, while other, more affluent communities in Detroit and the outlying areas are spared. This observation acknowledges the role that socioeconomic status plays in achieving community power. As stated by Freudenberg (2004) and Minkler et al. (2008), larger economic and social constraints affect a community’s ability to fight environmental threats, particularly communities of color.

From our experience using the community capacity framework (Freudenberg 2004; Goodman et al. 1998) to analyze our evaluation data, we suggest the following implications for future community health development intervention research: First, neither the original community capacity framework by Goodman and colleagues (1998) nor the adaptation by Freudenberg (2004) provide guidance on whether some dimensions are more important than others, how the dimensions relate to each other, or to what level a dimension has to be achieved in order for the community to be considered competent. While our data do not allow us to answer these questions, we believe these are all areas for future research activities to explore.

Second, we note the need to recognize that the usefulness of some of the dimensions may differ in different community contexts. For example, responses indicative of community values suggested a lack of “shared norms and standards,” leading us to question how likely it is to find situations where all community members will share the same values and norms. Perhaps more important to community capacity (and a better indicator of the achievement of community capacity) is the ability of community members with different norms and values to agree to disagree and work through their differences in confronting external threats to their communities.

Finally, our study, similar to previous studies focusing on environmental health development (Freudenberg 2004; Minkler et al. 2008), used the community capacity framework to frame the evaluation of our project and not necessarily to inform the intervention. Our use of the framework, though limited, as well as the results of previous studies, lead us to believe that that application of the framework to inform the design and evaluation of explicit strategies to strengthen community capacity would be useful, particularly for projects employing a CBPR approach.

Conclusion

In this study, we used qualitative in-depth interviews to explore how a community health development project using a CBPR approach enhanced the capacity of a community around environmental health. In spite of the limitations presented by our methods, our findings suggest the viability of a community health development intervention using community organization methods to enhance the capacity of a community. The results of our research also demonstrate the potential of the community capacity framework developed by Goodman et al. (1998) and adapted by Freudenberg (2004) as a guide for planning and evaluating projects that seek to enhance community capacity, though further research is needed to better understand the actual dimensions, their relationship to each other, and their applicability to different community contexts. Finally, our results suggest that the use of a CBPR approach to community health development can contribute positively to the enhancement of community capacity. This, in turn, can lead to the reduction of environmental hazards and improved health of community residents.

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References

- Edgren KK, Parker EA, Israel BA, Lewis TC, Salinas MA, Robins TG, et al. Community involvement in the conduct of a health education intervention and research project: Community action against asthma. *Health Promotion Practice* 2005;6(3):263–269. [PubMed: 16020621]
- Freudenberg N. Community capacity for environmental health promotion: Determinants and implications for practice. *Health Education & Behavior* 2004;31(4):472–490. [PubMed: 15296630]

- Goodman RM. A construct for building the capacity of community-based initiatives in racial and ethnic communities: A qualitative cross-case analysis. *Journal of Public Health Management and Practice* 2008;(14 Suppl):S18–S25. [PubMed: 18843233]
- Goodman RM, Speers MA, McLeroy K, Fawcett S, Kegler M, Parker E, et al. Identifying and defining the dimensions of community capacity to provide a basis for measurement. *Health Education & Behavior* 1998;25(3):258–278. [PubMed: 9615238]
- Hancock T. Health, human development, and the community ecosystem: Three ecological models. *Health Promotion International* 1993;8(1):41–47.
- Israel BA, Cummings KM, Dignan MB, Heaney CA, Perales DP, Simons-Morton BG, et al. Evaluation of health education programs: Current assessment and future directions. *Health Education Quarterly* 1995;22(3):364–389. [PubMed: 7591790]
- Israel BA, Parker EA, Rowe Z, Salvatore A, Minkler M, Lopez J, et al. Community-based participatory research: Lessons learned from the Centers for Children’s Environmental Health and Disease Prevention Research. *Environmental Health Perspectives* 2005;113(10):1463–1471. [PubMed: 16203263]
- Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research: Assessing partnership approaches to improve public health. *Annual Review of Public Health* 1998;19:173–202.
- Israel, BA.; Schulz, AJ.; Parker, EA.; Becker, AB.; Allen, A.; Guzman, JR. Critical issues in developing and following CBPR principles. In: Minkler, M.; Wallerstein, N., editors. *Community-based participatory research for health: From process to outcomes*. 2nd ed.. San Francisco: Jossey-Bass; 2008. p. 47-66.
- Keeler GJ, Dvonch T, Yip FY, Parker EA, Israel BA, Marsik FJ, et al. Assessment of personal and community-level exposures to particulate matter among children with asthma in Detroit, Michigan, as part of Community Action Against Asthma (CAAA). *Environmental Health Perspectives* 2002;110 Suppl 2:173–181. [PubMed: 11929726]
- Kegler MC, Norton BL, Aronson RE. Strengthening community leadership: Evaluation findings from the California Healthy Cities and Communities program. *Health Promotion Practice* 2008;9(2):170–179. [PubMed: 17510471]
- Lopez EDS, Parker EA, Edgren KK, Brakefield-Caldwell W. Planning and conducting community forums to disseminate research findings using a CBPR approach: A case study from community action against asthma. *Metropolitan Universities Journal* 2005;16(1):59–76.
- Marmot, M.; Wilkinson, RG. *Social determinants of health*. 2nd ed.. New York: Oxford University Press; 2006.
- McLeroy, KR. Community capacity: What is it? How do we measure it? What is the role of the prevention centers and CDC?. Paper presented at the Sixth Annual Prevention Centers Conference, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion; Atlanta, GA. 1996 Feb.
- McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Education Quarterly* 1988;15(4):351–377. [PubMed: 3068205]
- Minkler M, Vasquez VB, Tajik M, Petersen D. Promoting environmental justice through community-based participatory research: The role of community and partnership capacity. *Health Education & Behavior* 2008;35(1):119–137. [PubMed: 16861594]
- Minkler, M.; Wallerstein, N. *Community-based participatory research for health: From process to outcomes*. 2nd ed.. San Francisco: Jossey-Bass; 2008.
- Parker EA, Baldwin GT, Israel B, Salinas MA. Application of health promotion theories and models for environmental health. *Health Education & Behavior* 2004;31(4):491–509. [PubMed: 15296631]
- Parker EA, Israel BA, Robins TG, Mentz G, Xihong L, Brakefield-Caldwell W, et al. Evaluation of community action against asthma: A community health worker intervention to improve children’s asthma-related health by reducing household environmental triggers for asthma. *Health Education & Behavior* 2008;35(3):376–395. [PubMed: 17761540]
- Parker EA, Israel BA, Williams M, Brakefield-Caldwell W, Lewis TC, Robins T, et al. Community action against asthma: Examining the partnership process of a community-based participatory research project. *Journal of General Internal Medicine* 2003;18(7):558–567. [PubMed: 12848839]

- Rogers, T.; Howard-Pitney, B.; Lee, H. An operational definition of local community capacity for tobacco prevention and education. Palo Alto: Stanford Center for Research in Disease Prevention; 1995.
- Rothman, J. Approaches to community intervention. In: Rothman, J.; Erlich, JL.; Tropman, JE., editors. Strategies of community intervention. 6th ed.. Itasca: Peacock Publishers, Inc; 2001. p. 27-64.
- Sallis, JF.; Owen, N. Ecological models. In: Glanz, K.; Rimer, BK.; Lewis, FM., editors. Health behavior and health education: Theory, research, and practice. 2nd ed.. San Francisco: Wiley; 1997. p. 403-424.
- Schulz A, Northridge ME. Social determinants of health: Implications for environmental health promotion. *Health Education & Behavior* 2004;31(4):455–471. [PubMed: 15296629]
- Stokols D. Establishing and maintaining healthy environments: Toward a social ecology of health promotion. *American Psychologist* 1992;47(1):6–22. [PubMed: 1539925]
- Strauss, A.; Corbin, J. Basics of qualitative research: Techniques and procedures for developing grounded theory. 2nd ed.. Thousand Oaks: Sage Publications, Inc; 1998.
- US Environmental Protection Agency. Children’s Environmental Health Centers—Important alert: Facts about Southwest Detroit projects currently under discussion. 2004 [Retrieved on August 08, 2009]. from <http://www.epa.gov/ncer/childrenscenters/southwestdetroit.html>
- Zakocs RC, Guckenburg S. What coalition factors foster community capacity? Lessons learned from the Fighting Back Initiative. *Health Education & Behavior* 2007;34(2):354–375. [PubMed: 16861592]

Table 1

Dimensions of community capacity relevant to environmental health action

Dimension	Definition
Leadership	Presence of experienced, skilled leaders willing to address environmental health issues
Participation	Extent to which broad cross section of citizens participate actively in addressing environmental health concerns
Skills	Level of relevant organizational, scientific, political, and information-seeking skills among range of participants
Resources	Financial, human, and social resources available for addressing environmental health concerns
Social and organizational networks	Horizontal and vertical linkages among participants and their organizations and other relevant local, regional, and national groups
Sense of community	Extent to which participants have shared identity related to community as a physical and social environment and a willingness to take action based on that identity
Understanding of community history	Awareness of previous efforts by a community to address related problems and understanding of how the community fares relative to others
Community power	Ability to act to make or resist change that affects the community's environment
Community values	Shared norms and standards related to environment, social justice, and democracy
Critical reflection	Ability to analyze successes and failures, to reflect on one's experience, and to assess the arguments and motivation of other stakeholders

Adapted from "Community Capacity for Environmental Health Promotion: Determinants and Implications for Practice," by Freudenberg 2004, *Health Education & Behavior*, 31, p. 4474. Copyright 2004 by Sage Publications Company

Table 2

Examples of dimensions of community capacity from the CONEH project

Dimension	Example
Leadership	Development of future leadership by involving and training youth in environmental justice
Participation	Increase in community members, organizations, and youth addressing environmental health concerns Participation of community members on Local Advisory Council for transportation project Presentations at City Council, community forums, etc Attendance at community meetings, hearings, etc
Skills	Enhancement of SC members' and staff's policy advocacy skills around environmental health Strengthening existing organizations' knowledge of environmental health
Resources	Providing staff to support policy advocacy-related activities Access to locally relevant research findings that were translated into lay language Connecting community-based organizations with university researchers who could be called on for future assistance
Social and organizational networks	Bringing environmental groups and community-based organizations together Linking community groups and the university
Sense of community	Bringing Eastside and Southwest Detroit together
Understanding of community history	Understanding the relationship between environmental health and political power
Community power	Successful resolution of an elementary school's environmental contamination issue Positive impact on environmental projects/policy being proposed in the Detroit area Limited success in stopping projects that affect the environmental health of the community (e.g., DIFT)
Community values	Differences among community members in emphasizing economic development over environmental health Differences in SC member organizations' willingness to take a political stance on key environmental issues
Critical reflection	Recognition that early CONEH strategies were not successful Recognition that economic arguments are often used to suppress arguments over environmental health threats and that economic development and environmental stewardship can co-exist Frustration that CONEH had not made more progress in policy change