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COMMUNITY-BASED HEALTH INTERVENTIONS

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Community-based interventions encompass a range of models reflecting different conceptions of both the intervention target and the degree of community ownership and participation. In general, four conceptions of community-based interventions emerge from the public health and health communication literature: community as setting, community as target, community as resource, and community as agent (McLeroy et al., 2003). The *community as setting* approach treats community as a place or a space where the intervention is implemented. Interventions in this category target change in community members' health behaviors as a means of reducing the population's risk of disease. *The community as target* strategy aims to create healthy community environments through broad structural changes in public policy and/or modifications to the physical, economic, or social environment. The *community as resource* model is aimed at mobilizing a community's internal resources or assets across community organizations and sectors to strategically prioritize and promote public health goals. Lastly, the *community as agent* conception is focused on building and supporting the natural adaptive, supportive, and developmental capacities of communities.

The primary focus of this chapter is on the application of health communication strategies and tools to build and support community capacities to respond to or otherwise cope with public health challenges. Health communication campaigns are routinely employed to promote individual health behavior change in an effort to address health disparities, and therefore they naturally complement interventions that treat community as a setting. Campaigns also have an important role in drawing community attention to social determinants of health and advocating for collective action (Niederdeppe et al., 2008; see also Chapter 23, this volume). At the same time, there has been a growing interest from health communication scholars in the role of communication to support community capacity as a crucial mediating variable between health promotion interventions and population-level health outcomes (Viswanath & Emmons, 2006; Wilkin, 2013; Yanovitzky & Weber, 2019). This approach to health communication is better aligned with interventions that view communities as a target, resource, or agent and deserves more systematic treatment in the health communication literature. We begin with a brief overview of the types of interventions that have been implemented to close gaps in communities' access to and/or utilization of critical health information. We then move to do the same for communication capacity-building interventions, which are interventions that seek to build, leverage, or enhance a community's communication infrastructure as a means to improving the flow and exchange of critical health information. Given space limitations, our goal is to showcase theoretical approaches and intervention models that drive this work and assess their potential to advance health communication scholarship and practice.

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Health Information Technology (HIT) Interventions

The barriers that a particular social group or a community experiences in attempts to access critical health information are an important determinant of differential health outcomes (Viswanath & Ackerson, 2011). Information-rich environments afford easy access to an abundance of information that can be used to improve community preparedness, response, and recovery from shocks and stressors. Information-poor environments, by contrast, present barriers to accessing critical health information; these barriers then may hinder the community's ability to respond effectively to challenges (Goulding, 2001). The existence of systemic inequity in the diversity, quality, access, and credibility of health information available across different groups is well documented in the literature (Friedland et al., 2012). Our focus in this chapter is on interventions that target improvements in access to health information.

Theoretical Foundations and Approach

Health information technology (HIT) has significant potential to engage individuals in managing their health by providing tools to track, manage, and interpret personal health metrics. Such tools can help to overcome barriers to the acquisition and use of critical health information by empowering individuals to ask questions, communicate concerns, identify and assess alternatives, reflect on progress, and alter their health behavior. However, the reach of HIT among underserved groups remains limited. Interventions that seek to improve community access to and/or utilization of health information draw upon a range of theories and frameworks to develop and test models that explain information behavior (Gray & Sockolow, 2016).

Community engagement and participatory design (PD) are increasingly recognized as the foundation of effective HIT interventions, particularly those that target improvements in access to and use of health information by underserved groups (Unertl et al., 2015). For more than 20 years, community-based participatory research (CBPR) has been used to develop and implement HIT interventions, in part because this approach has proven to be a better fit with efforts to address health inequities with direct input from the community (Lucero et al., 2016). The CBPR approach is well suited for guiding these types of interventions because it calls for engagement with community members at each stage of the research process. This engagement includes the identification and refinement of the focus of the intervention along with content creation, intervention development, and initial implementation; research design and data analysis; intervention dissemination on a broader scale; and policy advocacy and creation (Belone et al., 2014). Community input is essential in order to select, refine, and engage in culturally centered methods (Dutta, 2007). Engaged research such as CBPR better positions the investigation for describing and addressing the various barriers known to influence health outcomes (e.g., social determinants of health) that define health inequity across various populations and clinical conditions. This approach continues to be refined to clearly articulate the linkages between specific CBPR processes and outcomes (Hicks et al., 2012). In general, CBPR and similar approaches (e.g., user-centered design and PD) bring a number of important benefits to the development and implementation of HIT interventions: more relevant research, wider impact, better fit between interventions and target beneficiaries, more effective recruitment and retention of diverse populations, improved internal validity, more rapid translation of research into action, and further development of people (e.g., community health workers transitioning to higher-level research positions; Unertl et al., 2015).

Examples of HIT Interventions

A useful way to classify HIT interventions is by functionality (see Finkelstein et al., 2012), and one such function is promoting patient-centered care. For example, care management tools such as electronic health records and fitness tracking apps are designed to guide and support patients' self-care;

telehealth and telemedicine are intended to improve timely access to healthcare providers for patients who have limited access to care; patient portals can improve the coordination of care and the delivery of patient education resources; and shared decision-making tools are developed to facilitate patient engagement and participatory medical decision-making.

HIT interventions that are targeted to communities typically have a built-in community engagement component. Magasi and colleagues (2019), for instance, designed a community-informed mHealth (i.e., mobile health) tool for peer support and information sharing to address the needs of people with cancer and disabilities. By engaging this group, they created a tool (the WeCanConnect app) that is designed to leverage existing strengths within this community and promote connectivity and emotional support. However, community engagement can be expanded to include community members beyond patients. For example, in research by Senteio (2019), a group of older adult African Americans with diabetes and young adults connected to them via familial or naturally occurring social networks partnered with researchers on the design of a self-management health education intervention that leveraged intergenerational information exchange to overcome digital literacy barriers that many patients in this group experience.

Community Norms-Based Health Communication Interventions

A second group of community-based health communication interventions is focused on influencing community culture. Community culture evolves from community members' shared experiences, values, and aspirations. As such, it serves as a powerful prism through which group or community members make sense of health information and form normative expectations regarding their personal behavior or conduct. The primary objective of this type of community-based intervention is to influence or otherwise leverage community culture to promote individual and population health.

Theoretical Foundations and Approach

Culture is frequently used as an audience segmentation variable in health communication interventions, specifically for targeting and tailoring health information (Kreuter & McClure, 2004). Targeting involves the delivery of health information that is relevant and responsive to the needs of a particular cultural group. Kreuter et al. (1999) defined tailoring as "any combination of information or change strategies intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and have been derived from an individual assessment" (p. 277). Some—but certainly not many—of these interventions draw on community members and their experience(s) in developing the intervention/messages. The absence of community participation in the design of such interventions can undermine message acceptance, in part due to culturally driven suspicion and mistrust (Benkert et al., 2019).

Normative influence offers another mechanism for integrating health communication interventions within community culture. Social norms marketing campaigns are a familiar example of this approach (DeJong, 2010). They are based on the premise that individuals misperceive (i.e., under- or overestimate) their group or community norms regarding a certain health behavior or practice and that correcting these misperceptions puts pressure on individuals to align their behavior with the true group norms. Two types of norms, in particular, appear to be relevant in this context: *injunctive norms*, or the perceived approval of a behavior by others, and *descriptive norms*, or perceptions regarding others' engagement in behaviors (Lapinski & Rimal, 2005). An alternative strategy to correcting misperceptions is to make a particular norm more salient—thereby temporarily increasing its accessibility from memory—to increase the influence of this norm on behavior (Rhodes & Ewoldsen, 2009). Neither strategy, however, appears to be capable of producing a community-wide change in behavior (Dempsey et al., 2018).

In addition to culture-based tailoring and normative approaches, inoculation-based strategies present a third venue of community norm-focused interventions. The primary objective of these strategies is to build individual and community resilience to potentially harmful cultural influences that are propagated via advertising, social media, and other similar channels. The point is to influence group or community members to collectively reject a potentially harmful practice or norm. Media literacy-based interventions are familiar examples of this strategy (Austin & Pinkleton, 2016; Banerjee & Greene, 2007). Group members (often youth) are first educated (forewarned) about the manipulative practices employed in advertising of substances such as alcohol and tobacco and then provided with strategies or skills to resist their influence. Similar strategies are employed to decrease the spread and harmful effects of health misinformation and disinformation within communities, for example, by building community members' capacity to detect and delete information from unverified sources (Swire-Thompson & Lazer, 2020).

Examples of Community-Based Interventions

We provide three examples of substance use prevention interventions that seek to involve community members in a central way in their design and implementation. The examples are selected because of the multiple phases or repetitions of interaction with the target audience members, which is optimal to developing effective community-based interventions (Senteio, 2019). The first two interventions (*YMD* and REAL media) function by increasing information literacy and building skills to resist influence from substance use advertising. The last intervention (kiR) focuses on building resistance to substance use offers as key to improving individual- and community-level outcomes.

Youth Message Development

Youth Message Development (*YMD*; Greene et al., 2016) is a face-to-face, active involvement media literacy intervention designed to prevent alcohol use among early high-school-aged youth. The formative research to adapt the *YMD* curriculum included three distinct components across two years, conducted in partnership with a youth leadership program in one state and public schools in another state. First, a post-test-only pilot study compared two versions of the preliminary curriculum. One version used a strategy that analyzed and critiqued pro- and anti-alcohol ads; the other version also analyzed and critiqued ads but then engaged youth in developing plans to create an anti-alcohol poster. Program developers obtained written and oral feedback from both participating students and adults who accompanied students to the program and viewed the intervention. The second component of development included interviews with a separate cohort of high school students to assist with selection of advertisements and other curriculum refinements. The third component consisted of focus groups with an additional cohort of high school students and teachers to solicit feedback on a revised version of the curriculum and related materials (see Greene et al., 2016). The resulting test of *YMD* curriculum produced desired outcomes three to four months later, such as youth reporting talking more about the curriculum and media literacy with friends and family and youth reporting greater self-efficacy to develop counter-arguments to advertisements (Banerjee et al., 2015). The intervention was designated "effective" and listed in the Substance Abuse and Mental Health Services Administration (SAMHSA) National Registry of Evidence-Based Programs and Practices (NREPP) review. Although the *YMD* program adaptation was iterative and engaged multiple stakeholders in the process, the researchers did not work collaboratively with the community in terms of program development or identification of the problem/focus. The program also did not lead to the creation of ongoing and sustainable community relationships.

REAL Media

REAL media, an extended e-learning version of *YMD*, was developed and adapted iteratively with a national community partner, 4-H (head, heart, hands, and health), one of the largest positive youth development programs in the United States. REAL media is grounded in the theory of active involvement (TAI; Greene, 2013; Greene & Hecht, 2013; Greene et al., 2017) and focuses on individual engagement with the intervention itself (see Greene et al., 2021; Ray et al., 2020). The program targeting strategy included some superficial features (logos, 4-H images), but the examples, format, and features were developed in conjunction with 4-H partners across two states. Participants in the development (see Ray et al., 2019) included 4-H staff, 4-H club leaders, and 4-H club members in the target age range. The iterative nature included rounds of interviews, focus groups, and usability testing such that the content was modified (but not developed, as would be ideal) in phases with the target 4-H youth (age 13–16). The draft online program was then piloted by target-age 4-H club members (and several 4-H leaders) for usability feedback to further refine the intervention and ensure maximal community engagement. There are opportunities within such a program for tailoring, such as "gamifying" the program with individual scores on activities, but the limited tailoring in REAL media included choices of program paths (optional depth) and feedback on activities, as well as level-ending "challenges." One test of REAL media across nine U.S. states indicated that use of the program improved youth self-efficacy and substance use norms (Greene et al., 2020), and the project developed a continuing relationship (more than seven years to date) with 4-H at both state and national levels, including multiple publications with a 4-H leader.

Keepin' it REAL

Keepin' it REAL (kiR) is a school-based substance use prevention intervention that has been iteratively refined across a number of years. The project now spans decades and is disseminated worldwide with multiple variations, and the communities involved in its development include schools/staff and youth in multiple states, as well as Drug Abuse Resistance Education (D.A.R.E.) as a partner. The kiR curriculum is founded on principles of "from kids through kids to kids" (Kreiger et al., 2013; Miller-Day & Hecht, 2013). This perspective argues that stories resonate best with and have a greater impact on people if they arise from their experiences (Lee et al., 2011; Miller-Day & Hecht, 2013). In the context of substance use prevention, for example, if the story of drugs is one of users being mature, adventurous, and popular (Miller-Day et al., 2000), the goal may be to provide positive counter-narratives about nonuse. The intervention social influence strategy was predicated on teaching "resistance skills" or strategies for resisting negative peer influence (Miller-Rassulo et al., 2000) to promote competent resistance without implying that "everyone is doing it" (i.e., the risky behavior) while also conferring anti-drug norms. The involvement of members of the target audience is vital to this process in both message generation (e.g., basing messages on narratives) and message production (i.e., having kids create the messages). Ultimately, these rich narratives produced resistance strategies that were labeled REAL (refuse, explain, avoid, and leave), and these strategy categories have been replicated across age, ethnicity, gender, and regional differences (Colby et al., 2013; Miller-Day et al., 2013).

Communication Capacity-Building Interventions

Improving community members' access to critical health information alone rarely leads to population-level improvements unless it can stimulate social interactions among community members that lead to collective action (Fox, 2011). For this reason, the communication infrastructure of a community provides a crucial bridge between knowledge acquisition and action. The communication

infrastructure refers to the formal and informal communication channels and networks that members of a social group or community utilize to interact with one another and to exchange and discuss health information (Goulbourne & Yanovitzky, 2021). In general, a community's communication infrastructure serves three important functions: (a) enabling all members of the community to access, share, and exchange timely, relevant, and accurate health information, (b) facilitating community members' meaningful engagement with health information via social interactions, and (c) promoting greater social integration among community members that builds collective efficacy and capacity to engage in collective action. Communities with a robust communication infrastructure are more likely to recognize real problems, develop solutions, and include stakeholders who partner with the research team and coordinate with the team on the application and evaluation of those solutions (Hossain & Kuti, 2010; Wilkin, 2013).

Theoretical Foundations and Approach

Communication capacity-building interventions have a rich history in development communication (Hornik, 1993), with a particular focus on building or supporting communication platforms for the effective dissemination of health information via strategies such as diffusion, social marketing, and entertainment-education (Melkote, 2003). Although the primary focus of these interventions is on improving population health by targeting individual behavior change, recent theoretical contributions such as the communication infrastructure theory (Kim et al., 2006; Wilkin, 2013), the structural influence model of communication (Ackerson & Viswanath, 2009; Viswanath & Emmons, 2006), and the communication theory of knowledge brokering (Yanovitzky & Weber, 2019) are focused on building or otherwise leveraging the community's communication infrastructure as a means for improving knowledge flow and mobilizing knowledge into action.

The communication infrastructure theory (Kim et al., 2006) proposes that neighborhoods have unique multilevel communication infrastructures that influence the capacity for resident health. These communication structures, known in the theory as storytelling networks, consist of community organizations, geo-ethnic media (media that target a particular geographical region or cultural group), and residents (Kim et al., 2006). Neighborhood factors that can facilitate or impede communication, such as spaces where people can meet and discuss issues facing the community, constitute the communication action context. Both people as individuals and the community as a whole are more likely to experience positive health outcomes when the communication action context facilitates a strong storytelling network. The theory has two important practical implications for community capacity-building efforts (Wilkin, 2013). First, mapping the storytelling network in a community can inform the implementation of more targeted strategies to reach and engage residents, particularly groups that are not already reached through use of regular channels. Second, creating spaces and opportunities for residents and community organizations to exchange information and discuss responses to health issues they face can increase levels of collective efficacy and civic engagement needed to produce effective response to health challenges.

The structural influence model of communication (Viswanath & Emmons, 2006) posits that communication inequalities mediate, at least partially, the effect of social determinants and health outcomes. Communication inequalities are defined as "differences in the generation, manipulation, and distribution of information among social groups; and differences in (a) access and use, (b) attention, (c) retention, and (d) capacity to act on relevant information among individuals" (Viswanath & Emmons, 2006, p. 242). According to this model, structural antecedents such as socioeconomic status and community resources influence both the information environment and the resources that are available for group consumption, therefore disproportionally disadvantaging some communities and groups and benefiting others (Viswanath & Ackerson, 2011). Communication and information inequalities can be addressed through interventions that build the capacity of socially disadvantaged

communities and groups to access and comprehend critical health information while at the same time ensuring that the information provided is less general or generic and more reflective of the group's experience with a health issue or stressor.

Another theoretical contribution is focused on building the capacity of community intermediaries, or knowledge brokers, to improve the flow of health information to and among individuals, groups, and community institutions. According to the communication theory of knowledge brokering (Yanovitzky & Weber, 2019), knowledge brokers such as local news outlets and community-based organizations have a crucial role in improving knowledge flow by performing five crucial functions: *awareness* (drawing attention to relevant health information), *accessibility* (making health information more accessible and comprehensible to users), *engagement* (connecting health information to the unique problems and challenges faced by the community), *linkage* (connecting and coordinating information dissemination activities in the community), and *mobilization* (pushing for specific individual and collective actions based on available health information). Building and supporting the capacity of intermediaries to perform these five crucial functions—whether through communication skills training, technical assistance, or collaboration tools—is therefore expected to improve individual and community-level knowledge acquisition, transfer, and mobilization, which in turn can lead to improved health outcomes for individuals, groups, and communities.

These theories are centered on the principles of community participation, empowerment, and action, but they do not explicitly theorize about the optimal scope and nature of community involvement in communication capacity building. That is, they intentionally avoid the common distinction between interventions that treat community participation as a means and those that treat community participation as an end (Melkote, 2003) in favor of a looser definition of community participation as a function of community capacity and readiness to participate. Moreover, they do not prescribe a single strategy for building communication capacity but rather envision a range of possible interventions. These interventions range from building a capacity that does not already exist in the community to leveraging an existing capacity to supporting the sustainability of crucial capacities. Capacity building, leveraging, and/or supporting interventions may also be tailored to the unique circumstances of each community. For this reason, we chose to organize examples of communication capacity-building interventions according to goal (building, leveraging, or augmenting communication capacity), recognizing that the level of community participation in the design and implementation of these interventions varies as a function of intervention philosophy and community circumstances.

Interventions That Build Community Communication Capacity

Interventions that fall into this category typically seek ways or mechanisms to build community capacity to produce and disseminate hyperlocal health information, or information that is tailored to a well-defined community and is responsive to the concerns and information needs of community members (Napoli et al., 2017). One class of interventions in this category aims to build the capacity of local communities to map and assess information needs, as well as identify optimal channels for reaching diverse groups (see Wilkin et al., 2011). For example, the Racial and Ethnic Approaches to Community Health (REACH) 2010: Charleston and Georgetown Diabetes Coalition program involved a partnership among community organizations, public libraries, and community health advisors who collected and analyzed survey and focus group data collected from Black community members to identify communication needs and assets. The group then formulated an action plan to increase the dissemination of diabetes information to this population (Carlson et al., 2006).

A second type of intervention in this category is focused on the production of hyperlocal information that is not available from other sources. For example, researchers created and operated Ozioma,

a cancer information news service that compiled community- and race-specific cancer news releases that were disseminated to Black weekly newspapers (Caburnay et al., 2012). The National Cancer Institute subsequently created the Multicultural Media Outreach program to provide local ethnic media outlets with tailored, ready-to-use evidence-based cancer education information for widespread community dissemination (Alexander et al., 2013).

A third general strategy is to build the capacity of key intermediaries in the community. Some local news outlets, for example, are important and trusted sources of hyperlocal health information in many communities (Napoli et al., 2017). Many local journalists lack health reporting skills; providing them with relevant training about how to acquire, evaluate, and interpret health information for lay audiences can improve the quality and relevance of health information that is circulating in communities (Friedman et al., 2014). Unfortunately, systematic disinvestments in local news (Walker, 2019) have devastated the local news media market and created many news deserts, particularly within rural areas (Grieco, 2019). Although this situation calls for structural interventions such as the creation of a state-funded nonprofit entity in New Jersey (the Civic Information Consortium) to fund local news organizations (Nossel & Vilk, 2020), interventions in this category may seek to improve the community's capacity to advocate for such resources and public investments (Kim & Ball-Rokeach, 2006).

Interventions That Leverage Existing Community Communication Capacity

Interventions in this category seek to leverage, rather than build, existing communication capacity within communities. Most familiar are interventions that seek to leverage existing spaces and events in the community as alternative channels for communicating health information, particularly for populations that are not effectively reached by mainstream channels or that have limited contact with the healthcare system. Public libraries (Whitney et al., 2017), barbershops and beauty salons (Linnan et al., 2014), and places of worship (Campbell et al., 2007) are all examples of alternative channels that have been utilized to this end. In addition to improving health communication outreach, the opportunity to be in regular contact with other community members that frequent these spaces is essential for building communicative social capital (i.e., access to information and knowledge that is available through community networks), community integration, and collective efficacy to cope with health stressors (Matsaganis & Wilkin, 2015).

A second class of interventions is focused on stimulating community dialogue regarding health issues as a means to promote broad community engagement, inclusiveness, and diversity of perspectives that can inform collective decisions regarding local solutions to public health challenges. This form of community dialogue is essential to improving the flow and exchange of health information in the community but is also necessary for cultivating collective trust and building collective efficacy to respond to challenges. For example, opioid town hall meetings provide officials and public health experts who influence policy an opportunity not only to educate residents about the opioid addiction problem in their community and what is being done to prevent it but also to listen and learn firsthand about residents' concerns and information needs (Bejarano, 2019). Community dialogue can also be supported by leveraging community storytellers, such as geo-ethnic media and local activists, to produce and share authentic stories that become the topic of conversations in the community (Brown et al., 2018), therefore keeping residents educated and engaged regarding health challenges that are affecting their community.

Another class of interventions is focused on improving linkages among sectors and organizations in the community to leverage their pooled resources and existing relationships with residents to better coordinate dissemination efforts and improve community outreach. Many such interventions are focused on building partnerships within the community to provide essential

resources and information to diverse groups of residents, particularly in times of public health emergencies. For example, the Emergency Community Health Outreach (ECHO) network in Minnesota has established a unique partnership with a public television station to regularly broadcast short programs presented by representatives from ethnic refugee and immigrant groups in the state about a range of topics such as family disaster preparedness plans and crisis counseling (Andrulis et al., 2007).

Interventions That Augment Community Communication Capacity

Interventions in this category seek to enhance a community communication capacity by introducing and institutionalizing evidence-based practices. To be efficient and effective, community communicators and storytellers can benefit from research-based insights, whether from communication science or public health, to make informed choices regarding communication strategy: what to communicate, to whom, how, when, and where. The idea is not to simply expose community communicators and storytellers to general guidelines or best practices of communicating health information effectively but rather to build their capacity to routinely collect and analyze data that can inform local strategic communication decisions and allow for a coordinated communication approach, particularly within nearly impossible time constraints. This type of intervention is most common in the context of efforts to build well-integrated systems of emergency preparedness because effective communication before, during, and after disasters to culturally diverse audiences of wide-ranging health literacy is a critical component of any preparedness effort (Institute of Medicine & National Research Council, 2005).

Building communicators' capacity to effectively present research findings through data visualization tools is an example of one type of intervention that is designed to augment existing community communication capacity. As the use of national and local surveillance systems to track population health indicators is increasing, there is an opportunity to compile and share such hyperlocal information with members of the community to promote accurate assessment of risks. Tools such as infographics and interactive data dashboards improve the ability to communicate this information to diverse groups of audiences. For example, the Connect2HealthFCC platform (www.fcc.gov/health/maps) allows communicators to generate customized maps displaying broadband access, adoption, and speed paired with various health measures (e.g., obesity, diabetes, and physician access) in every U.S. state and county, including urban and rural areas. Maps of this type can be used not only to facilitate residents' comprehension of health risks but also to support policy advocacy efforts.

A similar type of intervention involves the creation of surveillance (infodemiology) systems to track changes in residents' access, comprehension, and use of health information. The goal is to identify gaps in resident awareness of, access to, and engagement with health information, as well as to identify opportunities to improve communication. In principle, infodemiology, which is akin to tracking and monitoring the epidemiology of diseases, conditions, and other health-related factors, aims to track and monitor information needs of diverse groups, assess the degree to which available information matches their needs and ability to process health information, and generate insights regarding ways to improve outreach and engagement (Eysenbach, 2009).

Finally, research-community partnerships offer another venue for further building the capacity of local officials, public health professionals, and community organizations to communicate health information effectively through evidence-guided audience analysis and message design. Research-community partnerships are long-term collaborations between researchers and community stakeholders that are focused on addressing problems of practice (Green et al., 2001). They are intended to support local knowledge networks by collecting and analyzing relevant social and behavioral data for environmental scanning (e.g., community climate and readiness), stimulating the sharing of ideas and perspectives among community stakeholders, coordinating activities, and mobilizing resources in the community (O'Hair et al., 2010). This type of collaboration, for example, has been shown to

produce an effective combination of a social marketing campaign and efforts by community stakeholders to collect unused opioid medications stored in residents' homes as means to decrease the risk of opioid addiction in the community (Yanovitzky, 2017).

Discussion

Access to critical health information is key to improving positive health outcomes for all people (Viswanath & Ackerson, 2011), and communities that maintain a rich, diverse, and inclusive flow of information and structured mechanisms and opportunities for public discussion are better positioned to recognize health problems, develop solutions, and mobilize into action (Hossain & Kuti, 2010). Communication provides both the infrastructure and the basic mechanism through which health information is exchanged and interpreted (Rimal & Lapinski, 2009), yet many communication-based interventions treat communities as merely a setting or a place for the dissemination of health information. Although community membership can be a useful dimension of audience segmentation and subsequent targeting and tailoring of health information to diverse social groups (Kreuter & Wray, 2003), the overview of community-based health interventions provided in this chapter suggests a greater role of communication-based interventions in building the capacity of communities themselves to access and communicate health information. In this way, communities are transformed into agents of change (McLeroy et al., 2003), with the power to leverage local communication networks and localized knowledge and capacity to respond more effectively to health risks and build resilience and collective efficacy to cope with health stressors.

Over the past two decades, there has been growing interest from health communication and health informatics scholars in the potential of structural communication interventions to improve access to and utilization of relevant, credible, and useful health information in communities with diverse information needs, circumstances, and capabilities. As a result, much progress has been made toward constructing empirically valid theories that explain how and under what circumstances building, leveraging, or augmenting a community's information and communication infrastructure can facilitate the flow and exchange of health information, contribute to social integration and collective efficacy, promote coordination among stakeholders, and mobilize residents and community organizations into action. This has challenged old conceptions about the use of communication in health and introduced new perspectives on health communication. Despite this, we note the relative paucity of studies that have tested the effects of such interventions. Interventions that target changes in communication ecologies are notoriously challenging to implement and evaluate (Houston et al., 2014), but they also provide a better fit to the complexity of promoting healthier behaviors and lifestyles and helping residents navigate the health challenges they experience in their communities than do interventions that neglect a community's communication infrastructure. With the increasing ubiquity of information and communication technology as a means for improving access to and flow of information and recent theoretical and methodological advancements in the study of communication ecologies, we fully expect to see increased use of this type of intervention as the field of health communication advances.

Looking ahead with an eye toward developing robust communication and information community-based interventions, it is important to consider that detailed accounts of how relationships were established and maintained with communities, the nature and scope of the partnership, and what new knowledge was gained as an outcome of the partnership are notably missing from the current literature. Without having this information, it is difficult to construct a generalizable body of knowledge that can support the scaling up of these types of interventions and also facilitate evaluation of these interventions by establishing common metrics of impact. In this respect, it is important to recognize that community engagement comes in different sizes and forms that may be organized on

a continuum ranging from passive community involvement (e.g., an informed community) to a full partnership model. The challenge moving forward is to develop a better sense of how to choose and implement a particular model of community engagement that is optimally matched to the particular circumstances and existing capacity of each community.

Future Directions

Community-based health interventions have significant potential to improve health outcomes for diverse groups and communities by improving their engagement with health-related information and mobilizing key stakeholders and institutions into action. The question of how to engage with communities most efficiently and productively to access, comprehend, assess, manage, and act on health information that is available to them may prove to be transformative to the health communication field. In particular, it presents an opportunity to shift the traditional focus on communication as an information transmission and translation tool toward a deeper consideration of the role of communication mechanisms and processes in building capacity to organize, coordinate, and collectively promote the types of social and structural changes that are necessary for eliminating existing health disparities. As we demonstrate in this chapter, there is already a sound body of theoretically informed scholarship that can inform this line of research, but empirical research that tests these theories is still lagging. As this body of work continues to grow in the coming years, we fully anticipate that it will significantly expand the currently limited understanding of the contribution of communication to public health outcomes within the social determinants of health framework.

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