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Work in Progress and Lessons Learned

Integrating Mixed Methods Social Network Analysis to Assess Community Academic Partnerships

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ABSTRACT

Background: Community academic partnerships (CAPs) in public health are increasingly utilized to integrate community voice into decision-making processes of health-related interventions, programs, and practice. However, community partners' collaboration experiences remain understated in the literature. Thus, there is a need to further advance methodological approaches that examine the effectiveness of CAPs, while also highlighting community voice to, ultimately, improve public health outcomes.

Objectives: (1) To demonstrate how a practical approach to mixed methods social network analysis (MMSNA) can highlight power dynamics in community health partnerships and use MMSNA data to build relationships across stakeholders for systems change efforts

Methods: MMSNA was used to examine a CAP focused on public health equity in a Midwest region. The project applied a sequential mixed methods design (QUAN→ QUAL) with a network survey and individual semi-structured interviews. Both data strands served the function of expansion, where quantitative data identified *what* relationships existed in the network, level of activity, and factors for motivations, providing breadth of collaboration. Qualitative data further elaborated on *how* partners perceived these experiences, providing depth and contextualizing quantitative results.

Conclusions: Systems level approaches must be applied to capture broader contexts (e.g., community, interpersonal, and individual) surrounding community health partnerships. The use of MMSNA maximizes benefits from a systems methodology—SNA—with qualitative interviews that allow for the critical assessment of network structure and community centered

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perspectives. Community health partnerships are encouraged to utilize this approach in order to deliver more sustainable public health efforts centered on the community that is directly impacted.

KEYWORDS: community academic partnerships, Public Health, mixed methods, social network analysis, community perspectives, Community health partnerships

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Introduction

The public health community often uses interorganizational collaborations to tackle complex public health challenges [1,2]. One such form of collaborations is community-academic partnerships (CAPS). In these relationships, academic and community partners work across their respective organizational boundaries toward a shared goal, whereby each contributes their specific expertise [3–5]. CAPs integrate community voice into decision-making processes of interventions, programs, practices, and other health-related efforts [6]. By centering community perspectives, CAPs can promote and sustain public health interventions within community-based settings generally, and for marginalized communities, in particular [7–9]. As CAPS grow in popularity, there is limited research on their effectiveness or best practices for measuring said effectiveness [3,10–12]. Further, there is limited understanding of community partners' CAP experiences [11,13]. Thus, there is a need to further advance methodological approaches that examine the effectiveness of CAPs, while also underscoring community voice to, ultimately, improve public health outcomes [14–16]. Among approaches, mixed methods social network analysis (MMSNA) is a particularly useful one; however, often viewed as inaccessible and underutilized by community practitioners [15,17–20]. MMSNA refers to a mixed methods approach utilizing social network analysis (SNA) in tandem with qualitative approaches [21–23]. While not a fully unique approach, this paper aims to build rationale for using MMSNA in practice with community health partnerships. This paper shows how MMSNA can highlight power dynamics embedded in partnerships, elicit community perspectives, and provide practical insights that can be used to build relationships for improved collaboration efforts.

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SNA and CAPs

Few studies have used SNA to assess the impact of CAPs in public health [17,18,24,25]. However, SNA—a systems science methodology—is a promising tool that can assess community health partnerships across diverse settings, services, and populations [15,22,26,27]. SNA emphasizes how relationships influence behavior, beliefs, and outcomes across socioecological levels, incorporating the interplay of contexts in complex systems [28–31]. SNA captures the structural aspects of partnership dynamics that can identify network-level outcomes and partner characteristics affiliated with these outcomes[32–34]. Many findings related to network structure are relevant for goals in public health practice [(20)]. For instance, details can inform decisions about resource distribution and further explain underlying processes in access to resources by identifying where power or influence lies within these networks [35,36]. One can also evaluate the extent to which partners work across their respective boundaries or if an isolated group collaboratively works together apart from others within the network [15,21,22,35,37]. Further, SNA can illustrate these relationships through visual sociograms—a central tenet of SNA techniques [31,38]. This allows stakeholders to visually examine relationships in community health partnerships, as well as any patterns in relationships over time[39].

Power in mixing methods

The complexities of public health challenges require an in-depth perspective to better understand their processes and outcomes [40]. Mixed methods (MM) are increasingly preferred approaches in examining public health interventions as they counterbalance the limitations of quantitative and qualitative data [40–43]. In quantitative methods, such as SNA, data primarily focuses on the breadth of outcomes and a ‘snapshot’ relationship to a behavior or infrastructure. Qualitative methods operate differently as they provide depth to the processes by underlining

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experiences and perspectives to public health efforts [40,44]. By including qualitative approaches, such as interviews, the collision of a community's culture and Westernized approaches in research can be exposed, carrying implications for the distribution of power in community health partnerships. Additionally, integrating participatory dialogue from community partners can promote social validity and trustworthiness of data collected with SNA [45,46]. Social validity is necessary to ensure relevance and meaning of findings. Thus, in mixing methods, community partners can provide feedback on the social significance and acceptability of public health collaborations, such as a CAP [45,46]. MM can further tailor or inform collaboration strategies to grapple divergent perspectives, particularly in collaborations with marginalized communities [45].

Using MMSNA to minimize gaps to "community" in CAPs

Of note, "community" in CAPs transposes power dynamics, shifting from academia to other "lifeworld perspectives, values, and priorities" [47(p15),48]. To date, there is limited understanding of experiences among public health *community* stakeholders in CAPs, their motivations for joining and continuing to participate in CAPs, and their perception on CAP success [11,13,49,50]. However, community partners are uniquely positioned to possess a knowledge and expertise that is critical to develop successful public health efforts. These gaps in understanding community partners' perceptions can perpetuate issues typically found among community health partnerships related to mistrust with academic institutions and power imbalances. That is, many marginalized communities carry tremendous mistrust or fear academic institutions due to the history of exploitation from research [7,11,45,51], causing hesitations to engage. Further, entering a community or making decisions without their input can present problematic power dynamics between partners.

These issues highlight the need to understand who is involved in a collaboration, the extent of that involvement, their background and intended areas of contribution, and whether there are other partners that need to be included at the table to improve collaborations. Furthermore, there is a need to better understand determinants to the collaboration process that are grounded on community partners' perspectives to overcome challenges in power dynamics among academic institutions and community agencies. It is also critical to acknowledge the perspectives of community partners both on the process of CAPs and on their motivations for participating in CAPs to establish clear guidelines on how to appropriately collaborate with one another and in the community.

The value of MMSNA in this context addresses issues related to mistrust by emphasizing what the *community* needs and recommends for improved CAP efforts. To that end, MMSNA can broaden understanding of the collaboration process, prioritizing quantitative and qualitative strands of partnership dynamics. On one hand, SNA reveals structural processes underlying the collaboration network of a CAP. Integrating interviews to elicit the perspectives of partners' experiences with these collaborations then provides depth to understand the *how* and *why* of partnership dynamics, as well as recommendations to improve collaboration. Both provide practical insights into community-centered experiences in community health partnerships. The next section demonstrates an application of MMSNA to highlight its practicality and potential use as a data driven tool contextualized with experiences of community stakeholders in community health partnerships.

Methods

Description of the partnership. To protect confidentiality agreed upon in our relationship with the CAP, names have been pseudonymized for the demonstration. Initiated in

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2016, the CAP was affiliated with a broader NIMH-funded research center designed to minimize health inequities and promote health equity among underserved ethnic/racial minorities within Flint in Genesee County. Flint is comprised of residents nearly 42% below the nation's poverty rate with more than half of residents identified as ethnic minorities [52]. This community has faced dramatic declines in local government capacity and policy, prioritizing the role of CBOs in taking on more responsibilities to face local crises and health inequities [53]. With public health researchers, practitioners, and community members at the frontline, the CAP consisted of a community-driven collaboration network designed to offer collaboration opportunities between CBOs and universities by coordinating activities between local and regional partnering agencies. The goals of the CAP aimed to build trust among CBOs and academic institutions, as well as minimize duplication of efforts, and to mobilize and leverage resources toward health equity solutions. The CAP included voluntary engagement from a diverse interorganizational network of 27 community agencies representing partners, with both formal and informal elements to meet its goals. Partnering agencies were in health-related sectors focused on health policy, universities engaged in health service research, and non-profit sectors leading advocacy efforts with key representatives comprised of community members, academic staff, and policymakers at the local, state, and national level. All partnering agencies were viewed as reputable leaders in health equity efforts with existing ties to the community prior to the CAP's establishment in 2016.

The CAP's leadership structure primarily functioned by principles of community-based participatory principles (CBPR) with three community representatives as co-PIs, one academic PI, and one academic co-PI as core leaders. Decision-making processes with broader partners were informal with intentionally behind its community-driven design. Community partners provided their expertise, insight on community needs, and considerations for any CAP efforts.

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Academic partners then acted as a resource to build out identified community needs rather than making any ultimate decisions.

Applying MMSNA in practice. Before initiating the project, we first needed to obtain buy-in from the community core leaders. Of note, we were able to obtain buy-in more successfully because the project aligned with the overarching purpose and goals of the CAP and was viewed as useful to inform and direct its efforts to better engage partnerships between community and academic institutions. Once the project was approved, additional approval was obtained from the Michigan State University (MSU) Institutional Review Board (IRB) (#CR00001249). For this demonstration, MMSNA was applied in a case study of one CAP using a sequential MM design (QUAN→ QUAL). Sequential explanatory MMR was considered the best approach to examine CAPs through the use of qualitative findings to further interpret quantitative results, thereby increasing comprehensiveness and understanding of CAP processes with breadth and depth of both underlying and surrounding contexts [54]. The quantitative phase collected data with a network survey using the Program to Analyze, Record, and Track Networks to Enhance Relationships (PARTNER) Tool [36]. The PARTNER Tool collected information on (1) facilitators and barriers to CAPs; (2) motivations to participate; (3) goals; (4) partnership success; (5) perceived trust; (6) perceived value (7) network metrics on partnerships; and (8) demographics (Table 1 & Appendix 1). Guided by a pragmatic approach, the qualitative phase utilized individual semi-structured interviews to expand on results from the PARTNER tool (Appendix 2). A pragmatic approach converges positivism and constructivism to fully understand existing collaborations in context, while also prioritizing underlying experiences and meanings [55–57]. Both data strands served the function of expansion, where quantitative data identified *what* relationships exist in the network, level of the collaborative activities, and

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motivations to participate, providing breadth of collaboration. Qualitative data further elaborated on *how* partners experienced collaborations and the meaning underlying endorsed responses, providing depth by contextualizing quantitative results [41]. The next section summarizes and outlines how outcomes from MMSNA promoted understanding of network ties between partners, motivations to participate, facilitators and barriers, and perception of partnership success.

Table 1. Adapted items for PARTNER Tool Survey		**Survey item (Appendix 1)**
Variable	**Outcomes**	
CAP Survey	Facilitators and barriers	Items #10 and 11
DPQ	Motivations to participate	Item #3
Perceived Goals	Multiple response, then single choice for most important contribution	Items #7 and 8
Perceived Partnership Success	Likert Type Scale (1-4)	Item #9
Demographics	Agency/institutional affiliation, (2) agency role, (3) duration of time involved with the CAP, (4) organizational contributions	Items #1, 2, 4, 5, 6
Network Metrics		
Trust	3 indices using Likert Type Scale (1-4) (a) reliable; (b) mission congruence; (c) open to discussion	Items #13-20
Perceived Value	3 indices using Likert Type Scale (1-4) (a) power/influence; (b) level of involvement; (c) resource contribution	
Network measures	*Whole network* Network density, centralization, *Node level* degree centrality, closeness centrality, quality of ties (frequency and level of activity)	

Network ties between partners. Participants were provided with a comprehensive list of 27 agencies in the CAP and asked to indicate which agencies they had established a formal or informal relationship within the past year. Additional network items then collected details on the frequency and level of collaboration for each relationship endorsed (lower levels of aware to higher levels of integrated). The PARTNER tool calculated trust, reliability, mission congruence,

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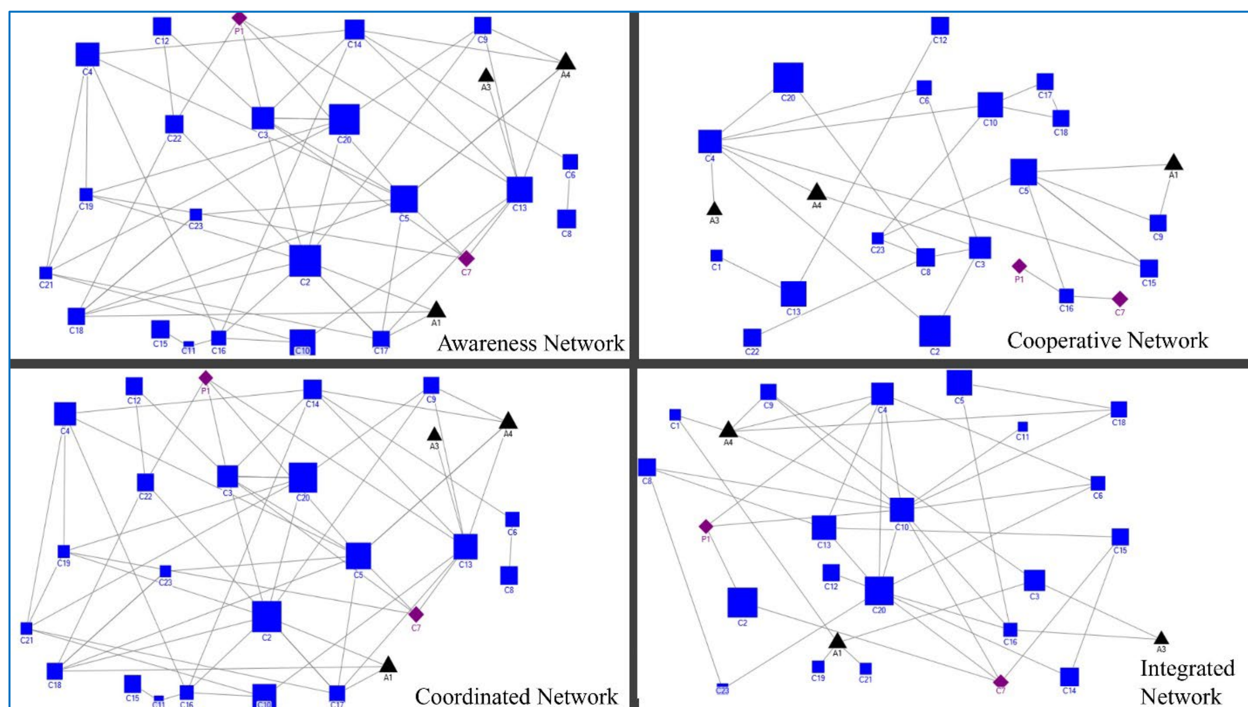
openness to discussion, perceived value, power/influence, level of involvement, and resource contribution of each individual agency endorsed as a collaborator [36]. From these responses, the PARTNER Tool also generated validated SNA metrics, including network density and centralization that focused on the whole network, and density and degree centrality (in-degree, out degree) at the organizational level. Network density was used as a proxy for collaboration, detailing how well-connected CAP members were overall [58–61]. While this is not a comprehensive list of SNA metrics that can be used to evaluate partnerships, those selected were validated with a two-year process of interviews, surveys & focus groups identifying the most relevant metrics for public health networks[62]. Other SNA metrics can be accessed using other software, such as NodeXL or Python's NetworkX package. Of note, in-degree and out-degree centrality are also less sensitive to missing data and often recommended to use with incomplete data [63,64]. With these metrics, multiple visualizations illustrating networks of collaboration were created (see Figure 1[1]).

[1] Purple triangles indicate policymakers, blue squares indicate community agencies, and black triangles indicate academic institutions.



With these results, we demonstrated findings using a visualized demo via Zoom and identified which agencies played a more central role in the CAP by their measures of degree centrality, as well as distinguished agencies reporting higher rates of inward collaborations versus outward collaborations. Those who demonstrated high in-degree centrality had established more prominence in the network and popularity among other partners in the CAP. We also considered agencies with the lowest degrees to identify areas that could be strengthened as significant literature points to existing opportunities embedded in weaker ties [65,66]. Additionally, the PARTNER Tool was also flexible enough to integrate context that revealed varying patterns in partnership characteristics by sizing nodes according to their trust or value scores in the sociograms.

SNA provided insight into partnership dynamics related to the collaboration process. Not only were we able to reveal positions and structure of the CAP network, but we also had data to illustrate levels of collaboration, resources contributed to the partnership, and perception of value

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and trust. These results can help identify where and what type of collaborations exist, as well as quality of these relationships (e.g., trust value); such details carry important implications for sustainability and effectiveness of community health partnerships. In using this approach, we can collaboratively identify gaps in network ties to guide opportunities for improvement and enable stakeholders to make data-driven decisions about resource allocation, which may be particularly helpful for resource constrained settings or fluctuating funding environments.

Motivation of community partners, facilitators & barriers, and perception of partnership success. Motivations to participate were collected using the decision to participate questionnaire [DPQ][13,67]. These items provided frequency scores, thereby revealing the most common motivational factors for CAP participation. Two additional survey items were developed based on a prior systematic review on CAPS [3] that captured facilitators and barriers to collaboration. A single item from the PARTNER Tool measured perceived partnership success using a 5-item Likert-type scale ("1-Not successful" to "5-Completely successful"). Qualitative interviews were conducted afterwards to expand on partners' responses from the quantitative survey, eliciting details on the why and how of motivations, facilitators, barriers, successes, and gains. Here, partners were able to provide feedback on how to foster deeper collaborations.

As one example, barriers identified by the majority of partners were related to unclear roles and inconsistent participation with the CAP. Triangulation of survey data with the qualitative interviews further clarified these responses with context and meaning. Academic partners discussed that "research" as a language didn't necessarily translate well into community settings, which was then leading to missed opportunities in promoting participation simply because the CAP purpose wasn't communicated clearly. On the other hand, community partners emphasized the need for clearer and transparent communication that centered community needs

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and acknowledged the expertise of all partners at the table to ensure a common agenda. One community partner stated, "*Everything we should be doing to support our community starts with the people and with what they think is important*," highlighting the importance of centering community values and priorities in collaborations. These findings indicate the need for a shift in priorities to improve relationship-building.

We then shared an infographic with CAP core leaders for discussion and feedback. The infographic was altered to a summary page on the CAP's website and disseminated through a shared newsletter. Revisions to the summary page specified that the CAP core leaders would commit to improve clarity of partner roles and communication, as well as outlined key strengths in network trust and value scores. CAP core leaders have since prioritized clearer communication strategies in other projects.

Collectively, these assessments can provide insight into determinants that lead to better collaboration outcomes. In our approach, we captured community partners' motivating factors, perception of barriers and facilitators to collaborations, perception of success and gains, all of which can strongly predict long term effectiveness of CAPs [48,63,68,69].

Recommendations for practical application

For community practitioners who are interested in implementing this approach to assess community health partnerships, we summarize the following recommendations based on what we've learned from our community partners, as well as other projects we've undertaken with community collaborations.

1. **Prioritize community values and perspectives** by integrating CBPR principles that share power throughout the research process [70,71]. Spending time in the community can build relationships with key stakeholders as well as transparent, clear communication systems. Every

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effort should be made to include community partners in the collaborative to incorporate their insights into the process. Community members should be consulted with throughout the decision-making process to identify partnership goals and objectives with community centered values and priorities from beginning to end. Without transparency and community inclusion, the sense of mistrust between community and academic institutions will burgeon.

2. **Adapt to community context** in a way that is respectful towards cultural norms, language, and community priorities. We recommend academic partners maintain flexibility to successfully promote inclusion and engagement of community participation, such as adapting language to community context. Integrating these practices will help prioritize community values and ensure no harm is done. One way to do this is by collectively defining terms and agreeing upon milestones for the partnership. What does the community partner want to accomplish? Practitioners may find the opportunity to do this in ongoing meetings with community partners, where terms, such as "community" or "success" are collectively defined in order to measure meaningful indicators of effectiveness. For this project, we made sure to meet with community core leaders and elicit feedback on the survey and determine whether it helped meet their partnership goals (e.g., establish infrastructure for collaborations in health equity). Additional efforts can be made to tailor survey items, such as network outcomes and contributions to capture context.

3. **Integrate clear and transparent communication with community partners** for project updates, to elicit suggestions or feedback, or disseminate resources in an effort to maintain clarity of roles and participation. We recognize that community partners are overwhelmed; if it is not possible to set up meetings, then provide access to an evaluation form or "suggestions box" in a web-based platform. Of note, any updates or summary reports should be easy to read,

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visually appealing, and understandable across general audiences. Because network data can be complex, we strongly encourage practitioners to utilize basic, direct forms of communicating findings. In this project, we utilized various forms of data presentations. We presented the network data interactively with the PARTNER Tool platform on a shared screen via zoom to engage community core leaders with the data. We also presented findings using a two-pager with best practices in data visualization, which was then distributed via a newsletter and website to broader partners. A formal report will be provided with network data for a collective discussion about the findings. Visual products, in particular, made processing the network data clearer and more accessible to community stakeholders. We also incorporated feedback on initial products after presenting them to core leaders. Effective communication strategies can help facilitate synergistic thinking and collective action[10] .

4. **Demonstrate gratitude and value for community partners.** It is encouraged to compensate partners with stipends, meals, gift cards, mileage reimbursement, or other needs that may have been expressed in prior meetings to assure potential benefits. In our project, we made modifications to increase incentives from $15 to $50 for more engagement during COVID-19 and in an effort to reflect how we, as researchers, acknowledged how much their time and energy had been compromised. We also offered brief summary reports of their organization's connections to other CAP members to provide a high-level overview of the CAP network. Because the first author was aware of concerns regarding funds and resources leaving the community from prior discussions, we also incorporated options to donate to a non-profit or charity in Genesee County to show support of community partners' values. Other forms of demonstrating value for your community partners' input may be centered on professional development, where community partners are offered authorship on manuscripts, present at

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conferences, lead data sensemaking sessions, or actively involved in the dissemination of activities or other strategic plans. Highlighting potential benefits to community partners can strongly influence their involvement in the collaboration [10]

Limitations

It is important to consider limitations to the methodological approach proposed here. First, sampling network data can be challenging, particularly if the sample is bound to specific groups with limited engagement over time [72,73]. Given this, network data is often susceptible to missingness [26,63,74]. Another limitation of SNA relates to privacy and confidentiality of participants. The most useful network data cannot be collected anonymously; instead, data should identify who is interacting with whom, as organizations or pseudonymized individuals, so discussions about results can guide informed decisions about the partnership. However, this can often create tensions when disclosing results with community partners [27,74,75]. Other considerations related to power dynamics among community health partnerships can compromise accuracy of results due to social desirability biases and undermine partnership dynamics, particularly because CAPs are not typically integrated with all components of CBPR [3,76]. Furthermore, network studies rarely benefit participants[77] . Incorporating potential benefits to affiliated CBOs, partners' professional development, or involvement with the data (e.g., relaying feedback to the CAP for change) in tandem with SNA can minimize drawbacks. It is strongly recommended to utilize relationship-building strategies to minimize these limitations and prioritize community values. Specifically, relationship-building strategies should underline the co-learning process, integrating values of community partners and transparency of procedures throughout the process [26,70].

Conclusions

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The use of MMSNA maximizes benefits from a systems methodology—SNA—with qualitative interviews. A network survey with qualitative interviews can contribute meaningfully nuanced details that capture collaboration processes and community perspectives therein. SNA supplements visualizations to these nuances that can identify influential partners, assess level of collaboration, and identify opportunities for improvement. Qualitative interviews then expand on these findings, with the potential to increase social validity and accuracy of interpretation, along with concrete suggestions to improve collaborations grounded in community-centered values. By further examining motivations, barriers, and facilitators, we have also captured meaningful community perspectives and expertise to build and maintain relationships toward greater public health outcomes. To improve collaborations overall, it is critical to understand the utility of strategic and effective collaborations and how community and academic partners coexist across their organizational boundaries for more sustainable public health efforts centered on the community that is directly impacted.

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Appendix 1: PARTNER Tool survey used for MMSNA example

Question Text	Question Response Options
1. Your organization should be listed below. If it is not, please return to the original email and click on that link.	
2. What is your job title?	[open-ended]
3. What was your motivation for joining the CAP? [Select all that apply]	1. The idea of collaborating with other community agencies fits with my agency's/program's philosophy 2. Opportunity for networking with other community providers 3. Opportunity for future training/ consultation 4. Number of studies my agency/program is asked to participate in 5. Experiences with other CAP members 6. Reputation of CAP and/or the research team in the community 7. Need for a systematic process for adopting and using new evidence-based practices 8. Pressure to implement new evidence-based practices 9. Participation in other research studies 10. Fiscal implications of participation in a collaborative group 11. Time implications of participation in a collaborative group 12. Alignment of collaborative principles with agency/program policies 13. Administrative support for collaboration in order to develop a systematic process for adopting and using evidence-based practices 14. Need for adopting and using new evidence-based practices. 15. Opportunity to use the systematic process that is developed to help adopt and use new evidence-based practices within my agency/program
4. How long have you been involved with the CAP (in months)? Please type 0 if no interaction with the network, 24 for two years, etc. Note: type numerals (e.g. 11, not eleven)	
5. Please indicate what your organization contributed to the CAP (choose as many as apply).	1. Funding 2. In-Kind Resources (e.g., meeting space) 3. Paid Staff 4. Volunteers and Volunteer staff 5. Data Resources including data sets, collection and analysis 6. Info/ Feedback 7. Specific Health Expertise 8. Expertise Other Than in Health 9. Community Connections 10. Fiscal Management (e.g. acting as fiscal agent) 11. Facilitation/Leadership 12. Advocacy 13. IT/web resources (e.g. server space, web site development, social media) 14. Other (text box)
6. What is your organization's most important contribution to the CAP?	Same response list as #5

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7. Outcomes of the CAP's work included (or could potentially include): (choose all that apply).	1. Health education services, health literacy, educational resources 2. Improved services 3. Reduction of health disparities 4. Improved resource sharing 5. Increased knowledge sharing 6. New sources of data 7. Community support 8. Public awareness 9. Policy, law and/or regulation 10. Improved health outcomes 11. Improved communication
8. In your opinion, which was the CAP's most important outcome for the past academic year?	Same response list as #7
9. Collectively, how successful was the CAP at reaching its goals?	1. Not Successful 2. Somewhat Successful 3. Successful 4. Very Successful 5. Completely Successful
10. Thinking about collaborations overall, what aspects contribute to successful collaboration? (choose all that apply)	1. Respect among partners 2. Good relationships between partners 3. Positive community impact 4. Trust between partners 5. Mutual benefit for all partners 6. Clearly differentiated roles/functions of partners 7. Shared vision, goals, and/or mission 8. Well-structured meetings 9. Good initial selection of partners 10. Effective and/or frequent communication 11. Effective conflict resolution 12. Good quality of leadership 13. Bringing together diverse stakeholders 14. Exchanging info/knowledge 15. Sharing resources 16. Informal relationships created 17. Other (write-in response)
11. Thinking about collaborations overall, what makes collaboration more difficult? (choose all that apply)	1. Mistrust between partners 2. Poor or unequal decision-making 3. Lack of mutual benefit 4. Unclear roles and/or functions of partners 5. Excessive time commitment 6. High burden of activities/tasks 7. Differing expectations of partners 8. Inconsistent partner participation or membership 9. Excessive funding pressures or funding control struggles 10. Poor communication between partners 11. Lack of shared vision, goals, and/or mission 12. Lack of a common knowledge or shared terms between partners 13. Something else [text box] 14. None of these

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12. In your opinion, what were the strengths of being involved with a collaboration?	[open-ended]
13. From the list, select <u>organizations</u> with which you have an established collaboration for health equity efforts (either formal or informal). NOTE: Your organization is not listed below because you are representing the organization in the survey you are taking now and cannot choose your own organization as a partner to answer questions about.	Comprehensive list of all agencies in the CAP
14. How frequently did your <u>organization</u> work with this <u>organization</u> on issues related to the health equity goals?	1. Never/We only interact on issues unrelated to the collaborative 2. Once a year or less 3. About once a quarter 4. About once a month 5. Every week 6. Every day
15. Please describe the nature of your relationship with this <u>organization</u> [note: the responses increase in level of collaboration]?	1. None 2. Awareness of what this org/program/dept's role in the system (e.g. understanding of services offered, resources available, mission/goals) 3. Cooperative Activities: involves exchanging information, attending meetings together, informing other programs of available services [example: your org *understands how* to coordinate services/how to access services from this organization] 4. Coordinated Activities: Includes cooperative activities in addition to exchange of resources/service delivery; coordinated planning to implement things such as Client Referrals, Data Sharing, Training Together [example: your organization *has coordinated* services food systems in the community with this organization] 5. Integrated Activities: In addition to cooperative and coordinated activities, this includes shared funding, joint program development, combined services, shared accountability, and or shared decision making (Example: a formal program with funding exists between your org and this org)
16. How valuable was this organization's POWER and INFLUENCE to achieving the overall mission of the health equity collaboration? ***Power/Influence: The organization holds a prominent position in the community by being powerful, having influence, success as a change agent, and showing leadership.**	1. Not at all 2. A small amount 3. A fair amount 4. A great deal
17. What is this organization's level of involvement in health equity collaboration? ***Level of Involvement: The organization is strongly committed and active in the partnership and gets things done.**	1. Not at all 2. A small amount 3. A fair amount 4. A great deal

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18. To what extent does this organization contribute resources to the CAP? ***Contributing Resources: The organization brings resources to the partnership like funding, information, or other resources.**	1. Not at all 2. A small amount 3. A fair amount 4. A great deal
19. To what extent does the <u>organization</u> share a mission with the CAP's mission and goals? ***Mission Congruence: this organization shares a common vision of the end goal of what working together should accomplish.**	1. Not at all 2. A small amount 3. A fair amount 4. A great deal
20. How open to discussion is the <u>organization</u>? ***Open to Discussion: this organization is willing to engage in frank, open and civil discussion (especially when disagreement exists). The organization is willing to consider a variety of viewpoints and talk together (rather than at each other). You are able to communicate with this organization in an open, trusting manner.**	1. Not at all 2. A small amount 3. A fair amount 4. A great deal

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Semi-Structured Interview Protocol

Participant ID#___________________________ Interview Date: ______________________

CAP Interview

Interviewer Script:

Thank you for taking the time to talk to me about your experiences as a (community or academic) partner in the [CAP]. This interview will be approximately 30-45 minutes. Please remember that there is no wrong answer to these questions. We are really interested in hearing more about how you feel about your own experiences in this partnership.

Please remember that you do not have to respond to anything that makes you feel uncomfortable; although, we do not expect these questions to make you feel uncomfortable. Zoom will be recording this conversation to maintain a record of what was shared with me. However, I will make sure to keep any names or other identifiable information confidential. [Institutional] Zoom is HIPPA compliant and will assure privacy of our conversation. After the recording is reviewed and the data is transcribed, it will be destroyed.

Before we begin, I want to tell you a little bit about the project. The purpose of the project is to better understand the experiences of partners in CAPs. Specifically, we want to learn more about: (a) your perspectives on the collaboration process, (b) barriers and facilitators to the CAP efforts, (c) your motivations for joining the CAP, and (d) expectations of outcomes. At the end of the interview, we welcome any suggestions you might have to improve the partnership for future efforts.

Do you have any questions before we begin?

(Begin recording on Zoom)

In the first sect of questions, we want to ask about your role as a partner in the FCHES Partnership Consortium and your motivations for joining.

1. How did you get involved with the CAP?
   Prompt: Did someone recruit you? Were you invited by a staff member to participate?
2. Please describe your role as a partner in the CAP. What do you do as a partner?
   Prompt: Do you attend meetings? Involved in making any decisions? Work with other partners?
3. You noted [FACTOR] as your motivation to join the CAP. Please tell me more about why [FACTOR] motivated you to join the partnership.
   Probe: Which of these factors is most important for your ongoing involvement with the CAP?
4. What are other reasons you *continue* to serve as a partner?
   Probe: What is it that keeps you involved in the collaboration? Why do you continue to attend?

5. (**If a community partner)** What do you hope to get from the academic partners?
(If an academic partner) What do you hope to get from community partners?

Probe (Both): What do you think other community/academic partners hope to gain from the collaboration?

The next set of questions build on your responses from the social network survey we sent earlier in January. We want to ask about what makes collaboration easier or more difficult to try to find ways to improve future efforts.

6. On the network survey, you identified (RESPONSE) as facilitators in the CAP. Could you elaborate on that/those?

Prompt: Which of these do you think are **most important** to sustain a CAP?

7. On the network survey, you identified (RESPONSE) as hindering factors to the CAP. Could you elaborate on that/those? Do you feel that is/they are ongoing or resolved?

Prompt if ongoing: Do you have any ideas or suggestions on how that could be improved in the future for CAPs?

Prompt if resolved: Do you have any ideas or suggestions on how future collaborations could avoid a similar issue?

8. What are other recommendations to improve the CAP?

Is there anything else you'd like to share that I haven't asked about?

Thank you so much for telling us more about your partnership experiences. This is the end of our interview.