

# INTEGRATING QUALITATIVE APPROACHES AND COMMUNITY INPUT TO DEVELOP HEALTH PSYCHOLOGY INTERVENTIONS FOR CHRONIC DISEASE IN UNDERSTUDIED POPULATIONS

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Chronic diseases, including heart disease, cancer, and diabetes, are among the leading causes of death and disability in the United States (Johnson et al., 2014; Kochanek et al., 2020). The burden of chronic disease is substantial, including greater health care costs and major functional, social, and cognitive limitations (Buttorff et al., 2017). Many underserved communities, including low-income and racial/ethnic minority groups, experience disproportionately higher rates of chronic disease than non-Hispanic Whites, including cardiovascular disease, obesity, and diabetes (Cunningham et al., 2012; Virani et al., 2020). Traditional approaches to disease prevention research have relied on a biomedical model in which communities and individuals have little input in the research process or approach, which has been largely unsuccessful for reducing health inequities (Zimmerman & Anderson, 2019).

Alternatively, there has been a growing interest in using community-based approaches to develop health psychology interventions for reducing health inequities, especially in underserved communities (low-income and/or racial/ethnic minorities). Community-based participatory research is a collaborative approach to research that involves meaningful engagement and equitable involvement

from community members, patients, stakeholders, and organizations (Israel et al., 1998). Community-based research exists on a continuum, ranging from community outreach to formal partnerships with shared decision making and equal authority. By directly involving community members as equal partners in the research process, community-based research holds tremendous promise for creating behavioral health interventions that are more likely to be feasible, culturally appropriate, adopted, effective, and sustained (Cyril et al., 2015; Israel et al., 1998; Wallerstein & Duran, 2010). Furthermore, these partnerships offer rich opportunities for refining theories of health behavior change and understanding when, why, and for whom proposed solutions are most effective.

A central component of community-based research is eliciting feedback from community members throughout the research process. When community members share their individual perspectives and lived experiences this input can be used to identify a research question, develop ideas for essential program elements, identify potential barriers to implementation, promote culturally appropriate research (i.e., sensitive, relevant, acceptable), inform the study design and

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evaluation plan, as well as enhance sustainability (Grieb et al., 2015). While community-based research often starts with eliciting community feedback, community input should be integrated throughout the research process in order to promote long-term sustainability (Glasgow & Chambers, 2012).

One well-known model for implementation and dissemination is the RE-AIM model (Glasgow & Chambers, 2012). According to the RE-AIM model, there are important cross-cutting issues that are critical to the dissemination and sustainability of community-based interventions, including understanding multilevel contextual factors, multiple stakeholder perspectives, and assessing societal costs, all of which are critical for sustainability (Glasgow & Chambers, 2012; Neta et al., 2015). Economic analyses of cost-effectiveness are especially critical for community stakeholders who may only have limited resources for program implementation (Wilson, Christensen, et al., 2019). Increasingly, researchers are recognizing the critical need to develop standards for the field of health psychology on conducting cost-effectiveness analyses in both clinical and community settings (Jacobsen et al., 2019; Kaplan et al., 2019; Wilson, Christensen, et al., 2019; Wilson, Lorig, et al., 2019). Community researchers have advocated for more community-based participatory research approaches to better understand and sustain intervention effects over the long term (Israel et al., 2001). However, few previous studies have focused on evaluating the efficacy of long-term interventions that specifically alter community-level supports for health promotion. Thus, there is an increasing need to develop longitudinal studies that allow for detailed documentation of the change process and cost-effectiveness as interventions are implemented over time in community settings.

Social environmental factors are particularly important determinants of health-related outcomes in underserved communities. For example, issues of access and safety for health promotion opportunities (e.g., physical activity facilities, access to healthy foods) remain an important issue for underserved communities (low income,

racial/ethnic minorities) who are at increased risk for developing chronic diseases. Several cross-sectional studies have evaluated associations between safety, access to walking trails, and physical activity in underserved communities. The Centers for Disease Control and Prevention (CDC) analyzed data from the 1996 Behavioral Risk Surveillance System in Maryland, Montana, Ohio, Pennsylvania, and Virginia. This report was the first to document the higher prevalence of physical inactivity among persons who perceive their neighborhoods as unsafe (CDC, 1999). Wilson et al. (2004) studied racial/ethnic disparities in safety and access for physical activity by stratifying neighborhoods as either low or high in socioeconomic status (SES) based on U.S. Census data. Compared with the higher-SES group, fewer adults in the low-SES group met the physical activity recommendations for moderate and vigorous physical activity. The low-SES group reported higher perceptions of neighborhood crime, unattended dogs, unpleasantness of neighborhoods, untrustworthy neighbors, and less access to public recreation facilities as compared with the higher-SES group. Having and using walking trails also predicted physical activity and walking for individuals from low-SES areas, but not for individuals from high-SES areas. These studies provide examples of how evidence-based research can highlight important social and physical environmental needs for building support and capacity in underserved communities. These studies can then guide qualitative methods and protocols for further developing community-based interventions to improve health and prevent the development of chronic disease.

Qualitative methods, including focus groups and individual interviews, offer a useful framework for organizing community input and generating an in-depth contextualized view of needs and interests within a community (Grieb et al., 2015). Qualitative methods also have the potential to help researchers to revise existing frameworks and to better understand theoretical mediators of behavior change (Mâsse et al., 2015; Wilson et al., 2012). While there are different approaches to qualitative analysis, health psychologists often

implement a thematic content analysis approach to qualitative research, which focuses on systematically describing the meaning of data and developing themes by identifying, analyzing, and reporting patterns within the data (Braun & Clarke, 2006). This approach typically involves both inductive (data-driven, bottom-up) and deductive (theory-driven, top-down) approaches (Fereday & Muir-Cochrane, 2006). Community-based research capitalizes on shared learning between researchers and community members (Israel et al., 1998). Thus, a major advantage of combining inductive and deductive approaches is that it allows researchers to draw from and refine existing theories, while also integrating novel ideas and real-world perspectives from community members.

In the last few decades, there has been a growing interest in using community-based approaches to develop interventions for reducing health inequities in underserved communities. In this chapter, we provide an overview of exemplary community-based interventions that have successfully integrated community input to prevent or reduce chronic disease disparities in underserved communities. We highlight the importance of intervening across multiple systems, including health care settings and community organizations and emphasize that simple quality improvements can be made within health care settings to improve access, care, education, and behavioral outcomes.

First, we describe the community-based Chronic Disease Self-Management Program (CDSMP; Lorig et al., 1999, 2001), which was first developed for patients with chronic disease and then adapted for implementation within multiple racial/ethnic communities (Lorig et al., 2003, 2005). Second, we discuss examples of integrated community health care interventions to address diabetes-related disparities among African American communities, including the Racial and Ethnic Approaches to Community Health (REACH 2010) Charleston and Georgetown Diabetes Coalition (Carlson et al., 2006; Jenkins et al., 2004, 2010) and the South Side Diabetes Project (Goddu et al., 2015; Peek, Ferguson,

Bergeron et al., 2014; Peek, Wilkes et al., 2012). Third, we present the Positive Action for Today's Health (PATH) Trial, which tested the effect of a community-based environmental intervention for promoting access and safety for walking among low-income African American communities (Wilson et al., 2015; Wilson et al., 2010).

### **EXAMPLE 1: IMPROVING CHRONIC DISEASE SELF-MANAGEMENT ACROSS DIVERSE POPULATIONS**

Treatments for chronic disease have primarily focused on medications and costly procedures that fail to integrate behavioral and psychological issues. In response to these concerns Wagner and colleagues developed a model for delivering clinical care to those with chronic disease, known as the Chronic Care Model (Wagner, 1998; Wagner et al., 1996). The Chronic Care Model identifies essential elements of a health care system for high-quality chronic disease care, including the community, the health system, self-management support, delivery system design, decision support, and clinical information systems. A systematic review showed that one of the most critical components of chronic disease models was self-management support (Grover & Joshi, 2015). Self-management has been defined as involving the tasks (emotional, medical, etc.) that an individual can engage in to live well and improve quality of life while living with one or more chronic disease conditions.

Although these self-management approaches for chronic disease have been implemented on a large scale nationally, these approaches have not yet been integrated into clinical care or community-based settings although they have been applied within underserved racial/ethnic minorities populations (Lorig et al., 2003, 2005). Addressing this issue, the CDSMP, which focuses on promoting self-management skills among chronic disease patients, is described below and has been shown to be effective in changing behaviors and symptoms while also lowering health care costs (Lorig et al., 1999, 2001).

## The Chronic Disease Self-Management Program (CDSMP)

The CDSMP is based on Self-Efficacy Theory (Bandura, 1986), and integrates efficacy-enhancing strategies such as skills mastery, modeling, reinterpretation, and social persuasion. The CDSMP model was developed based on a comprehensive set of focus groups with a broad range of chronically ill patients to increase the generalizability of the approach. Based on the focus groups and qualitative data the CDSMP approach addresses a wide range of coping strategies, health behaviors, and adherence-related skills (Lorig et al., 1996, 1999). The CDSMP intervention is typically delivered in small-group workshops and led by two trained peer leaders (Lorig et al., 1999). Specifically, the intervention approach includes developing key skills that include action planning, problem solving, and decision making. The key content also includes techniques to deal with pain, depression, fatigue, and shortness of breath; exercise; appropriate use of medications; effective communication with family, friends, and health professionals; nutrition; and how to evaluate new treatments. The CDSMP approach also meets the needs of the individuals by encouraging them to select and self-tailor the content to their personal situations (Lorig et al., 1999, 2001).

Previous research on CDSMP has focused on one or more of the following components: health status; symptoms such as pain, shortness of breath, disability and/or depression; health behaviors such as exercise; use of cognitive symptom management; communications with health care professionals and/or adherence to medication; health care utilization and or costs (Lorig et al., 1999, 2001). In the original large-scale randomized study, treatment participants demonstrated 6-month improvements in minutes of exercise, cognitive symptom management, and communication with physicians compared to usual-care controls (Lorig et al., 1999). Results also showed less role limitation, fatigue, disability, and health distress (e.g. psychological perceptions of health-related distress), as well as fewer hospitalizations and days in the hospital. These findings were also replicated through internet-based studies

(Lorig et al., 2006) and in national studies in the United States and England (Lorig et al., 2008).

The CDSMP has been shown to result in lower health care utilization in previous studies. For example, in the original randomized trial at 6 months, treatment participants demonstrated significantly fewer hospital stays and fewer nights in the hospital as compared to controls (Lorig et al., 1999). In this study, it was calculated to be \$820 less in health care utilization costs for treatment participants than for controls. In a longitudinal study of treatment participants, physician and emergency department visits were significantly reduced in both years 1 and 2; however, hospital stays and nights in the hospital did not change over the 2 years (Lorig et al., 2001). At 4 months, treatment participants also had fewer emergency department visits than control participants and these effects remained significant at the 1-year follow-up (Lorig et al., 2003). The CDSMP has also been successfully adapted for use in racial/ethnic minorities such as older African American adults through cultural targeting, including adding discussion of culturally relevant foods, stress reduction techniques, and communicating with racially/ethnically diverse physicians (Gitlin et al., 2008); and similarly with Hispanic populations (Lorig et al., 2003, 2005).

The CDSMP has been in public use for more than two decades (Ahn et al., 2013) and has created challenges in being translated to the public. One challenge has been the need for an administrative infrastructure to manage the needed tasks of ongoing training, updating, technical assistance, and maintaining implementation fidelity (Lorig et al., 2008). Another challenge has been financial sustainability for the infrastructure and for the organizations offering the programs. To address these issues, the program creators have established a lean organization to manage the CDSMP. At the same time, they have licensed the content of their online programs to another company. The functions include assisting with training and technical capacity in creating new programs. In response to the second challenge, financial sustainability, this was accomplished by having a few major

health plans such as Kaiser Permanente adopt the program. Following their lead there has been interest from other organizations, foundations, and from governmental agencies. Given that none of these funds for program delivery come to the sustaining organization, their financial viability is based on licensing the program to those that offer it and involves offering high-level training (Lorig et al., 2008).

The CDSMP is among more than 20 evidence-based programs recognized by the Administration of Community Living (ACL). Future opportunities include the formation of statewide and other coalitions to offer not only the CDSMP but other ACL recognized programs. Funding opportunities for community organizations are also starting to appear in the budgets of federal agencies as well as third-party insurers. In addition, the Evidenced Based Leadership Coalition has begun an effort to enable recognized evidence-based programs to work together and to advocate for the program implementation and funding.

#### **EXAMPLE 2: REDUCING DIABETES-RELATED RACIAL DISPARITIES THROUGH INTEGRATED HEALTH CARE COMMUNITY INTERVENTIONS**

African Americans experience disproportionately higher rates of diabetes, greater hospitalizations due to diabetes-related complications, and a higher diabetes-related mortality rate (Virani et al., 2020). To address these disparities in diabetes-related care and control, researchers are increasingly advocating for multifaceted interventions that address health care systems (e.g., clinician engagement, quality improvement of diabetes care), patient support (e.g., education, care coordination), and community partnerships (Peek, Ferguson, Bergeron, et al., 2014; Thornton et al., 2020). In this section, we describe two examples of integrated health care-community interventions that target changes within health care systems in combination with strong community-based partnerships to reduce diabetes-related disparities among African American communities.

#### **REACH 2010: Charleston and Georgetown Diabetes Coalition**

The Charleston and Georgetown Diabetes Coalition was developed as part of the national REACH 2010 program (Centers for Disease Control and Prevention, 2021), which aimed to reduce long-standing health disparities in racial/ethnic minority communities through the development and evaluation of community coalitions. Specifically, the coalition consisted of 28 partner-organizations in the Charleston and Georgetown counties of South Carolina, who shared a common goal of reducing disparities in diabetes care and self-management among African American adults (Jenkins et al., 2004, 2010). The coalition integrated community members, patients with diabetes, nurses, clinicians, and community leaders, including partnerships with volunteer and faith-based organizations, health care and academic institutions, local libraries, Greek sororities, professional associations, local media groups, and government and business organizations. The coalition drew from a community-based participatory framework, in which all partners had equal input in the development, implementation, and evaluation of solutions for reducing diabetes-related disparities within their communities.

One of the first tasks undertaken by the coalition was to document diabetes-related disparities between African Americans versus White adults through both qualitative and quantitative approaches, including focus groups, surveys, medical record audits, and secondary data (e.g., census data). The results of this needs assessment revealed that among a sample of 12,000 African Americans with diabetes who were registered patients in the coalition's partner ambulatory care systems, there was a range of disparities, including higher health care costs, greater prevalence of diabetes-related complications, greater hospitalizations and emergency department visits, lower diabetes control, lower access to diabetes care and education, and a higher death rate relative to White adults. Based on these findings, the coalition aimed to develop a series of community-based intervention activities

to improve access to diabetes-related care and control among African Americans within Charleston and Georgetown counties. Drawing from the Chronic Care Model (Bodenheimer et al., 2002), which uses a social-ecological approach to account for multiple systems of influence, the coalition targeted: (a) health care system change related to improved access, care, education, and reimbursement; and (b) community development, empowerment, and education.

To promote health care system change, the coalition implemented a variety of strategies, including continuous quality improvement programs for improving diabetes care at the affiliated clinical sites and creating a patient-held record (e.g., HbA1c, blood pressure, and cholesterol values) that helped patients identify which areas they needed to continue to monitor and self-manage. Strategies for improving patient empowerment and education were delivered across community partners on a wide scale (e.g., churches, libraries, local businesses, community centers, etc.) and included activities such as self-management educational classes, connecting patients to assistance with medication costs and supplies, walking groups, grocery store tours, and the development of updated diabetes-related information and resources through local libraries (Carlson et al., 2006).

### **Evidence of Community-Level Impact**

To evaluate the impact of the program, the coalition audited electronic medical records of African American and White patients with diabetes at the affiliated clinical sites. After 24 months of program implementation baseline disparities (between White and African American patients) in health care process measures (e.g., frequency of HbA1c, lipid profile, foot exams) and health outcomes (e.g., blood pressure) had been eliminated (Jenkins et al., 2004). For example, at baseline, only 37% of African American patients with diabetes received a lipid profile test (vs. 52% of White patients). Over the 2-year period, there was a 22% increase among African American patients, such that 59% of African American patients and 55% of White

patients received a lipid test, thereby reducing the disparity between racial groups on access to health care process information. Importantly, the program also resulted in a 36% reduction in diabetes-related amputations over a 9-year period (Jenkins et al., 2010). In summary, the Charleston and Georgetown Diabetes Coalition demonstrates the value of targeting changes in diabetes-related care within health care settings, while also capitalizing on strong community partnerships.

### **The South Side Diabetes Project**

Another example of an integrated health care-community intervention is the South Side Diabetes Project, an ongoing multifaceted intervention that aims to reduce diabetes-related disparities among low-income African-American communities in the South Side of Chicago (Goddu et al., 2015; Peek, Harmon et al., 2012). The South Side Diabetes Project is a community-university partnership, including partnerships between researchers, clinicians, six health centers, community leaders, and a variety of community organizations and businesses (e.g., farmers' markets, food banks, community centers). The overall approach for reducing diabetes-related disparities involved targeting four key components: (1) quality improvement within health centers; (2) patient activation; (3) medical provider training; and (4) community partnerships and outreach.

To address quality improvement within the affiliated health centers, quality improvement teams were developed (e.g., clinicians, clerical staff, research staff), with each team working with a quality improvement coach to identify opportunities for improving operations and services for diabetes-related care. For example, one project developed by the quality improvement teams was a peer support group to help connect patients to community resources (Peek, Wilkes, et al., 2012).

The patient component of the program included implementing culturally tailored diabetes education courses, which targeted diabetes self-management as well as shared decision

making skills to empower patients to feel more confident when interacting with their medical providers. These courses were based on prior qualitative work by the research team, which identified several barriers to patient–provider communication among African Americans with diabetes and their providers (Peek et al., 2009). Results suggest that these courses were effective in helping patients improve their self-efficacy, self-care behaviors (e.g., glucose monitoring), foot care, and glucose control (Peek, Harmon et al., 2012). Complementing the patient component, the provider component of the project focused on enhancing providers’ readiness to engage with and empower patients through a series of workshops on cultural competency, communication skills, and shared decision making.

Additionally, the project has formed strong partnerships with a variety of community organizations and businesses, including local farmers’ markets, food banks, grocery stores, a national pharmacy chain, and community centers. Through these partnerships, the project has been able to identify diabetes patients in community settings without regular medical care and has connected them to medical homes, improved access to healthy foods, provided cooking demonstrations, implemented educational grocery store and farmers’ market tours, conducted health screenings, and disseminated health information (Peek, Ferguson, Roberson, et al., 2014; Peek, Wilkes, et al., 2012). For example, by partnering with farmers’ markets, Walgreens pharmacy, food banks, and the South Side Diabetes Project developed a “food prescription” program, in which patients in designated “food deserts” received a “prescription” for free or discounted fresh fruits and vegetables, which they could redeem at local farmers’ markets or Walgreens (Goddu et al., 2015).

### **Evidence of Community-Level Impact**

Although evaluation of the long-term impacts of the South Side Diabetes Project is ongoing, preliminary results suggest that the culturally tailored patient self-management courses have been effective in improving patients’ self-efficacy and diabetes self-care (Peek, Harmon et al., 2012).

Furthermore, over 1000 “food prescription” vouchers have been distributed to community members, with long-term plans to conduct individual interviews and track purchasing trends (Goddu et al., 2015). The research team has also highlighted several lessons learned through this project, including identifying key champions within community organizations who are committed to community engagement, grounding the research approach in community-based participatory strategies (e.g., mutual respect, shared learning, trust), and making sustainability a priority from the start (Peek, Wilkes et al., 2012). Importantly, the research team is continuing to collect qualitative data from community members to better understand contextual factors related to chronic stress and chronic disease self-care management, such as the role of community violence (Tung et al., 2018).

While many previous chronic disease programs have targeted patients within clinical settings, one strength of the South Side Diabetes Project is that it has helped to link new patients to providers, thereby demonstrating the importance of extending diabetes-related care, education, and resources to community-based settings. Furthermore, in addition to improving care and resources within clinical settings, another major strength of the program is that it has helped to connect community members to existing resources within their neighborhoods (e.g., food banks, farmers’ markets, community centers) and enhanced linkages across community businesses and organizations. Finally, this trial shows the importance of using formative evaluation and qualitative data to guide program improvements to meet community needs.

### **EXAMPLE 3: PROMOTING WALKING AMONG LOW-INCOME AFRICAN AMERICAN COMMUNITIES THROUGH A GRASS-ROOTS ENVIRONMENTAL INTERVENTION**

The importance of physical activity on improving chronic disease prevention and management has been well established (Warburton et al., 2006), and physical activity has been consistently shown

to be associated with a reduced risk of mortality (Arem et al., 2015). Several national studies have demonstrated that engaging in even moderate-intensity activity equivalent to a brisk walk provides enough benefit to improve fitness and prevent chronic diseases such as obesity, cardiovascular disease, and type 2 diabetes (Lee et al., 2012). Despite the strong positive association between physical activity and health, only 24.3% of U.S. adults meet national recommendations for daily physical activity, with lower rates among some racial/ethnic minority groups, such as African Americans and Hispanic populations (Virani et al., 2020).

Environmental interventions, which include making changes to the physical or social environment through public policy, social marketing campaigns, community-led coalitions, or by improving public access to places for physical activity, offer a cost-effective approach for increasing physical activity at a population level (Chokshi & Farley, 2012; Laine et al., 2014). Ecological models (McLeroy et al., 1988; Sallis et al., 2015), highlight the importance of integrating multiple systems to impact health behavior change. These systems include interpersonal (social networks), institutional, and community factors (physical and social environmental supports), as well as public policy for promoting walking and physical activity in community-based settings. Social Cognitive Theory, also proposes that environmental factors play an integral role in shaping a person's ability to successfully engage in a behavior (Bandura, 1986). Consistent with these theoretical frameworks, studies have demonstrated that the physical environment, such as access for walking, aesthetics, and pedestrian safety, have been associated with greater engagement in regular walking and physical activity (Sallis et al., 2007). There is also converging evidence that aspects of the social environment, including perceived social cohesion, social support, and social networks, should also be considered in designing effective environmental interventions (McNeill et al., 2006). The Positive Action for Today's Health (PATH) trial (Wilson et al., 2015; Wilson et al., 2010), described below, was one of the first systematic trials to test whether improving

aspects of the physical and social environment was an effective approach for improving walking and physical activity among underserved, racial/ethnic minority communities.

### **The Positive Action for Today's Health (PATH) Trial**

Prior to developing the PATH intervention, a series of focus group studies were conducted (Griffin et al., 2008; Wilson et al., 2005; Wright et al., 2010) that indicated several clear barriers to physical activity existed, within the underserved communities (low income, racial/ethnic minorities). Focus groups were conducted (Griffin et al., 2008) with residents in these southeastern communities that assessed the needs of the African American community for developing an intervention to increase physical activity and walking on trails. Several themes were identified as important including addressing safety and access for walking as well as engaging family and community involvement. Findings from these focus groups indicated barriers to physical activity that included lacking the motivation to engage in physical activity and not having role models or social support for physical activity. Furthermore, additional barriers included a lack of access to facilities and opportunities for physical activity and concerns about safety (e.g., crime- and traffic-related). These data had important implications for developing the NIH-funded PATH trial (Wilson et al., 2010). The PATH trial was guided by a community-based steering committee and implemented program elements that directly mapped on to community members' needs and interests, including partnering with off-duty police officers, and community walking leaders, to enhance perceived safety for walking and a social marketing program aimed at enhancing motivation and social connectedness among community members (Coulon et al., 2012).

The PATH trial tested the integration of a police-patrolled walking program plus social marketing strategies for improving social and physical environmental supports on improving perceptions of safety and access for walking in these low-income African American communities



(Wilson et al., 2015; Wilson et al., 2010). Three matched communities (on poverty, physical inactivity, health status) in South Carolina were randomized to receive one of three interventions: a police-patrolled walking program plus a social marketing intervention, a police-patrolled walking program only, or a no-walking general health education program. All three interventions were implemented in collaboration with community leaders, a local community center (Coulon et al., 2012), and a steering committee. Walking trails in the intervention communities were identified in collaboration with the steering committee from the local community, and the trails began and ended at the community center in each of the communities (Wilson et al., 2015). The intervention communities prioritized increasing perceived access, and safety for walking by offering organized community-led trail walks 6 days per week, which were patrolled by off-duty police officers and walking leaders trained in first aid and traffic safety (Coulon et al., 2012).

In addition to the police-patrolled program, the full intervention program also incorporated social marketing strategies to increase motivation and promote the use of trail walking (Coulon et al., 2012; Wilson et al., 2013). The social marketing campaign used a grassroots approach by integrating feedback and input from community members, walking group leaders, a steering community, and city leaders. Specifically, five messages were developed to highlight the value of the walking program, including (a) safety and accessibility for walking, (b) physical health, (c) mental health and well-being, (d) self-confidence for engaging in regular walking, and (e) community connectedness. These campaign messages were disseminated through a 12-month calendar (which included monthly messages featuring one of the five campaign messages) and a door hanger (which was designed to invite new walkers to the walking group; Coulon et al., 2012). “Pride strides” were also promoted as part of the social marketing campaign in which community members could be trained to lead their own walking groups on the identified trail (e.g., church groups, family members, and friends).

A primary finding from the PATH trial was that walking attendance on the community trail increased for the full intervention community relative to the walking-only ~~and control communities~~. Specifically, walking attendance increased from 40 to 424 walkers per month at 9 months, with this pattern being sustained to about 200 walkers per month at 24 months (Wilson et al., 2015) as compared to the walking-only community which showed approximately 40 walkers a month throughout the 2 years. Follow-up analyses also showed an intervention effect of the police-supported plus social marketing walking program an accelerometry estimated moderate-to-vigorous PA in older adults (55 years and older) in the PATH trial (Sweeney et al., 2017). Another key outcome related to sustainability was that the community was able to maintain 200 walkers per month on their own through developing a church challenge during year 2 of the trial (Wilson, et al., 2015).

Formative process evaluation methods were also implemented to assess the dose and fidelity of delivering the intervention components including the social marketing and social connectedness elements of the PATH program (Coulon et al., 2012). Using an ecological framework, process data on access and safety for walking were systematically collected from baseline to 12 months in the two walking communities. Adequate implementation dose was achieved, with fidelity achieved but less stable in both programs. Increases in the number of walkers per month in the full intervention community were also positively correlated with peer-led Pride Strides, a key social marketing component, and with program social interaction which was reported as the primary reason for which walkers participated (Coulon et al., 2012).

In summary, the PATH trial demonstrates that implementing changes to the physical and social environment to improve access and aesthetics as well as the inclusion of a grass roots social marketing strategy was an efficacious approach for engaging underserved communities in greater physical activity. Complementing the findings from the PATH trial, converging evidence from

other community-based intervention studies suggests that implementing environmental changes (including improved signage, repairing or cleaning walking trails, or developing new walking trails) is an effective approach for promoting enhanced trail use and walking (Goodman et al., 2014) and that aspects of the social environment, such as social cohesion, should also continue to be considered in the development of effective community-based environmental interventions (McNeill et al., 2006).

## RECOMMENDATIONS FOR FUTURE RESEARCH

In summary, community-based research has become increasingly more valued in the field of health psychology in recent years. This may be partly due to the fact that evidence for long-term outcomes has been limited when relying on randomized controlled trials alone. Future studies should focus on efforts to blend randomized controlled trial approaches with community-based participatory approaches to promote healthy lifestyle changes and long-term sustainability in populations who may be at increased risk for developing chronic diseases. Although compromises will be made along the way, the result will likely be more sustainable for communities that engage in the process of prioritizing and advocating for the specific changes their communities' value in promoting health and well-being. Below we outline a series of emerging themes and recommendations for future community-based interventions.

### Continue to Seek Community Input Throughout the Research Process

As highlighted throughout this chapter, an important early step in the research process is to elicit feedback from community members and stakeholders. For the CDSMP, this involved conducting focus groups with individuals with a wide range of chronic diseases, with varied symptoms and self-management needs. Alternatively, for projects like the REACH 2010 Charleston and Georgetown Diabetes Coalition, the South Side Diabetes Project, and the PATH trial it was

important to understand the needs and interests of community members within specific neighborhoods. For example, safety was a critical element of the PATH program brought on by concerns expressed by community members in focus groups. The PATH program also highlighted the importance of using formative and summative process evaluation to adapt the program to the communities' needs. Importantly, community-based approaches should continue to integrate community input throughout the research process in order to identify opportunities for improving implementation, adaptation, and strengthening program sustainability (Glasgow & Chambers, 2012).

### Intervene Across Multiple Systems and Settings

Both the REACH 2010 Charleston and Georgetown Diabetes Coalition and the South Side Diabetes Project demonstrated the importance of intervening across multiple systems, including health care settings and community organizations. As demonstrated by these projects, relatively simple quality improvements can be made within health care settings to improve access, care, and education. Complementing this approach, community partnerships offer rich opportunities for screening, education, and increasing access to resources for healthy eating, physical activity, and chronic disease self-management, especially among underserved communities. Furthermore, the PATH trial highlighted the importance of considering both physical and social environmental factors, including neighborhood walkability, safety, as well as social connectedness. In summary, addressing multiple systems seems an important consideration both for program efficacy, and effectiveness.

### Prioritize Sustainability and Assessing Cost-Effectiveness

In this chapter, we have highlighted the important cross-cutting issues that are critical to the dissemination and sustainability of community-based interventions, including understanding multilevel contextual factors, multiple stakeholder

perspectives, and assessing societal costs, all of which are critical for sustainability (Glasgow & Chambers, 2012). Community researchers have long advocated for more community-based participatory research approaches to better understand and sustain intervention effects over the long term (Israel et al., 2001). However, few previous studies have focused on evaluating the efficacy of long-term interventions, while also measuring cost-effectiveness. Thus, there is a growing need to implement longitudinal studies that allow for detailed documentation of the change process and cost-effectiveness (Wilson et al., 2019).

### Long-term Impact Requires Patience and Persistence

It is important to recognize that community-based research may take several years to see evidence of significant community-level impact. Community-based interventions are often multifaceted, which may require large investments of time, staffing, and resources. However, as demonstrated by the examples in this chapter, community-based research holds tremendous promise for significantly reducing the burden of chronic disease and increasing long-term engagement among underserved communities. While a focus on outcomes is important for building the evidence base, we encourage researchers to disseminate lessons learned, qualitative findings, recruitment and retention strategies, process evaluation, and examples of successful university-community partnerships so that our field may continue to learn how to best partner with communities and reduce longstanding health inequities.

### CONCLUSIONS

In the last few decades, there has been a growing interest in using community-based approaches to develop interventions for increasing engagement, sustainability, and reducing health inequities in underserved (low income, racial/ethnic minorities) communities. In this chapter, we have highlighted key cross cross-cutting issues that are critical to

dissemination and sustainability of community-based interventions, including engaging the community throughout the process, understanding multilevel contextual factors, involving multiple stakeholder perspectives, and assessing societal costs, all of which are critical for sustainability.

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