

Communication Infrastructure Theory and Reproductive Health Disparities: Enhancing Storytelling Network Integration by Developing Interstitial Actors

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This article reports on a multiyear intervention to address a key factor in African American women's underutilization of reproductive health-care services in a small city: a communicative disjuncture between residents and community-based organizations (CBOs). Through the lens of communication infrastructure theory, we explicate processes through which the intervention reduced the communication disconnect between individual and organizational community actors. Analyses of interviews with community residents and CBOs show how the research team and an emergent group of residents working as peer health advocates functioned as interstitial actors who helped bridge the gap between micro- and meso-level actors. We discuss pragmatic implications of this research for health communication interventions and ways in which the study extends communication infrastructure theory.

Keywords: communication infrastructure theory, community-based participatory research, reproductive health disparities, health communication intervention

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Racial and ethnic minority women in the United States are affected disproportionately by poorer reproductive health and family-planning outcomes (e.g., Boonstra, 2008; Finer & Henshaw, 2006; Kost, Henshaw, & Carlin, 2010). African American women, who are the focus of this study, are less likely to develop breast cancer than non-Hispanic White women, but they are more likely to die of it.³ In addition, they are both more likely than non-Hispanic White women to contract cervical cancer and more likely to die from it (National Institutes of Health, 2006).⁴

Although they are not capable of addressing the most macro-level determinants of health disparities, community-level interventions, including those carried out by or with community-based organizations (CBOs), hold promise for addressing these disparities as they are able to provide resources in ways that most readily address particular, local community needs (e.g., Anderson, 2004; Stephens, Rimal, & Flora, 2004). CBOs can bring resources into communities in the form of health services, transportation assistance for accessing health services, health education, and facilitation of enrollment in programs to pay for health care. However, community-based providers of women's reproductive health care whose mission is to serve the underserved sometimes find it difficult to connect with the very populations they seek to serve, leading them to label these community members "hard to reach" (Golden, 2014; Wilkin, Stringer, O'Quin, Montgomery, & Hunt, 2011). From a social-ecological perspective, a lack of consistent connection between community residents and CBOs can be construed as a problem of communication between two different levels of a community: the meso level of the community-based health and human service organizations and the micro level of the individuals (Baffour & Chonody, 2009; Lounsbury & Mitchell, 2009).

The overarching goal of the multiyear, intervention-oriented research project we report on here (referred to hereafter as the Women's Health Project or WHP) was to identify successful strategies for bridging a communicative divide that health and human service organizations had identified in a small urban community. We envisioned that bridging the communicative divide would help improve the reproductive health of underserved, low-income African American women in the community by increasing their uptake of locally available services. The WHP was informed by social-ecological approaches to health promotion and communication (Ball-Rokeach, Kim, & Matei, 2001; Sallis & Owen, 2002) and principles of community-based participatory research (CBPR) (Minkler & Wallerstein, 2008).

From a summative evaluation perspective, by the end of its fourth year, WHP achieved the key goal of increasing African American women's utilization of the local publicly funded reproductive health-care provider by 25%.⁵ In this article, however, we focus on the *processes* through which intervention

³ Incidence was 119.4 versus 149.4 per 100,000, but deaths were 34.7 versus 26.2 per 100,000 (National Institutes of Health, 2006). However, African American women (especially premenopausal women) are more likely than European American women to develop a form of breast cancer that is more difficult to treat, one factor that contributes to African Americans' higher death rates from breast cancer than European American women or Hispanic women (Carey et al., 2006), pointing to a need for more aggressive screening of African American women at younger ages and a need for more research.

⁴ Deaths were 5.3 versus 2.4 per 100,000 (National Institutes of Health, 2006).

⁵ This goal was set considering the population of African American women in the community in relation to the number of African American women seen at the local health-care center at the time the project was

goals were pursued and achieved. More specifically, our purpose is to convey the results of a *process analysis* (Judd & Kenny, 1981). We distinguish this from a more traditional CBPR *process evaluation* (Sandoval et al., 2012) because we do not take the processes at work in this intervention as a given; rather, we seek a better understanding of what those processes are. Moreover, consistent with the constructivist grounded-theory approach that guided this study (per Charmaz, 2006), identification of the processes we describe is both emergent from the data we collected and informed by existing theory. For this reason, in this article, we begin by introducing the theoretical underpinnings of the WHP and then describe the intervention employed by the project to bridge the communicative divide between CBOs and residents. Subsequently, we present and interpret findings on the processes of network integration underlying the summative outcomes based on analyses of qualitative data from interviews with multiple community stakeholders and from participant observations. Finally, we discuss the implications of WHP's findings for communication theory and health-communication practices.

Communication Infrastructure Theory (CIT)

Because a key aim of the WHP was to address a disjuncture in communication relationships between community actors at different levels, communication infrastructure theory (CIT) emerged as a valuable perspective for this study in the course of its development (e.g., Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006). CIT is a social-ecological theory developed through communication research in urban communities. The theory informed our study in two key ways: (a) it offered sensitizing concepts (Charmaz, 2006) for approaching and analyzing our data, and (b) it guided additional data-collection efforts in later stages of the study that systematically focused on accessing the perspectives of community actors at different levels.

The communication infrastructure of a community comprises a multilevel storytelling network (STN) set in its communication action context (CAC) (Ball-Rokeach et al., 2001; Kim & Ball-Rokeach, 2006). The STN is made up of micro-, meso-, and macro-level actors. Micro-level actors are residents in their interpersonal networks who share stories with each other about their everyday lives in their neighborhoods. Meso-level actors include CBOs and community-oriented media whose stories tend to focus on a particular area or population (e.g., an ethnic community). Finally, macro-level agents include large-scale mass-media organizations and other large institutions and organizations (e.g., governmental or professional) that tell stories about an entire city, a region, or the country as a whole. Prior health-focused research employing CIT suggests that the more integrated residents are into their local STNs—i.e., the more connected they are to neighbors, local community organizations, and local media—the more likely they are to be knowledgeable about chronic diseases (Kim, Moran, Wilkin, & Ball-Rokeach, 2011) and to actively seek health information (Kim & Kang, 2006).

Communication among STN actors is enabled and constrained by the CAC. This context includes the community's physical layout, the built environment (e.g., organizational resources and technological

initiated; only 8.4% of the total number of patients seen at the center were African American (i.e., approximately 92 patients in a community where approximately 25% of residents self-identified as African American).

infrastructure characteristics, including the public transportation grid), and psychological factors such as residents' perceptions about how safe particular parts of their community are (Ball-Rokeach et al., 2001; Matsaganis, 2007). The CAC also includes two additional features: "communication hotspots" and "comfort zones" (Wilkin et al., 2011). Both combine physical and psychological features of the CAC. Communication hotspots are places where residents naturally gather to talk, whereas comfort zones are community institutions (including CBOs) to which residents feel closely connected.

Health Communication Intervention Through the Lens of CIT

As Wilkin (2013) notes in her review of CIT-informed research and its potential for use in communication-based research on health disparities, most projects to date have focused on analyzing relationships among elements of the communication infrastructure and health outcomes, relying primarily on surveys of affected communities. Wilkin acknowledges that a much smaller number of projects have employed CIT in an intervention mode, for example, by using CIT to develop outreach strategies for campaigns aimed at hard-to-reach populations, such as low-income new immigrants and individuals who do not have access to the Internet (Wilkin & Ball-Rokeach, 2011). From a CIT perspective, residents who are labeled "hard to reach" are difficult for CBOs to connect with because they have limited connections to both CBOs and local media. However, CIT has not heretofore been used as a theoretical framework for elucidating the processes through which a communication intervention can effect change in a community by bridging a communicative disjuncture between micro and mesolevel members of an STN.

With this article, we contribute to the CIT-based literature and to community-level health-promotion research in three ways: (a) by identifying mechanisms through which connections between micro and meso levels can be created and sustained when the integration of the storytelling network in a community is weak or less than optimal; (b) by demonstrating, through our analysis of stories told by organizations and residents about WHP and about each other, how stories—a central concept in CIT—connect neighborhood actors to each other; and (c) by offering two refinements to CIT. We add the constructs of "interstitial" and "liminal" actors to the micro-meso structure of STN actors, and we elaborate the concepts of communication hotspots and comfort zones in the communication action context. In sum, consistent with the constructivist grounded-theory orientation (Charmaz, 2006) that informs this study, we use CIT to explain processes underlying WHP's outcomes, while the analysis simultaneously contributes refinements to CIT.

The research question, then, that informed this communication intervention and the analysis presented here is: How can a community network of micro-level actors (i.e., community residents) and meso-level actors (i.e., community-based health and human service organizations) in a small-city setting with a perceived communicative disjuncture be more effectively integrated to encourage underserved, low-income minority women to seek preventive reproductive health care?

Research Design and Procedures

Research Setting

The site of our study is a small city in a rural county that, according to data from the 2005–2009 American Community Survey (U.S. Census Bureau, 2005–2009) has approximately 6,900 inhabitants, 25% of whom self-identify as African American. The city comprises two census tracts that are distinctly different with respect to income; in the census tract this study is based on, median household income is \$36,578, with 27% of individuals living below the poverty line. Median household income among African Americans, who constitute 30% of this tract's population, is \$27,904, with 28% of individuals living below the poverty line. Approximately 24% and 25% of the census-tract population and of African Americans living in the area, respectively, have not completed high school. The Guttmacher Institute's report *Contraceptive Needs and Services, 2001–2004* (Guttmacher Institute, 2006) identifies significant unmet need in the region. However, the numbers of African American women seen at the local publicly funded reproductive health care center, which was established explicitly to serve low-income women, had been far below what the socioeconomic census data and the Guttmacher data on need would predict.

The Intervention

Formative research. The multiyear intervention research project that we report on here (i.e., WHP) built on the findings of preliminary research in the same community. The aim of this earlier exploratory descriptive research was to identify reasons for underutilization of the local publicly funded reproductive health care provider (referred to here as Women's Health Services, or WHS) by African American women in the community. Findings from interviews and focus groups suggested a lack of engagement between WHS and the women residents, consequent misperceptions about the nature of the services provided by WHS, and a structural barrier caused by lack of public transportation (Golden, 2014).

Intervention design. An academic research team undertook the intervention in collaboration with WHS and other local health and human service organizations. Apart from social-ecological approaches to health promotion and communication (Ball-Rokeach et al., 2001; Sallis & Owen, 2002), WHP was also informed by principles of community-based participatory research (CBPR) such as iterative research designs that include in-process evaluation, partnerships with community organizations, and participation of residents in shaping interventions (Minkler & Wallerstein, 2008). In CIT terms, WHP intervened in the indigenous storytelling network and at both the micro and meso levels to promote better connections between residents and CBOs. The voices of community organizations and those of residents helped shape the project.

Community advisory board (CAB). To bridge the communicative divide between CBOs and residents, WHP needed, first, to establish relationships with both. Consistent with principles of CBPR, the academic research team's first task, after obtaining institutional review board approval, was to assemble a community advisory board (CAB). With the advice of its initial community partner, WHS, the research team identified other local health and human service organizations whose missions intersected with the aims of the project and contacted them to invite them to participate in the project. We followed

introductory e-mail inquiries to candidate CBOs with face-to-face meetings to establish shared interests. Interactions with these CBOs affirmed the finding of the formative research with WHS regarding local health and human service organizations' perceived difficulties in connecting with residents. The 10 CBOs that came to constitute the CAB advised the research team in tailoring the content and format of intervention activities for community members, formed strategies for recruiting participants for activities, and participated in health education events in neighborhood settings (e.g., by tabling).

WHP field office. To build relationships with community residents, shortly after WHP launched, the organization established a field office in the city's public housing complex where the greatest concentration of low-income African American women resided. The field office was staffed by a community outreach associate, an African American woman with ties to the area, and served as a base for her interactions with residents.

Community health education events/resource fairs. To increase engagement between residents and CBOs, the WHP held bimonthly events in the community room of the public housing complex and other neighborhood locations where women and their families could meet face-to-face with organization representatives, learn more about their services, and sign up for appointments, and also receive taxi vouchers for transportation to services. Events featured participatory entertainment by a local culture and arts organization, including African drumming and dance.

The peer health advocate initiative. After approximately 18 months of bimonthly community events, WHP, in collaboration with WHS, initiated more frequent weekly outreach sessions at the public housing complex to provide more opportunities for the organization to connect with community residents. After three months of outreach by WHS staff and WHP research team members and building on the spontaneous involvement of residents who encouraged their friends and neighbors to connect with the outreach efforts, WHP added to its intervention activities a peer health advocate initiative. In Year 3, seven adult women residents, who had displayed interest in WHP by attending community events and interacting with staff during outreach, were invited to participate in the peer group initiative. The peers received 20 hours of initial training developed by WHS on outreach techniques and reproductive health knowledge. They continued to meet weekly with the WHP's director and the community outreach associate for professional development and planning activities. The peers took over the weekly outreach, assisted with promoting and carrying out the community health education events, and were instrumental in implementing reproductive-health screening events, which are described below. In Year 4, the first full year of the initiative, the peers made 806 contacts with residents during weekly outreach sessions (distributing information about reproductive health and safer sex supplies). The peer health advocates played a critical role in connecting the WHP and, in turn, the CBOs to their fellow residents through processes that are documented in the findings reported below.

Reproductive health screening events. Near the end of Year 3, with the support of the peer health advocates, WHP initiated an additional strategy of connecting residents with organizations offering reproductive health services. Referred to informally among WHP staff as "ladies nights," in these events, the peers assisted in recruiting residents to obtain health screenings (i.e., mammograms and annual gynecologic exams) as part of a group. The peers extended personal invitations, and the research team

followed up to set up the appointments with WHS and the local imaging center. Group transportation was provided, with the peers acting as escorts. Over 22 months, 6 interventions (2 focusing on mammograms and 4 focusing on annual gynecological exams) were conducted, resulting in a total of 43 screenings: 22 annual gynecological exams (with 3 repeat participants) and 21 mammograms (with 8 repeat participants). The reproductive health screening events were another means through which the peer health advocates helped connect their fellow residents to services.

Participants and Data Collection

Consistent with CBPR principles and informed by grounded theory methodology (Charmaz, 2006), the WHP's design is iterative, with multiple cycles of intervention activities, data collection, analysis, interpretation, and feedback among the project's research partners over a period of four years. Driven theoretically by a social-ecological approach, the study's research design is also multilevel: data were collected from both residents, including the peer health advocates (micro level) and CBOs (meso level).

Micro-level data collection (community residents and peer health advocates). Data at the micro level that inform the findings presented here include 105 semistructured, in-depth interviews with female residents ($N = 89$) who participated in the bimonthly health education events and resource fairs (recorded and transcribed in their entirety) and ethnographic field observations made by members of the research team on interactions with community residents. Participants reported a median age of 49; 65% identified as African American or African American and some other ethno-racial group, 28% identified as White, 6% as Latino or Hispanic, and 1% as South Asian. In postevent interviews, we asked participants for their reactions to the events, what they felt was most valuable, whom they interacted with, and their views of the availability and accessibility of health care in the community.

We also draw on eight interviews conducted with the peer health advocates, six recorded WHP team meetings (including researchers and peers), and field observations by research team members of their interactions with community residents and with the peers, as well as observations of interactions between residents and CBOs and between peers and CBOs.

Meso-level data collection (CBOs). Data that inform this study from the meso level include field observations and in-depth, semistructured interviews (recorded and transcribed in their entirety) conducted at the end of Year 3 of the WHP with staff members of CBOs who had worked with the research team in a variety of ways ($N = 20$, representing nine CBOs). All CBOs were members of the CAB; some primarily participated in CAB meetings, others primarily took part in health education events in the community, and some did both. CBO members were asked about their motives for participating in the WHP, the costs and benefits of participating, and their perceptions of the peer health advocate initiative.

Data Management and Analysis

Our procedure for analyzing the data in relation to the study's research question was a multistage process of inductive analysis informed by the grounded theory approach (Charmaz, 2006). Within this framework, categories were both emergent from the data themselves and informed by existing research.

As Clark (2007) explains this approach, "theorizing is generated by tacking back and forth between the nitty-gritty specificities of empirical data and more abstract ways of thinking about them" (p. 424).

Our primary data sources were the post-community-event interviews with residents (which also contained questions about residents' perceptions of the peer health advocates after this initiative began) and the collection of interviews with CBO members. Separate coding structures were developed for these two collections. In each instance, starting with a review of a small number of interviews, we developed an initial set of coding categories and then refined them by reviewing additional interviews until no new categories emerged. Research assistants coded the entire collection of interviews using the coding categories developed. The second author sampled coded interviews for consistency. Ideas about the coded interview data were supplemented and contextualized with field observations by consulting our field notes and memoing.

Other data sources, including the collection of peer interviews and the peer workgroup recording transcriptions, were consulted selectively, as they were relevant to the question at hand (e.g., the peer team meetings were recorded largely to document teamwork processes, but some material regarding CBOs also emerged in these discussions that was relevant to the question on CBO-resident network integration and the role that CBOs played in this). Integration of the different data sources was accomplished through the "tacking back and forth" process that Clark describes, assisted by memoing to track our development of ideas about the data and ongoing exploration of relevant research literature. We used NVivo qualitative data analysis software to facilitate coding and retrieval of the interview data. Our analysis for this article focused primarily on instances of discourse in which participants talked about community actors at other levels; for example, meso-level actors (CBOs) speaking of micro-level actors (community residents) or vice versa. Within these segments of talk (or, in CIT terms, "storytelling"), we identified the types of stories being told about the other actor or actors and about WHP itself and the evidence that these stories provided about processes of building connections.

Both ways that Silverman (2003) identifies for ensuring the reliability of an interpretive-analytic study were employed in this project: systematizing the collection of data (through semistructured interview schedules) and cross-checking interpretations of data among members of a research team. In addition, the available relevant research literature provided a frame for the data provided by the participants and functioned as part of the system of checks and balances on the researchers' interpretations. With respect to internal validity in coding the data, the wealth of contextual information that interview accounts provided increased confidence. Even though an analytic coding scheme was used, the codes assigned were always selected on the basis of the context in which the segment occurred. In addressing the issue of external validity, we are mindful of the critical role that context plays in CBPR-informed research, as it circumscribes the study's generalizability. Nonetheless, it is still the goal of this study to make knowledge claims that can extend beyond this particular case and that can serve as the foundation for design and evaluation of future interventions to bridge communicative divides between community residents and CBOs.

Findings and Interpretation

WHP's intervention activities were designed to better connect a community's residents and health and human services organizations in order to increase utilization of reproductive health care services. As noted earlier, however, our primary focus in this article is on the *processes* through which (or how) intervention goals were pursued and achieved. Our understandings of the processes involved in WHP are grounded in analysis of data collected from all key community storytellers, analysis informed by constructs of communication infrastructure theory (CIT). We have organized our findings regarding processes around the two key agents who functioned as bridges connecting micro- and meso-level community actors: the original WHP research team and the emergent group of peer health advocates.

WHP as Bridge Between Residents and CBOs

Prior CBPR-guided research emphasizes building mutual trust between academic research teams and community stakeholders and achieving community buy-in as key determinants of project success. Accomplishing these goals typically takes sustained effort over many months (e.g., Hora, Prochaska, Bolin, & Ory, 2007; Thomas, Rosa, Forcehimes, & Donovan, 2011). For WHP, this meant that before addressing the communication disjuncture between residents and CBOs, researchers had to first strengthen existing relationships to the local community and build new ones. Here we draw on analysis of interview data from residents and CBOs, complemented by ethnographic field observations, to elaborate how WHP stimulated storytelling about itself as bridge and storytelling by residents and CBOs about each other and WHP. Several themes that emerged from the analysis reflect factors that enabled and constrained the process of relationship building through communication.

WHP as bridge from residents' perspective. Residents described how the health events organized by WHP provided opportunities for them to meet CBO representatives. They specifically talked about how these one-on-one encounters with CBO representatives made them feel more comfortable and willing to obtain services from them: "They was talking to me, they was real good to me . . . And they was listening and that was making me feel good 'cause they was listening and answering my questions the way that I wanted them answered."

Residents described the events as "informative, and the people we talked to were friendly." They spoke of WHP's efforts "to protect the people" and connect them with services such as health care and transportation:

Well, now I know that I can—there's other places I can go to get the [health] insurance, like the [organization I met at the event]. I can go there and they will help me go through, you know, everything. Then I don't have to go up there and argue with people at social services. And it's wonderful to know that they'll give me transportation, too. I can't walk so far. (Community event participant/resident)

Participation in the events helped residents develop knowledge of the institutional resources available to them; moreover, face-to-face contact with CBOs in the context of the events themselves and beyond

encouraged residents to be more proactive in seeking services. In CIT terms, residents' engagement with local CBOs in a local communication hotspot (the community room of the apartment complex) enhanced their knowledge of the community's communication action context (CAC) and extended the range of their communication comfort zones (i.e., the number of community organizations to which they felt more connected).

WHP as bridge from CBOs' perspective. The research team's initial activity to recruit community organizations to participate in a community advisory board constituted, from a CIT perspective, an effort to integrate itself into the community's storytelling network (STN) as a new actor. The stories CBOs told represent interpretive resources (Holstein & Gubrium, 2004) that they brought to bear in constructing an understanding of their involvement with and the impact of WHP.

Our analysis revealed two dominant stories CBOs told about their involvement in the WHP. The first one spoke about their relationship to WHP as a "partnership" built on the basis of perceived shared goals ("we were both trying to reach the same people"; "you're reaching the community we want to reach") and mission fit ("it fits exactly"; "common goal of addressing health disparities"). The second dominant story CBOs narrated was that of participation in the WHP as a means of strengthening connections with residents whom they identified as underserved.

With respect to the impact of WHP, the first key CBO story revolved around the importance of the community outreach associate and the field office in enabling the CBOs to connect with the residents they had not previously been successful in reaching. CBO staff members described barriers such as their race ("I'm White, and there's no trust there. They don't know me.") and spoke of the outreach associate's role in helping them reach residents: "She is on the ground, she's knocking on the doors, she physically has her office there. She is the one that is doing the face-to-face that is needed to get people in the door." One CBO member saw the trust developed between residents and WHP transfer in part to her organization. Residents developed trust in the community outreach associate, and they saw that she trusted the CBO; then "they start[ed] to trust me," the CBO representative said, and they contacted the organization for services.

CBOs also spoke about the impact of their participation in the community health events organized by WHP, as it enabled them to connect with residents. The events provided a trusting and open environment that allowed sensitive health topics to be addressed.

We wanted to be part of that community and get a message to them that mental health, rape crisis are not things they should be wary of. And this [the event] is the way to come in there without being frightening for folks. . . . It gave us entrée in a way that was healthy for us and in a way we couldn't do on our own. (CBO staff member)

By holding these health events in a communication hotspot and with WHP staff that had developed trusting relationships with residents (including the outreach associate and, later, the peer health advocates), it was possible for residents and CBOs to address health screenings and sensitive topics. The

events bolstered perceptions of the community room in the apartment complex as a hotspot for communication among residents and between residents and CBOs.

Challenges in building WHP as micro-meso bridge. CBOs' stories pointed to several challenges that WHP encountered in developing relationships with them. In CIT terms, these challenges reflect tensions between enabling and constraining dimensions of the communication action context. The most significant challenge was CBOs' resource limitations, which have been identified as a fundamental tension in the literature on engaged scholarship (Lewis, 2012; McKelvey, 2006). Agencies may be able to participate in initiatives only to the extent that they can justify investing resources that will bring them a return in the form of achieving the goals their continued funding depends on. The second significant challenge was residents' initial suspicion of the outreach associate's presence. Only slowly and after months did relationships evolve from just learning each other's names to developing caring connections. In that time, as WHP evolved into a community resource, the field office emerged as a new comfort zone for residents.

The Peer Health Advocate Initiative as a Micro-Meso Bridge

The peer program developed into a visible and important neighborhood actor with multiple roles. One of the most important roles was that of bridging agent between community organizations, research team, and residents. Legitimization, or the process by which the peer group justified its right to exist and pursue its goals to community stakeholders, including residents and CBOs, required time and multiple steps (De Blasio, 2007; Maurer, 1971). A turning point for the legitimization of the peer program's role in the eyes of CBOs occurred when peers participated in a CAB meeting to speak to CBOs about their work and WHP's impact on them. At this meeting, the peers noted that being part of WHP connected them to local CBOs and enabled them to direct other residents to unknown or lesser known community resources. As one peer noted at the meeting, "I've been introduced to a lot of different organizations, and I am able to let people know that they have options" with respect to reproductive health issues. Statements to this effect confirmed that the peer program provided a critical need that CBOs recognized and valued—communication links between local health and human service organizations and residents—thereby expanding residents' comfort zones.

Stories told by CBOs and community residents about the peer program and narratives of peers themselves about their role as a bridge between the micro and meso levels in the community point to the ways in which this initiative helped to reduce the gap between residents and CBOs, but also to challenges the peer group faced in performing its role in the community.

Peers' stories about their role as bridging agents. Interviews with individual peer health advocates and transcripts from weekly peer program workgroup meetings and meetings that involved peers, research team members, and CBOs provided insight into how peers viewed residents and CBOs, the relationship between residents and CBOs, and the peers' role as bridges connecting CBOs and residents.

In speaking about their relationships with other community residents in their interviews, peers noted that many residents saw them as resources for materials such as condoms and other safer sex

supplies ("A lot of the guys and the females see me as a sex educator woman or the woman that gives out condoms"). In addition, though, peers talked about how WHP and the peer initiative allowed them to strengthen their ties to neighbors ("I feel I've gotten closer to a lot of people here in my community"). A number of the peers commented that they felt their neighbors appreciated their work in the community. As one peer said: "A lot of people, they see me, and they're like, 'Oh, you're doing a lot for the community. I'm proud of you.'"

Peers pointed to their experience and to that of their neighbors with Women's Health Services as an example of how their relationship to CBOs had improved. They identified repeated and sustained contact between peers and WHS staff and the continued presence of WHS at community health events as key reasons behind this improvement. As one peer health advocate reflected:

So a lot of people don't trust a lot of organizations. But we keep working. I think they [residents] get a little bit more comfortable if they see the person face-to-face instead of just going there [to the CBOs' location].

However, peers also talked about instances in which fellow residents cautioned them against further involvement in WHP. As one peer shared: "And then I'll hear people saying things like, 'Oh, they got you doing this?' or, 'They got you,' like trying to downgrade what I'm doing." These negative reactions from residents pointed to challenges facing WHP and the peer initiative as they strived to integrate CBOs and residents in the indigenous storytelling network.

Residents' distrust of local health and human service organizations emerged as the most common challenge cited. The first source of this distrust seemed to lie in the relationship many residents of this disadvantaged community had with the local social services office in their neighborhood ("they will tell you to go to this place and this place and then you don't go because you feel like you're going to get rejected"). The second source of distrust, though, was tied to the small size of the community and the fear that sensitive, personal health-related information may not be kept confidential. As one peer health advocate shared:

You have people that work there [at CBOs] that grew up in this area, know most of the people in this area. So, no matter what the laws or no matter how many release forms you sign for confidentiality, that person knows that their business is not going to be confidential.

Both sources of distrust between CBOs and residents that peers identified are examples of how the community's communication action context (in this case, the physical layout of the community, socio-demographics, and psychological features) constrained communication between micro- and meso-level community actors.

Residents' stories about the peer initiative. Interviews with residents following community health education events included extensive storytelling about the peers. These stories spoke to several roles the peers performed. Residents saw them as important sources of information about WHP (their role

is to “communicate with the community about what goes on with your project”), as resources on issues of sexual and reproductive health (“they gave me a lot of good information about practicing safe sex, and about the birth control methods”; “if you have any questions, they’ll answer them for you”), and as agents that connected residents to local health-care providers (“somebody had asked about seeing a doctor and if there was anyone in [the area] that they could go to. And they were giving, like, the names or whatever and the facilities”). Some residents even acknowledged peers as their sole source of information on reproductive health issues other than the Internet, indicating that peers were trusted sources of health information because they had received some formal training in reproductive health issues (“I would have to go to with the peers because they’re more informative. . . . The peers, because they had the training, they’re a little bit more knowledgeable with what they are talking about”).

In their interviews, residents also identified peers as an ear that listened to their concerns (“[peers] let me know if I needed anybody to talk to or anything along, like, women’s stuff that I always can talk to them”). Being willing to listen to residents’ concerns was one way peers built relationships with neighbors. In many instances, however, their ability to successfully connect to neighbors depended heavily on their preexisting interpersonal ties in the community. Several residents recognized this in their interviews (“it’s easier for people to talk to ‘em . . . we know them, you know”; “I talk more to [peer’s name] than any of them. Like, because we’re around the same age. So I talk more to her . . . but I know them, pretty much all of ‘em”).

Residents’ stories confirmed the challenges peers identified earlier in performing their roles. Their narratives spoke to challenges tied to living in a small urban community, most notably concerns over privacy (Golden, 2014). Many residents said they would talk to peers about health issues, yet several indicated that they might hesitate to talk about more sensitive issues:

[T]hose are private issues when it comes to sex. And women are so embarrassed when, nobody wants to know you have some kind of STD or whatever. So that’s the privacy that you go to learn that, they [the peers] have to earn the trust. (Community event participant/resident)

CBO stories about the peer initiative. CBOs expressed support, even excitement, about the peer initiative (e.g., “[it] is one of the greatest projects we’ve ever had in the area”). As many had attended a number of community events and had had the opportunity to interact with peers, CBOs commended the peers for “taking ownership” of the peer program and commented on the peers’ “sense of pride” in their work, but also on their knowledge. All CBO staff who were interviewed emphasized the significance of the initiative as a way of linking them to the community (“Working with peers is great because you have that direct line into the community that you’re targeting”) and of facilitating the development of residents’ trust in organizations (“It’s people that they trust. It’s not people from the outside coming in and trying to give you information . . . they already had that little bit of trust there that they can build on.”) CBOs attributed increased attendance at events and increased use of reproductive health-care services to the peers’ work: “We initially faced . . . lower participation numbers, maybe not as much follow-through with appointments. I think a lot of those challenges have been diminished or even eliminated because the push to do this is coming from their [i.e., residents’] community.”

Discussion

The focus of our data analyses has been on elucidating the processes through which WHP achieved successes, but also on the challenges it encountered along the way. Therefore, we next discuss implications of our findings for community-based health interventions and for communication infrastructure theory as a framework that can guide such interventions.

Existing CIT research supports the notion that a stronger community storytelling network (STN) contributes to the well-being of residents because the more connected they are to their neighbors, local community organizations, and local media, the more likely they are to be knowledgeable about chronic diseases (Kim et al., 2011) and to seek out health information (Kim & Kang, 2006). Prior work also suggests ways to diagnose the extent to which a community's STN is integrated (e.g., Kim & Ball-Rokeach, 2006; Wilkin & Ball-Rokeach, 2011), while a small number of studies document how CIT can be used as a framework for developing health interventions (e.g., Wilkin et al., 2011). Our analysis supports this earlier research but also enables us to elaborate CIT in three ways: (a) by delineating an additional level of community actors in the structure of the STN and how these actors function in enhancing network integration; (b) by offering an alternative methodology for validating the importance of storytelling in communities and demonstrating how storytelling can be strategically stimulated; and (c) by identifying a challenge posed by the communication action context (CAC) with a more complex understanding of communication hotspots and comfort zones.

Moreover, we argue that our findings could inform process evaluation in future CBPR projects, particularly in interventions aimed at eliminating health disparities and increasing the health-promotion capacity of a community.

Interstitial and Liminal Actors as Agents of Storytelling Network Integration

The first major finding is that links between community actors can be strengthened (or communication disjunctures repaired) by developing community actors who function at a level we term "interstitial." As the dictionary definition of "interstice" suggests, an interstitial actor occupies "a space that intervenes between things" (Merriam-Webster, 2013), functioning at a level in between the micro and meso levels delineated in prior CIT research. In the WHP, the research team itself and, later, the peer health advocate initiative functioned at this level. Further, we theorize that interstitial actors may perform their bridging activities while functioning primarily as meso-level actors, as in the case of the WHP research team, or as what we term "liminal" actors, as in the case of the peer advocates group. "Liminal" means "relating to, or being an intermediate state, phase, or condition" (Merriam-Webster, 2013). Therefore, liminal interstitial actors in an STN have characteristics of the actors on both sides of the interstice, the micro and meso levels. As shown in our analysis of the roles peer health advocates performed in this health intervention, liminal interstitial actors can be particularly effective as STN bridging agents. Figure 1 summarizes network integration over WHP's life through the interventions of interstitial actors.

WHP as interstitial STN actor. The research team became the first building block in a bridge between individual and organizational community actors and effectively functioned as an interstitial STN actor as a university-sponsored research project with primarily meso-level characteristics. To accomplish this, the research team had to first establish strong connections of its own to residents and CBOs, earn their trust, and achieve buy-in to the WHP's goals. WHP succeeded in these efforts by (a) integrating itself into the community's CAC (e.g., by establishing a field office), (b) creating, through community health events, opportunities for CBOs and residents to interact with one another in communication hotspots (such as the community room where the events took place), and (c) instigating and encouraging stories that centered around WHP's goals, but also stories about the community stakeholders involved in the project. The production of these stories was critical for success because, as Kim and Ball-Rokeach (2006) note, "in an ideal community, meso- and micro-level storytellers form an integrated network where each storyteller stimulates the others to talk about the local community" (p. 181).

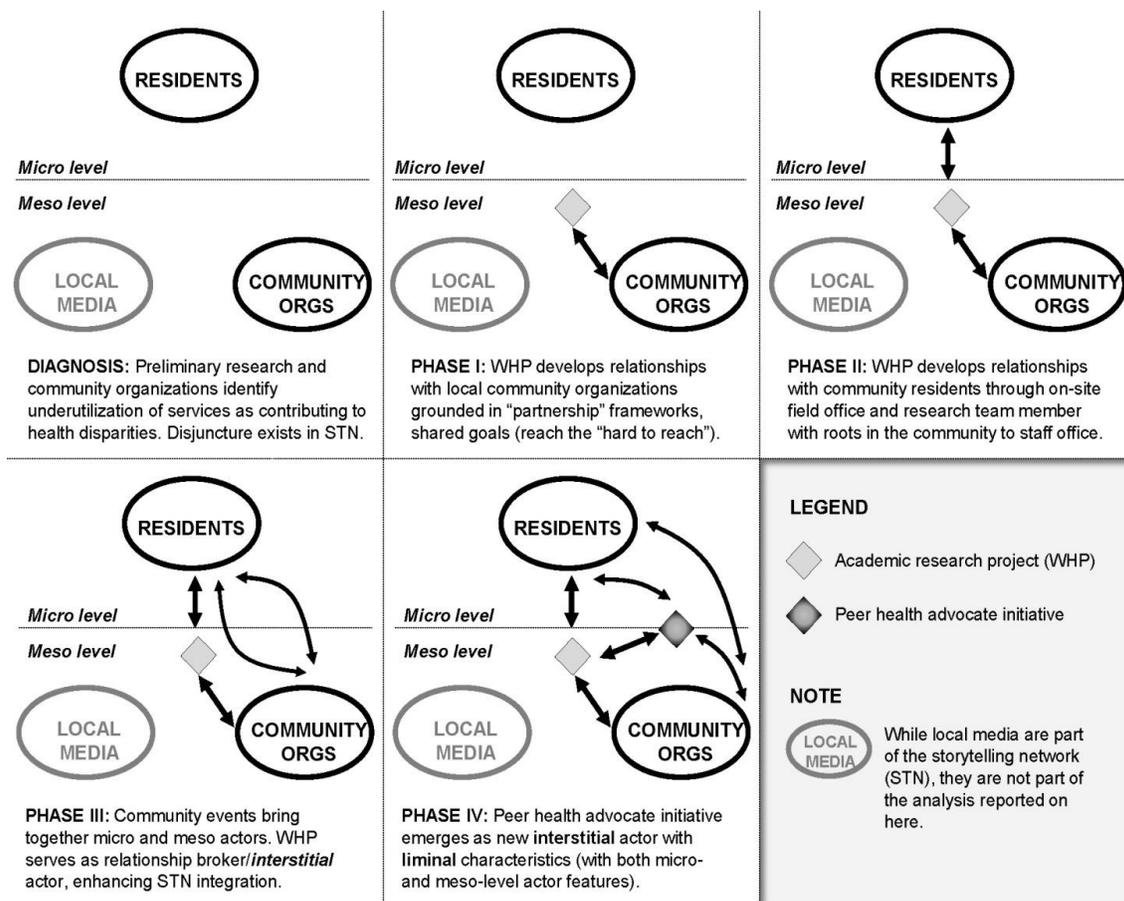


Figure 1. Progression of storytelling network integration, through the interventions of interstitial actors.

The peer initiative as interstitial and liminal STN actor. The peer health advocate initiative emerged as an additional bridge between residents and CBOs. The peer initiative would not have been created, however, in the absence of the micro- and meso-level links that WHP developed during earlier phases of the intervention. Our findings speak to how peers connected to both residents and CBOs and to how they effectively brokered relationships between these micro- and meso-level actors. In doing so, the peer group, like WHP itself, acted as an interstitial STN actor.

In addition, though, we conceive of the peer group as operating at a liminal level in the indigenous STN, with qualities of both micro-level and meso-level actors. The group comprised community residents with friends and family networks in the community (micro level), but at the same time, these residents were members of an organized initiative with a recognizable identity and an official point of contact (the community outreach associate and the director of the research project, located in an office in the neighborhood with a dedicated phone number).

As gleaned from our findings, the peer group's success in connecting residents with CBOs and the resources these organizations offered lay, first of all, in that residents saw them as trusted neighbors serving the community in several ways (e.g., as health information sources, resources for getting safer sex supplies). Second, the peers persuaded the CBOs that they were reliable, trustworthy, knowledgeable community allies. In this study, we document the process of creating effective interstitial actors where there were none. Our findings could guide future intervention and process-evaluation research in communities facing similar health challenges to develop or identify and leverage the power of such interstitial community actors.

Stories of the Storytelling Network (STN)

A second major finding of this study, consistent with the original formulation of communication infrastructure theory (Ball-Rokeach et al., 2001), is that the ties that bind STN actors are constructed (and often repaired) through narratives created, exchanged, and edited in the process of everyday community life. In our study, one of the most consequential things interstitial actors did was to generate stories and encourage storytelling about themselves, each other, and the community. In our intervention, we provide evidence of how stories of disconnection told across micro and meso community levels were countered (and replaced) by stories of connectedness. Tracing and documenting such changes could produce valuable evidence for process evaluations of intervention research with similar goals. Our primary way of documenting these stories was through recorded interviews with residents, peers, and CBO staff members. We argue, however, that these stories are more than simply artifacts of the interview situation, produced in response to interviewer prompts. We understand the interview as a method of data generation and collection to be an "active," "interactional, interpretive activity" (Holstein & Gubrium, 2004, p. 140). The interactional, interpretive activity that takes place during the interview is understood as a process not apart from other sense-making activities of participants, but as another occasion to display "the procedures and resources used to apprehend, organize, and represent reality" (Holstein & Gubrium, 2004, p. 149). Therefore, the stories offered by interviewees reflect community actors' efforts to make sense of situations that they found themselves in prior to the interview (e.g., when residents and CBOs interacted in the course of a community event organized by WHP, when project staff interacted with

residents in community communication hotspots, when residents interacted with peers, or when WHP staff interacted with CBOs at events or CAB meetings).

Our choice to base our analyses on actual stories told by micro-, interstitial-, and meso-level actors is a promising alternative methodological approach to validate and elaborate CIT, which capitalizes on the notion of storytelling. Few prior studies based on CIT (e.g., Katz, 2007), have specifically focused on analyses of stories told by community stakeholders and analyses that have used stories about communities more generally. The stories we collected and analyzed were particularly valuable because the intervention's goals created a context within which stories were created. Stories spoke specifically to reproductive health issues and the community—that is, its residents, its organizations and their relationships with residents, its health information resources and health services, and, of course, the WHP. The intervention as context (or metaframe) allowed the research team to better understand how stories about issues, relationships, and variables tied to the WHP's objectives could be stimulated and how they changed over time. CBOs and peer outreach assistants, for example, generated stories in the process of making sense of the nature and goals of the intervention, in defining their roles and those of other stakeholders involved in it. This was an ongoing process.

Challenges of the Communication Action Context (CAC)

On balance, the positive stories generated and shared outnumbered the negative ones. However, there were also challenges that hindered STN integration, challenges that we conceptualize as tensions between the enabling and constraining dimensions of the local CAC. The relative absence of communication hotspots and comfort zones in the community emerged as a significant constraint. While the community included multiple low-income housing complexes, only two had community rooms where events could be held; moreover, one complex's community room might constitute a communication hotspot for its tenants, but not for tenants of even those buildings nearby.

In addition, the fact that residents, peers, and CBOs welcomed the establishment of a space like the WHP's field office, which over time became a comfort zone from residents' perspective, suggests that future interventions could benefit greatly from identifying and creating spaces where community members can physically come together to discuss shared concerns and where CBOs can come into communities and meet residents on their own ground. However, given the potential for hyperlocalization of communication hotspots, as we encountered in this study, interventions must be sensitive to the implications of the choices they make regarding locations.

Conclusion

The stories told by community-based organizations (CBOs) and residents about their involvement in WHP speak to the capacity of research teams to perform as bridging agents among community actors; they highlight the significance of a peer health advocate program—co-constructed by residents, CBOs, and researchers—as a critical community health resource for addressing reproductive health disparities; and they articulate challenges that hinder the capacity of a community to achieve health goals. In the future, research adopting the conceptual framework we lay out in this study and a research design in which

communication or storytelling is a critical component may not only further extend CIT but also better position communication scholars to contribute to research focused on addressing critical health disparities in the United States and beyond.

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