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FULL-LENGTH ARTICLES

Using Networks to Engage Community Health Workers in Participatory Action Research in High-Poverty Rural Communities

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Previous research shows that health and social service networks can improve service and system coordination and increase capacity to respond to critical social determinants and health needs. This article describes strategies, methods and tools used to engage community health workers (CHWs) in the development and implementation of initiatives associated with the COVID-19 Response Network, a collaborative between academicians, regional clinical and social service administrators, practitioners, and regional community and faith-based organizations. Network initiatives included community-based participatory action (CBPT) research approaches to respond to social determinants and health needs in rural Missouri during the COVID-19 pandemic. Mixed methods were used to ascertain the impact of these approaches, including surveys and key informant interviews with Network members. Survey responses showed the network to be a venue where decision-making was democratic, CHW voices were valued, and network members trusted each other. Analysis revealed two themes: How the Network improved CHWs' capacity to respond to the COVID-19 pandemic ("Getting a seat at the table") and how trust is built through relational exchange processes ("They need to believe in you"). The results clarify practical approaches to participatory action research for bringing together and maximizing the contributions of a combination of CHWs, clinicians, and administrators in clinical and social services stakeholders in the community in leadership positions to improve health outcomes. Implications for academic researchers and academic institutions are discussed.

Introduction

Recent sociological studies have highlighted the role of "place" as a vital indicator of well-being and a better way to understand and measure community disadvantage (Wilson, 2012). While much of this research has examined "place" as a geographical construct, place also describes relationships between people within a certain community with different types and levels of power and resources. Interagency networks that include practitioners, administrators, and community health workers (CHWs) can help create places to maximize the synergies of these powers and their potential to reduce inequities.

Interagency Networks and Community-Based Participatory Action Research

Interagency networks provide a strategy to ensure relationships are horizontal simply by virtue of their structure (Rappaport, 2020). Networks thrive when there is a diverse group of stakeholders who can reduce information silos. Most networks are voluntary, and thus can't impose rules, procedures, and laws on other members. Rather, members are attracted to networks because leaders or "facilitators" act in response to their relationships with individuals and organizations, circumstances, and altruism (See Maynard-Moody & Musheno, 2000). According to Zucker et al. (1986), networks, including health and social service networks, often operate without funding and generally have no authority over the individual agencies and organizations that make up the network. Their currency is trust or a "set of expectations shared by all those involved in an exchange" that healthcare and social service providers will "perform in a competent way " (p. 54). Diverse, non-hierarchal structures are important for keeping these members engaged.

Network members are less amenable to following the lead of academics, so academics must learn to navigate this complex and entrepreneurial space (Romzek et al., 2014). Network members are interested in sharing power, which also means sharing how research is conceptualized, practiced, and disseminated. To keep community members and stakeholders engaged, they must see themselves as responsible agents in producing knowledge and improving practice. According to Paulo Freire in *Pedagogy of the Oppressed*, having these stakeholders reflect on health equities will essentially call for action. That action, in turn, becomes an object of critical reflection (See also Rappaport, 2020).

Community-based participatory action research (CBPR) is an ideal approach to work with interagency networks because it allows researchers to work collaboratively with stakeholder groups to establish group structures and processes, systems for reflecting on these structures, and methods to evaluate the impact of the group on their stated goals and objectives (Baum et al., 2006). Assessments of CBPR have often focused on academic-community relationships. However, CBPR requires not only vertical relationships between community leaders and academics but also horizontal relationships across stakeholder groups — which are often difficult to accomplish.

Building Networks in Disadvantaged Rural Communities

Previous research on rural communities has shown that creating networks enhances collaboration across health and social services and establishes informal and formal care coordination systems. Thus, networks can act as a stabilizing force because they provide governance otherwise not provided through the local, state, and federal government (Milward & Provan, 2003, 2000; Smith & Smyth, 1996). Previous work also highlights the benefits of CHW engagement in creating change in rural communities. CHWs are trusted and respected community members who advocate, encourage, and

promote positive health behaviors among community peers (Brownstein et al., 2005). CHWs can increase access to healthcare and serve as liaisons between healthcare providers and community members (Institute of Medicine Committee on Understanding and Eliminating Racial and Ethnic Disparities in Healthcare, 2003). CHWs have a large scope of practice, which includes facilitating social support, providing community education, improving access to and navigation of systems-of-care, improving preventative care and adherence to treatment recommendations, monitoring risk, and improving self-management and follow-up care.

Engaging CHWs in interagency networks can provide CHWs with opportunities to support one another and engage in resource and information sharing. It also can increase community member access to resources, improve knowledge and information dissemination between agencies and the community, improve CHW information processing capacity, and help ensure the sustainability of community-engaged projects (Alvidrez et al., 2019; Bryson et al., 2015; Shrestha et al., 2023; Witmer et al., 1995). Moreover, as low-wage frontline workers, CHWs are subject to the same structures of domination that systematically marginalize and oppress the communities they serve and they see firsthand the struggles of vulnerable populations as part of their job. They advocate for populations who are subject to structures of domination that systematically marginalize and oppress them. According to standpoint theory, this gives CHWs epistemological privilege (see Wylie et al., 2003). They will know different things or know some things better than those who are comparatively privileged in the network.

Thus, the purpose of the current study was to increase our understanding of: 1) The structure and function of academic, health, and social service agencies that include CHWs; and 2) How CHWs impact the achievement of networks' goals and objectives.

Method

Network Development

Using CBPR approaches, COVID-19 Network members participated in all stages of the research, including developing research questions, developing interview questions, identifying participants, and analyzing results. For this study, co-authors used mixed methods by soliciting network participant feedback on network development (needs assessment and program development), program implementation, assessment of impact and outcomes of network activities, and future directions (see Scher et al., 2023). Data collection started in 2021, one year after the network started.

The COVID-19 Response Network Development and Its Use of Participatory Action Research

Our work was initiated through an in-depth assessment of root organizational and structural barriers to accessing and utilizing health and social services in the Missouri Bootheel as part of a community-academic partnership (Shrestha et al., 2023). The assessment engaged CHWs across the region to collect information from community members and agency representatives. The key barriers to care identified were: lack of access to providers and quality care; inadequate coordination of care across systems/organizations; lack of trust in healthcare systems and providers; insufficient information and support to use services; lack of employment opportunities; lack of access to insurance; inadequate transportation options; and disrespectful treatment based on race and class.

CHWs and members of the community-academic partnerships (Ballard and Baker) facilitated conversations where the community members and agency representatives prioritized these barriers and developed strategies for change (Shrestha et al., 2023). A key strategy was establishing a clinical and social service network to strengthen linkages between community organizations. Another key strategy was to include agencies that employ CHWs to ensure bidirectional communication between providers and consumers of care. Community partners emphasized that the network would also need to focus on taking action to begin to dismantle the barriers to care rather than on providing specific services.

The COVID-19 Response Network (the Network) was born from these conversations, focusing on COVID-19 because of the timing coinciding with the onset of the pandemic. The Network serves communities in Southeast Missouri (SEMO), including what is referred to as the "Bootheel" and Ozark regions of Missouri. It is located close to the Mississippi Delta and was part of the area that remained in the Confederacy before the Civil War. Bootheel counties have been identified as high on the Deep Disadvantage Index (Edin et al., 2023) and by the USDA Economic Research Service as "persistently poor," which means that 20% or more of residents were at the poverty level from 1980–2020 (USDA, 2020). The area is like many other communities in the Cotton Belt, where the quest for cotton consumed land, capital, and labor, with capital generally coming from outside the area and labor through slavery and tenant farming (Edin et al., 2023). During the pandemic, the target counties had some of the highest rates of COVID-19 cases and deaths in Missouri, and vaccine rates were consistently lower than those in the rest of the state.

The Network was developed as part of Robert Wood Johnson's Interdisciplinary Research Leader program to use community participatory action research to increase health equity in March 2020 (Baker et al., 2023). Academic partners and a local community organization partner specializing in emergency management (Ballard) facilitated Zoom meetings where members shared information and resources and responded collectively to

the COVID-19 pandemic in the community. More than 90 community stakeholders were invited to meetings with about 35 community organizations participating and 75 individual stakeholders, including CEOs, administrators, government representatives, and CHWs across target counties. These stakeholders included community and faith-based organizations, social service providers, family support providers, local health departments, community health centers, pharmacists, economic development, hospitals, workforce development, behavioral health providers, and educators. Voluntary membership was maintained through a roster and all individuals who agreed to be part of the network provided contact information for the roster. Each week, facilitators provided information about COVID-19 cases, deaths, and vaccination rates (once they became available) by race/ethnicity and county in ways that enabled Network members to compare their counties to other regional counties, the state, and the U.S. (weekly participation ranged from 15–40 individuals). The network had a flexible agenda, allowing members to voice critical needs they and/or their communities had identified. Facilitators also responded to community needs by providing or creating community-specific educational materials, PPE, and other health-related social needs (e.g., increasing access to food through mobile food banks).

Most active participants were CHWs. CHWs worked closely with academic partners to establish reflective, cycle–defining questions and collect and analyze data that could inform the next steps (see Scher et al., 2023). Given the urgency of the COVID-19 pandemic, academic and community partners decided that meetings needed to be held weekly, and during the first few weeks, Network members agreed on a list of partnership principles and made strategic decisions about goals. Afterward, academics facilitated Network meetings using approaches to reduce power differentials horizontally (equal status between network members) and vertically (unequal status between network members) within and between communities and academic institutions. This was seen as crucial as some agencies and stakeholders were seen as having more power than others (Scher et al., 2023). These approaches ensured that all partners, regardless of agency or role, were encouraged to engage in discussions and decision-making. Community partners often defined the issues of importance to them or their questions, and academic and community partners worked collaboratively to identify information and resources that Network partners could share with the community.

It was common for CHWs and other local stakeholders to think that health promotion resources — often developed by the CDC and other national organizations — were inappropriate for their community. When this happened, stakeholders worked with academic partners to develop new health information media and materials for dissemination that were culturally and socially appropriate within target counties. The Network also collaborated to host mobile food drives that distributed voting information and personal

protective equipment, build transportation programs, partner with pharmacies to hold vaccination drives at churches and community events, and engage in door-to-door community outreach.

Assessment of Network Structure and Function Survey

A structured survey was created during the first stage of data collection. Surveys were developed based on previous work assessing health and equity-related collaborations. They included measures assessing county of residence, county of employment, employment sector, organizational experience and capacity, organizational experiences in working with health equity, participation in the network, network capacities, structures, functions, and outcomes (Belone et al., 2016; Contractor et al., 2006). All response items were reviewed by the network over the course of 3 meetings and are listed in Supplementary Table 1. Network participants were given links to the survey during network meetings, through network invites, and the COVID-19 social media account. Surveys were administered through Qualtrics,

Survey Measures

Qualities of current organization. Respondents were asked whether their agency/organization had a history of organizing events in the community, advocating for social and health equality, and influencing decisions in the Bootheel.

Characteristics of the Network and effect on COVID-19. Respondents were asked, "To what extent does the Network have the following characteristics needed to combat COVID-19 and the social determinants?" These characteristics included connections with relevant stakeholders, the ability to listen and respond to the community's needs, and facilitation skills, among others.

Decision making and power. To better understand decision making and power within the Network, respondents were asked, "How much have members been involved in the decision-making process in this Network?" They were also asked about their level of agreement with the following statements: 1) Suggestions I make within this Network are seriously considered; 2) I have influence over decisions this Network makes; 3) Our Network reflects on issues of power and/or privilege. These questions are reflected in Supplementary Table 1.

Quality of facilitation. To better understand the quality of facilitation by university leaders and community lead partners, respondents were asked how much they agreed with the following statements about whether facilitators: 1) Encouraged active participation of all partners in decision making; 2) Communicated the goals of the Network; 3) Resolved conflict among Network members; 4) Fostered respect between Network members; and 5) Helped Network members be creative and look at things differently.

Use of resources. Respondents were asked how well the Network used member's in-kind resources and member's time.

Trust. Respondents were asked about the level of trust between Network members using the following statements: 1) I trust the decisions others make about issues that are important in our Network; 2) I can rely on people who work with this Network; 3) People in this Network have a lot of confidence in one another; and 4) Our community trusts our Network and the work it is doing.

Effect on programs and services. Respondents were asked to what extent the Network produced any of the following outcomes: better coordination between agencies, research/facilitators, and community groups, and changes in the nature of debates about important health issues in the community, among others. (See Supplemental Table 1 for more.)

Commitment to sustaining the work. Respondents were asked about their willingness to continue with the Network even when funding waned. Statements included: I am committed to sustaining the Network even with little or no funding, and our Network carefully evaluates funding opportunities to make sure they meet the community's needs.

Priorities for the Network other than COVID-19. Respondents were asked about future priorities for the COVID-19 Network. Repsondents reviewed a list of 10 different priorities identified during a previous root cause analysis study (see Shrestha et al., 2023, and Table 1) and were asked to pick four top priorities.

Overall satisfaction with the Network. Respondents were asked to rate their level of satisfaction according to the following statements: The network achieved the goals of the project and they had a positive experience partnering with the Network.

Results

Network Quality and Efficacy in Combating COVID-19

As shown in Table 1, about 33% of the Network members lived and worked in Bootheel counties, while the rest worked in surrounding counties. Respondents were 78.1% white and 9.4% male, with an average length of involvement in the Network of 13.1 ± 7.3 months. About 34.2% of respondents were CHWs, iwth the rest being health or social service administrators, behavioral health providers, social workers, nurses, or educators.

Supplemental Table 1 shows univariate and bivariate tests of the quality and efficacy of the Network as well as differences between CHW perspectives and those of other types of health and social service providers.

Regarding COVID-19 responses, 70–80% of network members rated Network capacity to respond to the pandemic as "great" or "very great," with slightly lower scores for the ability to bring people together for meetings, connections to relevant stakeholders, and response to needs and problems of all.

Table 1. Characteristics and qualities of the Covid 19 Network as Reported by Community Health Workers and Other Members (n=44)

Characteristic	All (n=44)	CHW (n=15)	Other (n=29)
Bootheel work, %	14 (33.3)	10 (71.4)	18 (64.3)
Bootheel Live, %	14 (33.3)	4 (28.6)	10 (35.7)
Race, %*			
Black or African American	5 (15.6)	5 (38.5)	0 (0.0)
Hispanic or Latino (White)	2 (6.3)	1 (7.7)	1 (5.3)
White	25 (78.1)	7 (53.9)	18 (94.7)
Female, %	29 (90.6)	17 (89.5)	12 (92.3)
Length of Involvement (months)	13.1 (7.3)	15.8 (5.3)	11.4 (1.7)
Included in qualitative interview (Yes), %	13 (31.7)	4 (30.8)	9 (69.2)
Number of Weekly Meetings, %*			
0-5	15 (36.6)	1 (7.1)	14 (51.9)
6-10	8 (19.5)	1 (7.1)	7 (25.9)
More than 10	18 (43.9)	12 (85.7)	6 (22.2)
Background, %*			
Administration	9 (22.0)	0 (0.0)	10 (100.0)
Behavioral Health	1 (2.4)	0 (0.0)	2 (100.0)
Community & Health Education/CHW	14 (34.2)	15 (100.0)	0 (0.0)
Education	2 (4.9)	0 (0.0)	3 (100.0)
Nursing	8 (19.5)	0 (0.0)	9 (100.0)
Other	7 (17.1)	0 (0.0)	1 (100.0)
Populations agency services, %			
Children/youth	3 (9.4)	0 (0.0)	3 (100.0)
Low income individuals	12 (37.5)	3 (25.0)	9 (75.0)
Racial/ethnic minority groups	2 (6.3)	2 (100.0)	0 (0.0)
Senior citizens/aged	1 (3.1)	1 (100.0)	0 (0.0)
Veterans	1 (3.1)	1 (100.0)	0 (0.0)
Other (all of the above or multiple categories)	13 (40.6)	6 (46.2)	7 (53.9)
Future Priorities (In top 4) (%)			
Increased Information on Services	12 (35.3)	4 (28.6)	8 (40.0)
Supports for using Services	13 (38.2)	10 (50.0)	3 (21.4)
Affordability Healthcare	14 (41.2)	6 (42.9)	8 (40.0)
Access to Transportation	19 (55.9)	9 (64.3)	10 (50.0)
Social Service Provision	15 (44.1)	4 (28.6)	11 (55.0)
Quality of Care	6 (17.7)	3 (21.4)	3 (15.0)
Improve SDOH	24 (70.6)	11 (78.6)	13 (65.0)
Increase Equity*	12 (35.3)	8 (57.1)	4 (20.0)
Food Security	9 (26.5)	4 (28.6)	5 (25.0)
Broadband Access	12 (35.3)	4 (28.6)	8 (40.0)

Note: Results are means and standard deviations unless specifically listed as percentages. Bootheel residence or work include only Dunklin, New Madrid and Pemiscott. CHW=Community Health Worker, *p<.05.

Regarding decision making, About 91% of members agreed that they were fairly to completely involved in Network decision-making and 82% slightly/completely agreed that suggestions they make are seriously considered.

Regarding teamwork within the Network, 55% slightly/completely agreed that their involvement influences the Network to be more responsive to the community; 68% slightly/completely agreed everyone participates in meetings; 82% slightly/completely agreed that when conflict occurs, Network members work together to problem solve; and 73% slightly/completely agreed that the Network reflects on issues of power/privilege within the Network.

Trust levels were also high, with 91% of participants slightly/completely trusting decisions made about issues that are important to the Network, 94% slightly/completely agreeing they were able to rely on people in the Network, and about 76% slightly/completely agreeing that the community trusts the Network and the work it is doing.

In terms of efficacy, approximately half of the respondents stated that to a great/complete extent, the Network impacted the nature of the debate (53.1%), provided useful information for practice and policy (51.5%), and ensured research was better linked to the community needs (54.6%). The Network had less impact on policy (21.9% great/complete extent) and reinforcement of cultural identity and pride (37.5% great/complete extent). Close to half of participants thought that the Network provided better coordination of health and social services (45.4%) and impacted COVID-19 outcomes (43.8%).

Overall, respondents (81.8%) were satisfied with the Network and agreed that they would recommend the Network to others (87.1%). Interest in health equity increased after involvement with the Network (from 50% to 71.9% being very interested), and respondents, on average, agreed that the Network increased their knowledge of health equity (90.6%). Respondents mostly agreed that they were committed to sustaining the Network (93.7%), even with no or little funding. When asked about future foci for the Network, the respondents prioritized projects that would improve social determinants of health, increase access to transportation, and ensure affordable healthcare (See Table 1). No differences were found between CHWs and other Network members, except CHWs were less likely to be White ($X^2(1)=7.55$, $p<.006$), were more interested in health equity ($X^2(1)=4.98$, $p<.03$) as a focus for the Network and more likely to agree that the Network increased trust in the community ($X^2(1)=7.78$, $p<.02$).

Semi-structured interviews

In the second stage of data collection, a semi-structured survey was used to enhance our understanding of results from the first stage. Members reviewed survey questions and could suggest additional questions after the results of survey questions were presented to them. These semi-structured interviews were piloted, revised, and then conducted with a stratified convenience sample of key members of the Network: 1) active members; 2) occasional members who have strategic positions with health and social service providers in target counties; and 3) members who were at one point very active but were now no longer active. Members were recruited through an email invitation. Grounded theory-focused analysis was utilized to analyze qualitative semi-structured interview transcripts (Strauss & Corbin, 1994). The results of the analysis were presented to Network members, and Network members were asked to provide additional feedback about these results. Of the 14 interviews, notes, and documents analyzed, 105 emergent categories were created.

We collected additional qualitative data to better understand the respondents' perceived benefits and reasons for joining the Network and differences in trust. We identified preliminary themes and reviewed these themes with the Network. After reviewing feedback, we revised the two main themes identified after data analysis. Themes show how and why CHWs

and other health/social service providers joined the Network, what they got out of Network involvement, and how the Network facilitated program development and outreach into the community using a participatory research action approach. The themes are reported in the following paragraphs.

The first theme, "Getting a Seat at the Table," focuses on Network engagement, the roles of Network members, and how the Network responded to COVID-19. The second theme, "They need to believe in you," shows the role of trust between the Network members, CHWs, and the community.

Getting a Seat at the Table: How Academic Organizations Worked with CHWs to Break Down Siloes and Respond to COVID-19

Respondents reflected on the current culture and resource shortages in Bootheel/SEMO, which led many to move outside the area. Siloes functioned in these communities to protect the few available resources. One health service administrative respondent (age 34–55) said this about large parts of the Bootheel/SEMO area:

> There are some strong silos in place. They are individuals who have money and resources and who have partnerships for their land. They aren't using the land to grow produce and to put back into the community. They are used...[pause] like there are a lot of partnerships with Monsanto with those who are well-to-do, and they are the elite, and so honestly, for lack of a better word, and I'm being honest, it reminded me of a plantation. Which, the feeling to see it, it was just it was such a bad feeling, to witness and going into that area, trying to set up things for food and security and having doors closed in my face — and all I'm trying to do is feed the community, you know — *their* community is how I thought — but people didn't want that.

A CHW (age 22–34) in the area agreed that silos are a major barrier but that the Network reduced these barriers:

> I feel like the Network felt, which I agree with, that it'd be better to have different minds together, where we can all guide each other, than you try to figure it out on your own and I try to figure it out on my own, and this other person tries to figure it out on their own.

By the time the Network was in place, the pandemic started, and members confronted worsening poverty and food scarcity, fears about job and employment security, and significant national and local resistance to standard public health protocols. A CHW (age 34–55) said:

> One thing about this, I don't know if it's the Network in general, COVID, it is probably the toughest thing we have fought. Probably will be so in our lifetime. It's the most challenging thing we ever had to deal with because it is not just new — it has also divided the country. It has become so controversial it can tear you — it can tear a group apart.

In managing controversy, there was a need for increased information exchange to respond to existing messaging on COVID-19 in the community. As another CHW (age 34–55) explains, many frontline health and public workers were often unsure what to say because they didn't have the resources to navigate the information available:

> With me, being a navigator, I am the bridge to so many families, to resources. So, when we were working with COVID, nobody knew exactly what it was about. There was so much misinformation and so many different voices coming in and out that people often turn to a navigator like me and we're like, 'What do I do for this, where do I go for that, where do I get tested, when do I need to get tested?' Things like that, and we were like, 'We don't know.' So, we thought the Network would be a great place to start.

The Network was valuable during this time because CHWs saw it as a venue for exchanging resources with academics and leaders in their community. The exchange of resources was improved through clear delineation of roles within the Network. As reflected by interviews, the Network had very clear roles for CHWs and other providers. CHWs had the role of being the community's voice. There were also clear roles for the academic, clinical, and administrative partners. These specific roles, along with the use of shared decision-making when it came to community problems, community concerns, and community actions, ensured that the Network could develop programs and then properly implement them or disseminate information in the community. According to one CHW (age 35–55):

> XXX knew the Bootheel and XXX knew the university component, the research, Dr. XXX can bring the [clinical] part, so we can have the vaccines. Then you kind of bring like someone like myself, [a CHW], and like there is XX and XX who have that outreach expertise and it just all put together, like a gumball.

By having specific roles but assigning equal power and leverage to each, the Network ensured that the correct information guided action and that people who had trust in the community were delivering information and services. As this CHW explains, when the roles were clear, and individuals felt respected within those roles, they were much more effective:

> For them to get on and just be able to tell what's working good and what's not. So that way — they feel like they're — it connects them to us. So that way — they have that bigger support. So that way — they understand that they are in a bigger thing, instead of just the one-on-one.

As the passage shows (CHW, age 35–55), the Network meetings also helped CHWs understand their essential role as change makers and how they had the support of larger communities and stakeholders, and their role as change makers. The CHWs could consistently exchange information and resources with each other across agencies and receive emotional support, which was previously impossible.

The increased capacity and support from academics, community leaders, and peers helped CHWs deal with community resistance and pilot approaches that could work in the Bootheel. One CHW spoke about their first pilot vaccination clinic:

> The first actual pop-up vaccination clinic came from a little bit of me and some other folks on the Network and [our medical partner] – we always like, 'Okay, what can we do?' This is before the vaccine was really available everywhere. Okay, 'How can we do this?' Let's find a place to do this and we did one. In the ...[unclear]...and it was in Dunklin County, it was an old church, and we did like five shots. And we were so happy about it because it was like four guys and one young lady, and I don't think anyone knows where they would get the vaccine if we didn't bring it to them.

As shown in the above statement (CHW age 35–55), CHWs found that when they started small and showed communities that doing these events was possible, resistance from community members was not as bad as previously feared. This also created a pilot that the Network partners could use to request funds and ensure health services were in communities that needed them most.

Community interactions remained challenging throughout the pandemic, but the Network was invaluable for CHWs because it allowed them to think with one another about how best to respond. One CHW (age 35–55) said,

> My daughter told someone the other day, "I like your hat," it was a Trump hat, and said, "I haven't saw one like that," and so brought up the conversation, and she just said, "Have you had

> your vaccination, I don't see you with a mask." "I ain't wearing that mask and no, I didn't get a vaccination." And she said "You do know that he got super sick from COVID. I think he almost died. He got his vaccination, and then he made sure his kids got it, and so he just got his booster, I believe."

As reflected in the statement above, CHWs and Network members found through trial and error and discussing strategies with one another that it was more important to get the conversation started and stay civil so that follow-up was possible. Community members also did not have to feel like they were losing face by eventually changing their mind. The capacity provided by academics and clinical leaders also ensured that there were clinics available if community members changed their mind.

They Need to Believe in You: Trust and Exchange during a Time of Crisis

During the pandemic's beginning, there was significant confusion about how to prevent COVID-19. The mayor of a small town in the Bootheel (age 55+) explained the confusion he had before joining the Network:

> I think the CDC — and I keep politics out of it — but I think they were so inconsistent. But, at the end of the day, what's your approach in this? It's brand new, we've never experienced a pandemic like this, so we're guessing. But they ought to say that too. 'Here's what we think, not what we know. We're gonna try. Maybe it works, maybe it doesn't.'

The respondent noted that within this context, the Network was critical and that academic partners could provide up-to-date, easy-to-understand information on the pandemic each week, which CHWs, practitioners, and administrators could bring back to their community. They were also available for comments and questions. This created a consistent form of dialogue between three different types of stakeholders (academic, agency, and community), which was different than the CDC approach of "expert" announcements leveraged on institutional trust and public relations focused on protecting "institutional" legitimacy. This respondent and others also found academic partners to be a resource to which they had access. They felt that academic involvement encouraged them to be part of the Network and continue to participate.

Academic involvement also facilitated partnership building to gain funding among smaller providers rather than competition, as this CHW (age 55+) explains:

> We are a big political landscape, and you know many people are fighting for the same funds, especially chronic diseases. We have, you know, a lot of... We have health departments, we have our home visiting services, we have a lot of people fighting for

> those funds, and that is where I have seen people just, you know, build those walls and silo in, and I think transparency... in every work that I've done... just communication in general, let's talk about it. Let's see. Okay, we are both striving for the same funds. How can we join forces and have an even bigger impact with the same funds and move the needle, you know? So, really kind of sitting back and, you know, getting the Network members, or whatever you want to call us, to really stay engaged and trust. That's a big thing down in the Bootheel — building that trust and sustaining it.

The above statement demonstrates that many CHWs feel funding traditionally caused division and reduced trust among people in the Bootheel/SEMO. The statement also clarifies the importance of trust and how to sustain trust among Bootheel/SEMO community members. According to Network members, this trust was often not present in the community, and members appreciated that they could build this rapport with one another to be more effective and reach outside their small community to larger institutions, which could help alleviate resource issues. They were aware that Network engagement and the resulting exchanges in and of itself led to trust, which ensured the Network's success.

Regarding COVID-19 and other health outcomes, Network members, especially CHWs, recognized that there was often a messaging problem when engaging the public. There were also significantly low levels of institutional trust (as reflected by the statement above by the town mayor), so building strong "relational" trust was necessary first to engage in conversations with residents. A CHW (age 35–55) explains how many of the conversations about healthcare and health occur in his community:

> You may have fewer African Americans for so many different reasons because we know this history of being discriminated against when it comes to medical treatment. But we also lose a lot of, like white brothers and sisters, for the same reason — that there is something about here (the specific healthcare facility), 'I don't trust this'...and if you ask, 'Why don't you trust this place?' We usually get responses like, 'Well, one time I went, someone said something to me, and I didn't like it.' We all have been to places and folks say something you personally don't like. But if this is what I have, we have to make sure that we're getting the quality care we deserve. We need to hold them accountable, too, because it's our health. So, 'I'm not gonna go to the health department and get my diabetes checked out,' 'I'm not gonna go to my doctor,' but at the end of the day, you're the one who ends up getting your left leg amputated.

This CHW had a strong relationship and worked in this community over long periods of time. As shown in the statement, many conversations involve using relational trust to fill the void left by the lack of institutional trust. Relational trust is built repeated exchanges between trustor and trustee occurring over long periods (Zucker, 1986, p. 54). This is a process type of trust because it relies on past exchanges and expectations. It also takes a lot of time and resources.

However, having multiple, positive, repeated exchanges with every person in a community was impossible. According to CHWs, to spread their capacity more effectively, many put significant resources into building relationships with leaders. This CHW (age 35-55) reports on why leadership buy-in was so necessary:

> I didn't actually set it up; someone else did, and I was asked to respond. There wasn't a lot of canvassing done, and the church where we were working was actually against getting vaccinated. The pastor was, too. So, when you have a situation like that, normally, members will follow. It's very unlikely that people in that situation are going to give you a chance or even try to listen — they're going to ignore basically anything you say. Now, I have set up a clinic for later on this month, and the pastor of this church is already on board. He's going to actually assist us with doing the outreach and education for the community. So, leadership played a role in the trust that we get from the community.

This CHW and others went on to explain that the *leaders* or pastors in this situation have already gained trust in the community through processes of exchange occurring over long periods — in other words, they built significant relational trust. The shortcut to retaining relational trust is getting these leaders' trust. However, CHWs often cannot just approach leaders and expect leaders just to do what they say. They must build trust among leaders, and they do this by responding to leaders' *own* resource dependency. That is, leaders have organizations, projects, and other types of structures that they need to ensure will survive — so they need to acquire and maintain essential resources to manage environmental demands. This means they are reliant on volunteers and reciprocity, and CHWs (age 35–55) often take this role:

> You need buy-in from the leaders, but you also... they need to believe in you. They need to know when they call, and they ask you to do something that you're gonna be there for them.

As this statement reflects, and as this CHW goes on to explain — the role of the CHW is often to build trust by using commitment and reciprocity with community leaders. This could also mean that the CHW will come

after hours, such as on a Sunday, to an event where the leader needs help. The CHW must also show that they are an available and reliable source of support, or at the very least, be open to doing so.

Discussion

This study describes how CBPR approaches can facilitate the development of health and social service networks and engage CHWs in these processes. Our work highlights the importance of including CHWs and other frontline health and social service workers in research and action steps to facilitate information distribution and trust building. CHWs were instrumental in building health and social service networks because they ensured that partnerships were in place and developed new opportunities for service expansion. Furthermore, this study shows the challenges of communicating public health information in high-poverty, rural counties during public health emergencies such as COVID-19.

The first theme focused on what motivated CHWs to engage in a community/academic network and showed that CHWs welcomed an opportunity to reduce siloes The competition between different agencies over scarce resources led to negative relationships and a sense of helplessness, making it difficult for CHWs to be effective. The first step to creating the Network involved a community assessment with academics. The community assessment allowed academics to work with CHWs to build further relationships and highlighted a need for better care coordination. For CHWs to improve care coordination, they needed to engage across different hierarchies and have better access to information. Still, no venues existed for such interactions in the Bootheel/SEMO. A Network that focused on engaging health and social service providers across the region allowed CHWs to discuss day-to-day challenges with each other, academic partners, and leaders in health and social service organizations. The consistency of weekly meetings was key because news, information, and the response to COVID-19 kept changing in communities. CHWs needed to be able to present evolving issues and work with partners to determine how to get resources and respond appropriately. Their initiatives and attempts to respond were often small, given the resistance from the community, and their success was contingent on the support of larger institutions, like universities and health organizations. Academics increased CHW and local capacity by understanding funding mechanisms, public health epidemiology skills, clinical sciences and health promotion, and access to information.

This study also showed how the fragmentation of health and social services affects trust within low-income rural communities, especially relational and institutional trust. Networks build trust by ensuring that systems and organizations are accountable and prioritizing community residents' health and social welfare (Mechanic & Schlesinger, 1996). In the Bootheel community, residents often felt ignored and disrespected by institutions. This presented a challenge to the Network. Academic facilitators didn't have authority over other agencies. Because academics were not part of the

community, they had to rely on stakeholders, including CHWs, who had limited time, to volunteer as part of the Network. This took substantial time and included academic partners providing resources for community assessments, bringing in experts to talk to the Network about issues that were critical to them, attaining funding to establish the Network, and obtaining money to implement action research strategies.

Academics in this Network needed trust from stakeholders to be successful. One way this was accomplished was through institutional trust — i.e., trust in the legitimacy of public health, science, and medicine as institutions. Members representing health and social service organizations, whether they were CEOs, administrators, clinical practitioners, or CHWs, also used institutional trust as currency when working with one another. They rely on the legitimacy of their institutions (whether they are government institutions, healthcare institutions, etc.) and the reputations of those institutions in their communities (Mick & Wyttenbach, 2003) to show that they have the competence and resources to make an impact. They also rely on relational trust, and academic partners needed to do the same as they built the network.

According to Zucker (1986), changing social conditions such as economic instability, lack of labor rights, and the Great Depression lead to decreased relational trust because they affect the capacity to be involved in exchange relationships (see also Haack et al., 2021; Zucker, 1986). This void was filled by institutional trust, which led to many of the New Deal programs and increased government involvement in health and social services. However, this changed in the 1980s, when there was a significant privatization of government and what has been referred to as the "hollow state" (Fording et al., 2007; Milward & Provan, 2000). Community members often commented on this hollow state and their disappointment in government and healthcare organizations. This also spilled over into relations and relational trust since establishing repeated exchanges with one another took time and resources, which were often not available. This made it more difficult for CHWs to intervene and reduce health disparities. CHWs often lack leverage and rely on some type of resource exchange — whether it is time, existing relational trust, information, or funding to ensure buy-in and support.

Implications regarding resources and trust are large, and academic researchers negotiate with their universities to ensure they get the infrastructure they need to successfully engage with vulnerable communities. It also means that universities and academics must consider ways to increase community resources rather than finding more ways to extract them. High-poverty communities, like Southeast Missouri (SEMO), are both resource-poor and exchange-poor. CHWs and other outreach workers in these communities need more community resources to improve their capacity to engage in successful exchanges. These exchanges build dependence and rapport, which leads to increased trust.

This study was one of the first to show how rural communities and CHWs responded to the COVID-19 pandemic through community-academic health and social service networks and CBPR. However, it is limited because of its small sample size and focus on one geographic area. Respondents were also disproportionately white, and only minimal racial and ethnic categories were added due to the small sample size. Future studies should evaluate rural networks across different resource-poor communities to determine whether similar dynamics related to trust and network capacity apply.

Conflicts of Interest

None

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