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Progress in Community Health Partnerships: Research, Education, and Action, Volume 12, Special Issue 2018, pp. 23-34 (Article)



Published by Johns Hopkins University Press

DOI: <https://doi.org/10.1353/cpr.2018.0018>

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# The Church Bridge Project: An Academic–Community Perspective of a Church-Based Weight Management Pilot Intervention among Young Adult African Americans

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Submitted 29 June 2017, revised 02 February 2018, accepted 20 February 2018.

## Abstract

**Background:** Churches are effective community partners and settings to address weight management among African Americans. There is limited information on the use of churches to reach young adult populations and church collaborations with primary care clinics.

**Objectives:** The Church Bridge Project represents a community–academic partnership that presents the recruitment process of a church-based weight management intervention and describes baseline data of participants recruited from churches and primary care providers. We also discuss research contributions, challenges and limitations, study applicability, and practice implications from an academic and community perspective.

**Methods:** Church leaders were involved in the entire research process. The theory-driven intervention included 12 diabetes prevention program-adapted education and motivational interviewing (MI)-guided sessions. Participants were recruited through primary care providers and church leaders. Demographics, medical and weight history, stage of change for weight loss, social support, and self-efficacy for diet and physical activity, weight, and girth circumferences were measured. Baseline descriptive data were analyzed.

**Results:** Of 64 potential participants, 42 (65.6%) were enrolled in the study and 16 (25.0%) completed baseline data

collection. No participants were recruited through primary care providers. Recruited participants were similar to the target population except for being all obese and mostly female. The mean  $\pm$  SD age of participants was  $34.31 \pm 8.86$  years with most reporting having more than a high school education ( $n = 14$  [87.5%]), individual yearly income of less than \$59,000 ( $n = 12$  [75.0%]), and been married or living with a partner ( $n = 9$  [56.3%]). Most reported a history of hypertension and an immediate family history of diabetes and hypertension. Most participants were classified as class III obesity.

**Conclusions:** Young adults and primary care providers are difficult to engage in church-based interventions. Church leaders were comfortable with a collaborate model for decision making, but not an empower model. Churches remain a successful method to reach African Americans; however, more research is needed to motivate young adults to participate in health intervention research.

## Keywords

Nutrition, community health research, health disparities, community health partnerships, Southeastern United States, physicians' offices, primary prevention, rural health, obesity, church-based health

Obesity is a critical public health problem that significantly influences morbidity and mortality.<sup>1</sup> The accepted definition of obesity is having a calculated body mass index (BMI) result of 30 kg/m<sup>2</sup> or greater.<sup>1,2</sup> A large percentage (36.5%) of adults living in the United States

is considered obese.<sup>1,2</sup> Obesity is a major contributory risk factor for chronic conditions, including diabetes, cardiovascular disease, cancer, stroke, and hypertension as well as health concerns that affect quality of life such as sleep apnea and musculoskeletal, dermatologic, and reproductive issues.<sup>1–3</sup>

The burden of health consequences associated with obesity necessitates public health action.<sup>4</sup> National goals delineated by Healthy People 2020<sup>5</sup> include reducing the prevalence of obesity, preventing inappropriate weight gain, and increasing the proportion of adults and children who maintain healthy weight ranges.

Place of residence is associated with geographic clustering of health risk factors such as obesity and correlated mortality outcomes that can disproportionately affect disadvantaged populations.<sup>6,7</sup> For example, people living in southern areas of the United States have an increased obesity risk.<sup>1,2,8</sup> In fact, the prevalence of obesity is greater in the South (31.2%) than geographic locations in the Midwest (30.7%), Northeast (26.4%), and West (25.2%).<sup>1</sup> Obesity is especially widespread (>35% of the total population) among people living in four southern states: Alabama, Louisiana, Mississippi, and West Virginia.<sup>1</sup> In particular, Mississippi has a reportedly high overall obesity percentage (37%) and significant disparities such as a disproportionately higher percentage of obese African American (44%) residents compared with White (33%) residents.<sup>9</sup>

Rurality is also associated with higher rates of obesity and subsequently increased risk for metabolic syndrome, diabetes, and cardiovascular disease.<sup>10</sup> The higher percentage of obese people living in rural locations compared with urban areas (35.6% vs. 30.4%, respectively) is associated with lifestyle issues that challenge rural populations, including a lack of physical activity, fewer servings of produce intake, and increased consumption of sugar-sweetened beverages.<sup>8</sup> Additionally, social factors such as lower educational levels, limited available income, fewer resources, and living in a rural county with a history of persistent poverty are linked with greater obesity risk for adults.<sup>11</sup> The problem is exacerbated within African American communities in the rural South because of the limited availability of social support for healthy lifestyle behaviors associated with diet and exercise.<sup>12</sup>

Research efforts can facilitate the discovery of methods for optimizing existing social resources among people living in underserved, rural populations.<sup>8,13,14</sup> A community-based participatory research (CBPR) approach provides a means for addressing health disparities through mutually beneficial relationships among academic researchers, community partners, and health care providers.<sup>15</sup> Empowering community members through inclusion in all aspects of the research

process intensifies the investment needed for health behavior changes.<sup>13</sup> The activities involved in CBPR methods can be particularly effective for engaging faith-based organizations in health disparity research efforts. Church settings are optimal environments for implementing diet and exercise interventions.<sup>16–18</sup> Rural church congregations typically have abundant collective assets such as social support and healthy lifestyle resources that can positively influence behavioral change activities, and mitigate obesity disparities.<sup>19,20</sup>

Thus, the primary aim of the Church Bridge Project is to assess the feasibility of a theory-driven (socioecological, trans-theoretical, and health belief models), church-based intervention with a telehealth component to reduce obesity and related chronic disease disparities in rural, African American, young families using the reach, effectiveness, adoption, implementation, and maintenance (RE-AIM) framework.<sup>21</sup> The larger project will determine participant- and setting level-impact from quantitative and qualitative data. This specific article predominantly addresses the reach domain, which encompasses the recruitment process and baseline participant data to test the hypothesis that 50% of participants will be recruited from non-church settings and examine the demographics of recruited participants. We also discuss research contributions, challenges and limitations, study applicability, and practice implications from the academic and community perspectives.

## METHODS

### Community Collaboration Structure

Researchers partnered with church and community leaders of a rural county in South Mississippi. Before this project, the researcher had worked with church and community leaders (as the Coalition for South Mississippi Church Health) to conduct preliminary work that led to the funding of this project.<sup>22</sup> Contact was initiated through a needs assessment conducted by the researcher and a working relationship developed through preliminary research activities. Relationship building occurred over the course of 2 years before the grant was submitted and funded. Examples of relationship-building activities included monthly meetings of community members and researchers to discuss the mission of the group and inform the design of the project, researcher participation in community health events, and the implementation of focus groups

among community members. Community partners who participated in the executive team for this project included two pastor-appointed leaders from three African American churches, extension services faculty, and president of the county chapter NAACP. Research staff involvement included the principal investigator and a research dietitian/assistant to the principal investigator. The project was designed to pool resources from rural churches to deliver a health program at a single host church. To support program planning and implementation activities, the executive team participated in monthly meetings and each church ( $n = 3$ ) established their own volunteer base of church members in the form of a health ministry.

### Study Framework

The Church Bridge Project intervention was developed using the socioecological, health belief, and transtheoretical models. Church-based programs are ideal for socioecological models and foster change at multiple levels. Table 1 outlines the components of the Church Bridge Project intervention by socioecological model level.

Based on focus group literature and preliminary data,<sup>22</sup> the Church Bridge Project health belief model was created (Figure 1). The overall goal of the model is to use a culturally tailored approach for reducing obesity by focusing on health benefits associated with weight reduction, minimizing unrealistic body ideals, and improving the social support necessary for health behavior changes. By focusing on the family unit as a means for enhancing social support through family and church, the program model intends to address individuals at any stage of change and promote an advanced stage of change for weight loss via diet and physical activity modification. The strategies for accomplishing this goal include focusing on the family unit as a means for enhancing social support through family and church relationships, emphasizing the benefits of weight loss while lessening perceived barriers, and increasing self-efficacy to improve diet and physical activity behaviors.

### Program Development

The program was originally designed to be 12 educational group sessions that were adapted from the National Diabetes Prevention Program with the addition of MI strategies. The plan included the delivery of the sessions at a host church

**Table 1. Overview of Project Strategies Based on the Socioecological Levels of Change**

Level of Change	Strategy
Intrapersonal	Motivational interviewing Self-monitoring via mobile application Tailored communication and education
Interpersonal	Family programs with breakout groups for men, women and children separately Church ministry leaders Primary care provider support
Organization	Pastor leadership Church-sponsored education/events Health represented in “church media” Church policy changes Health ministries developed Collaboration with health care providers
Environment/policy	Community coalition Evidence for policy regarding health program funding

over the course of 6 months, or approximately every 2 weeks. The rationale was to alleviate the church of intense program delivery that might have occurred if weekly sessions had been planned. The church leaders discussed what topics would be of interest, and the research team matched those topics to National Diabetes Prevention Program sessions. All sessions were agreed on and approved by the executive team. The original grant proposed that educational sessions would be delivered by trained church or community members; however, during the planning period, church leaders did not feel there was anyone in their church community more credible than the university to deliver nutrition education sessions and were not interested in delivering the sessions themselves. Thus, a student model was suggested to support the delivery of nutrition education in collaboration with a medical doctor (and project consultant) and fitness entrepreneurs to support physical activity and other educational sessions.

Each session was intended to begin with a 5- to 10-minute “body and soul” devotional message delivered by one of two local pastors. The remaining 40 to 45 minutes was to include a 20-minute National Diabetes Prevention Program-adapted educational session followed by a 20-minute MI-guided group session, delivered by a trained registered dietitian. The MI sessions were to be delivered via videoconferencing to church groups separately divided by gender for men and women.

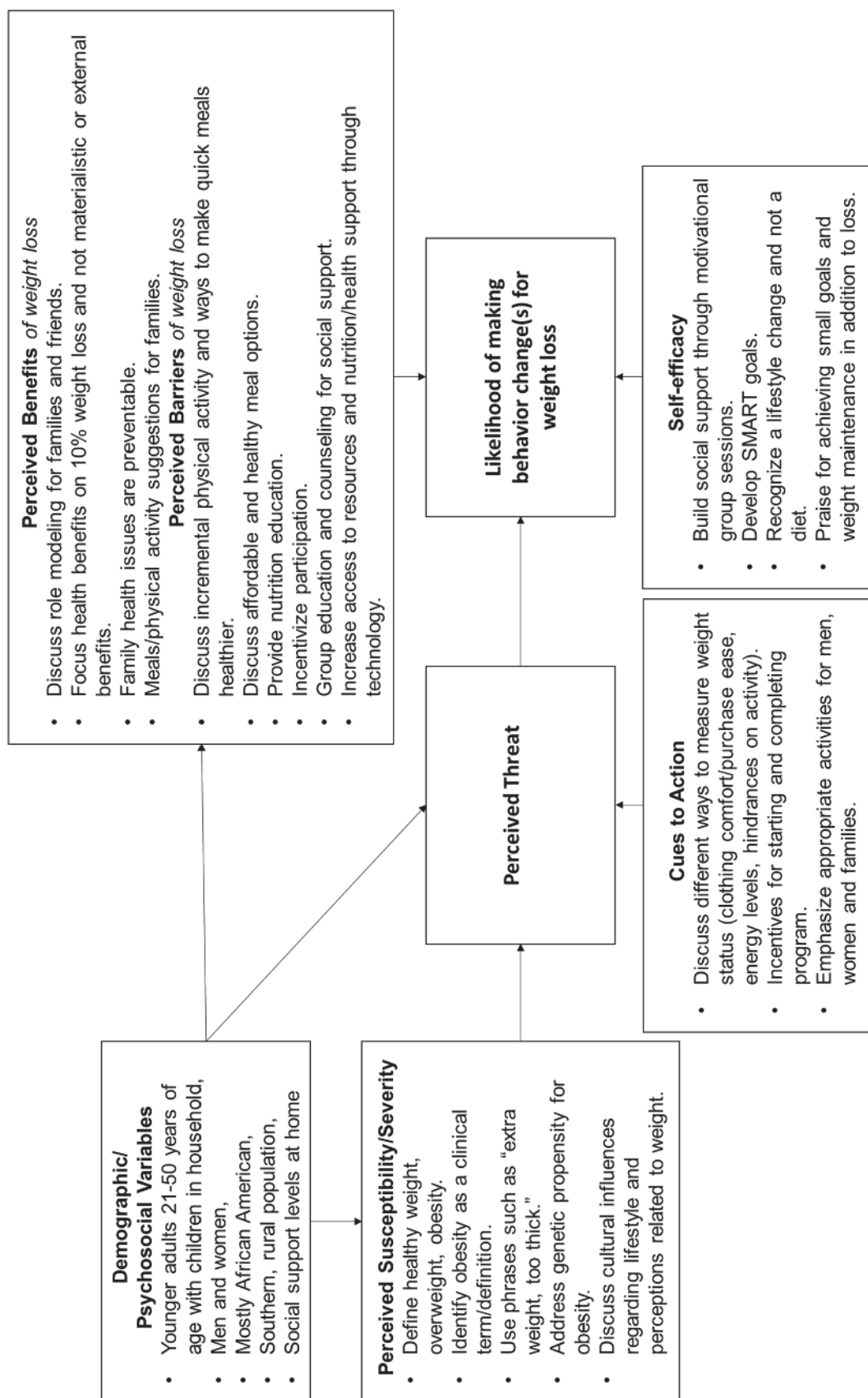


Figure 1. The Church Bridge Project application of the health belief model in a church-based weight loss intervention project.



While their parents were engaged in these sessions, children would be offered a parallel children's program with child-friendly activities through the efforts of extension services and church leaders. The participants would have the opportunity to be weighed either before or after the sessions, and a healthy snack would be offered after the session ended.

**Session Content.** Each participant would receive a booklet with education session handouts/supplementary materials and MI session worksheets. Table 2 outlines the 12 adapted education topics and corresponding MI sessions. The education component was intended to solely serve as an interactive education message, and the motivational session included the behavior change component. For example, for session 1, participants would learn the health benefits of modest (10%) weight loss and the relationship between BMI and calculate their own 10% weight loss goal. The corresponding MI session would explore participants' knowledge about the relationships among diet, physical activity, and health, as well as the meaning of the word *diet*. As sessions progressed, the MI sessions focused on developing specific, measurable, attainable,

realistic, and time-appropriate diet and physical activity goals. The MI worksheets facilitated the individualized flow of the group session by allowing each participant to, for example, list a) how it felt to achieve a goal in the past, b) behaviors participants would like to change, c) goals to be achieved by the next session, d) strategies for increasing self-confidence and e) recognizing barriers of individual goal achievement. Corresponding with the education session topics, MI sessions were to first begin with diet-related goal setting and include physical activity goal setting once the topic was addressed in the educational session.

### Human Subjects and Registration

All procedures and protocol described hereinafter were approved by the university's institutional review board (original protocol number CH-R15051904). All investigators, consultants, and students who were integral to data collection procedures and implementation completed required research integrity and human subjects training. According to the National Institutes of Health definition, this project was considered a clinical trial and was registered at ClinicalTrials.gov (identifier: NCT02773069).

### Sample and Recruitment

The target community is the 53rd most populated county (out of 82) in Mississippi with a population of 17,978 reported in 2015.<sup>23</sup> Of the residents in this county, 19.6% are Black, and approximately 49.9% of the population is between the ages of 18 and 54 years, with a median income of \$45,025.<sup>23</sup> The target population is described further in Table 3. The goal of this project was to recruit 50 young adult (ages 18 to 50 years) African Americans (50% men) who had elementary school-aged children. Exclusion criteria included minors younger than 18 years of age, individuals with a BMI of greater than 30 kg/m<sup>2</sup>, and those who were not cleared for participation owing to weight loss contraindications (i.e., pregnancy, severe diseases). We used two primary site types to recruit participants: the church/community and outpatient primary care provider (O-PCP) clinics.

O-PCP clinics were initially identified by the research team using the Internet and phonebook directories. The list was then verified by the executive team and a medical doctor consultant. Church leaders identified specific providers who

**Table 2. Church Bridge Project Education and Motivational Session Topics**

Session Number	Education Session Title	Motivational Session Title
1	Introduction to Weight Management	Exploring the Diet-Disease Relationship
2	Be a Fat and Calorie Detective	[Insert Participant Name]'s Dietary Goals
3	Ways to Eat Less Fat and Fewer Calories	My SMART Diet Goals
4	Healthy Eating	My SMART Diet Goals
5	Move Those Muscles	My SMART Diet Goals
6	Being Active—A Way of Life	My SMART Diet and Physical Activity Goals
7	Tip the Calorie Balance	My SMART Diet and Physical Activity Goals
8	Take Charge of What's Around You	My SMART Diet and Physical Activity Goals
9	Four Keys to Healthy Eating Out	My Eating Goals
10	Jump Start Your Activity Plan	My SMART Diet and Physical Activity Goals
11	You Can Manage Stress	My SMART Goals
12	Ways to Stay Motivated	My SMART Goals

**Table 3. Comparison of Target Population of Interest to Study Population**

	Target Population, 2015 <sup>20</sup>	Study Population
Female (%)	50.0	85.7 <sup>a</sup>
Median age (y)	36.8	35.5 <sup>b</sup>
Uninsured (%)	18.0	14.3 <sup>a</sup>
At least some college (%)	47.0	87.5 <sup>b</sup>
Obesity prevalence (%)	36.0	100.0 <sup>b</sup>
Diabetes prevalence (%)	12.0	6.3 <sup>b</sup>
Poor to fair health (%)	17.0	26.31 <sup>b</sup>
Smokers	18.0	12.5 <sup>b</sup>

<sup>a</sup>Data are derived from enrollment data ( $n = 42$ ).

<sup>b</sup>Data are derived from baseline data ( $n = 16$ ).

were viewed as predominantly serving the target population. Four primary care clinics and one hospital (which included an outpatient arm) in the target community were contacted for recruitment. A recruitment packet was created per clinic administration request and distributed among participating clinics; the packet included a letter from the executive team describing the project, frequently asked questions sheet, promotional flyer, and calendar of events. The recruitment packet also detailed incentives of program participation, including health benefits, nutrition/physical activity tips, free food and beverages, and free use of an iPhone during the program period. The O-PCP recruitment process began March 2016, approximately 6 months before intervention implementation.

Church recruitment strategies included word-of-mouth and active recruitment through summer kick-off events. The executive team planned three community events held June and July 2016 and included brief, child-directed nutrition activities to promote healthy snacks and beverages; these sessions were delivered by graduate students. The purpose was to recruit parents of elementary-aged children. Word-of-mouth recruitment occurred from July to August 2016; church leaders would talk to community members about the project and distribute recruitment packet materials. Church members collected contact information from interested potential participants and a follow-up call was conducted by graduate research assistants.

## Screening and Enrollment

Potential participants contacted by graduate research assistants were screened and enrolled. The process consisted of a brief, verbal overview of the project as well as a series of questions that excluded those younger than 18 and older than 50 years of age, women who were pregnant or had been pregnant in the previous 6 months, and those who had not received an annual wellness examination by the start of the program. Those without an annual wellness visit within 1 year before the start of the program were required to have a medical clearance form from their physician on file. People who were uninsured without an annual wellness visit were referred to a participating federally qualified health clinic to obtain a wellness visit, which was reimbursed through the grant. Once participants were deemed conditionally eligible to participate, upon verification of BMI, they were officially enrolled in the program and assigned a random identification number. Enrolled female participants were asked if they knew of a male who might be interested in the program to improve male enrollment. The process lasted approximately 6 weeks.

## Orientation

An orientation was held in the week before the first program session. All participants were given a program booklet that served to facilitate program delivery. The book included program FAQs, participant requirements and expectations, sessions calendar, staff contact information, and handouts/additional materials for all program sessions. Informed consent was obtained to participate in the program, and baseline anthropometric measurements (described elsewhere in this article) were collected. Upon consent, participants were loaned an iPhone that served as a mode for survey and dietary data collection, participant monitoring, and feedback.

## Data Collection

All data were collected by trained graduate research assistants (most of whom were registered dietitians) and one undergraduate student. Baseline data was collected in September 2016 at the start of the program with post data collection planned for February 2017 and a follow-up in November 2017.

*Anthropometric Data Collection.* Height was collected once at orientation using a portable stadiometer and measured in inches, to the nearest quarter inch. Weight and girth circumferences (waist, abdomen, and hip) were collected at orientation and were to be collected at each session. Weight was measured in pounds to the nearest tenth and circumferences were measured in inches to the nearest tenth. Waist was measured at the point above the umbilicus and below the last rib. Abdomen was measured at the point below the umbilicus and above the iliac crest. Hip was measured at the widest point of the buttocks. The English units that were used to facilitate communication between research staff and participants were later converted to metric units.

*Survey Data Collection.* Validated and well-known survey tools were used to collect demographic and medical and weight history, stage of change for weight loss,<sup>24</sup> eating habits and exercise social support and self-efficacy,<sup>25,26</sup> physical activity behaviors (using the International Physical Activity Questionnaire),<sup>27,28</sup> and health-related quality of life (using the MOS 20-item Short-form Health Survey).<sup>29</sup> Surveys were completed through a developed mobile application.

*Dietary Data Collection.* Dietary data were collected through the mobile application and mirrored the 24-hour recall method. Participants were instructed to enter at least two weekdays and one weekend day. A registered dietitian reviewed all dietary data daily, and any dietary recall follow-up required was conducted via phone call.

### Statistical Analysis

The primary outcome and unit of analysis is individual weight changes over the course of the intervention and maintenance period. Considering the feasibility nature of this study, a power analysis was conducted based on one group comparison of means. Based on a large effect size (0.8), significance level ( $\alpha = 0.05$ ), and power ( $1 - \beta = 0.95$ ), a priori estimate is 20 participants. Considering a conservative estimate of 30% attrition rate, the final 25 participants which supported the project goal to achieve 25 men and 25 women to be able to investigate group differences in weight loss and have equal representation of both genders. Descriptive data were analyzed using IBM SPSS 24.0 (SPSS, Inc, Chicago, IL)

to describe baseline data by providing means, standard deviations, frequencies, and percentages of observations.

### RESULTS

One O-PCP clinic declined recruitment participation owing to offering a competing “biggest loser” program, and no participants were recruited from the remaining four O-PCP clinics. Contact information was received for 64 potential participants from church members. Of 64 potential participants, 43 (68.8%) were enrolled in the study and 21 were unable to be reached via phone call. One of the enrolled participants learned of the program at the summer kick-off events, and the remaining ( $n = 42$ ) learned of the program through church leaders. Of the majority of African American participants ( $n = 42$ ) enrolled, 35 (83%) declared having a family physician and 36 had insurance (85.7%); and fewer ( $n = 26$ , 61.9%) reported having attended a wellness visit in the past year.

Sixteen African American participants (of the 42 [38.1%]) completed orientation and baseline data collection. The mean  $\pm$  SD age of participants was  $34.31 \pm 8.86$  years, with most having either at least some college ( $n = 3$  [18.8%]), a 2-year/vocational degree ( $n = 6$  [37.5%]), or a 4-year degree/or higher ( $n = 5$  [31.3%]). Most reported an individual yearly income of between \$0 and \$59,000 ( $n = 12$  [75.0%]) and three (18.8%) reported being unemployed. Nine participants (56.3%) were married or living with a partner. Hypertension was prevalent (37.5%) among the participants in the sample, and a majority (75.0% and 87.5%, respectively) self-reported family histories of both diabetes and hypertension among first-degree relatives (Table 4). Only two participants reported a positive smoking history within the last 12 months, and the mean age  $\pm$  SD they started smoking was  $19.0 \pm 1.0$ . The mean  $\pm$  SD hours of sleep each night was  $6.4 \pm 1.2$ . The majority (43.8%) of participants were classified in the class III obesity category, followed by class 1 (Table 5).

### DISCUSSION

All participants were recruited with the assistance of church leaders and by word of mouth. Thus, churches reached 100% of our participants, which was double our original hypothesis that 50% of participants would be recruited from O-PCP settings. Twenty-six percent of participants referred by



**Table 4. Most Predominant Obesity-Related Personal and Family Medical History Reported by Baseline Participants ( $n = 16$ )**

Condition	Self-Reported, Yes, $n$ (%)	Immediate Family History, Yes, $n$ (%)
Hypertension	6 (37.5)	14 (87.5)
Diabetes	1 (6.3)	12 (75.0)
Myocardial infarction/stroke	0 (0.0)	7 (43.8)
Hypercholesterolemia <sup>a</sup>	1 (6.3)	7 (43.8)
Hypertriglyceridemia <sup>a</sup>	1 (6.3)	3 (18.8)

<sup>a</sup>“Not Sure” was commonly selected regarding immediate family history with regard to hypercholesterolemia ( $n = 5$  [31.3%]) and hypertriglyceridemia ( $n = 8$  [50.0%]).

**Table 5. Anthropometric and BMI Data of Baseline Participants ( $n = 16$ )**

Variable	$n$ (%)	Mean $\pm$ SD
Height (m)	—	1.66 $\pm$ 0.07
Weight (kg)	—	106.3 $\pm$ 17.5
Waist circumference (cm)	—	100.6 $\pm$ 9.6
Abdomen circumference (cm)	—	114.1 $\pm$ 13.5
Hip circumference (cm)	—	122.8 $\pm$ 14.0
BMI (kg/m <sup>2</sup> )	—	38.5 $\pm$ 65.3
Waist-to-hip ratio	—	0.82 $\pm$ 0.05
<b>BMI classification</b>		
Class I (BMI 30.0-34.9 kg/m <sup>2</sup> )	6 (37.5)	
Class II (BMI 35.0-39.9 kg/m <sup>2</sup> )	3 (18.8)	
Class III (BMI $\geq$ 40.0 kg/m <sup>2</sup> )	7 (43.8)	—

Abbreviation: BMI, body mass index.

community members completed baseline data collection. Our sample was predominantly female, which is consistent with the African American, church-based literature.<sup>30,31</sup> Participants who completed baseline data collection were more educated, had a lower prevalence of diabetes, and reported higher rates of poor to fair health compared with the target population (Table 3).

Although males may be more difficult to recruit, we found a unique body-building culture among the target community and, thus, many of the potential male participants that church leaders encountered were deemed ineligible for the study and not approached to participate. Our recruitment efforts focused

on requesting enrolled female participants to recommend other eligible males in their families. Although this strategy did result in two to three husbands being recruited, most participants reported not being able to think of any males to refer to the program. Last, two male church leaders were involved with actively recruiting participants for the project despite our limited success with male participants.

Through the enrollment process, we did not collect education levels, and it would have been interesting to see if there were differences between those who committed to the study and those who did not; however, education level was not a factor in willingness to attend church-based health promotion activities among a larger sample ( $n = 1,274$ ) of African Americans.<sup>32</sup> It is also well-established that diabetes prevalence is associated with advanced age<sup>33</sup> and, thus, the lower prevalence among our recruited population is not surprising, and it, in fact, supports health promotion intervention intended to prevent disease among this population, especially because immediate family medical history data supports a high prevalence of hypertension and diabetes. Last, obesity is associated with lower perception of health status,<sup>34</sup> which seems to be a consistent phenomenon in our population compared with the target population.

### Limitations and Challenges

Church leaders viewed participant commitment to the program as one of the greatest challenges. Although the church leaders were most successful at recruiting participants compared with the O-PCP clinics, it was a surprise for church leaders to experience how difficult it was for young adult participants to enroll and complete baseline requirements to participate in the study. There was a large difference between the number of participants enrolled in the program and the number who completed orientation and baseline data collection. Executive team church leaders actively assisted our research staff in following up with participants and delivered one-on-one recruitment strategies. The church leaders would report “how busy” the target age group was and, at times, would become quite frustrated with what seemed to be “a lack of commitment to their own health.” Church leaders remained solid in the idea that “if a person really wanted to improve their health [by attending a lifestyle management program], they could and the benefits would far outweigh

any perceived burdens” (e.g., feeling too busy to participate). Leaders learned that it was very important to maintain one-on-one communication with participants to encourage them to participate in the study, which is supported in the CBPR literature.<sup>35,36</sup>

A major challenge identified through recruitment was obtaining participation from the O-PCP clinics. Our team worked with administrative personnel to develop an extensive recruitment packet for clinic administration to deliver to potential participants. Our research team would follow-up with the clinics weekly to determine how many packets had been distributed during the week and, each time, they were informed that no packets had been distributed. There remains to be much work needed to develop an effective relationship with O-PCP clinics and church-based health promotion programs. Time and labor demands are major barriers identified for health promotion activities within O-PCP clinic settings<sup>37</sup> and, thus, our own reported experiences O-PCP clinics are not surprising. A potential solution could be to develop more flexible health policies that allow for reimbursement of weight management programs delivered outside of the O-PCP clinic setting, especially for health disparate, rural, and under-resourced communities, such as those in Mississippi and other southern states.

One limitation of the study is the sample size of participants who committed to the program at baseline. Although church leaders alone were able to reach approximately 3.6% of the target population (based on the estimate that approximately 1,762 county residents identify as black within the range of 18 and 54 years), it was more difficult to obtain commitment and consent to participate from recruited participants. A study<sup>32</sup> examining congregation members’ willingness to attend health promotion in African American churches reported that younger congregants were less likely to attend health ministry programs. One of the primary aims of the study was to test the ability of the church to reach a young adult population. Our recruitment experiences and baseline results support the difficulty of this endeavor, which could be a possible reason why most church-based, health promotion studies in African American churches are predominantly older populations.<sup>35</sup>

Church leaders in this partnership were uninterested in delivering education sessions and were more amenable to providing support of program delivery. Additionally,

church leaders were dedicated to the partnership’s mission; however, as noted by our community co-investigator, the church leaders preferred to be “led” to accomplish research tasks and although they were comfortable informing research directions, they were not comfortable making research-related decisions without the guidance of the principal investigator. Project progression required immense program coordination to maintain working relationships and to motivate and obtain updates from church leaders with regard to their tasks. When referencing the community engagement continuum, we feel that we were able to accomplish a “collaborative participation” from our community groups. However, it may take more time and potentially more research training of community partners to “empower” them to make final decisions.<sup>38</sup> It may be that achieving empowerment is not realistic in smaller, underserved communities with limited resources and infrastructure and, as long as the collaborative spirit is maintained, the essence of CBPR is achieved.

## RECOMMENDATIONS AND CONCLUSIONS

It may be that an intervention bound by place is inappropriate for this younger population, which may justify exploration into the use of other modalities, such as mobile health interventions, to deliver weight management programs; participant engagement then becomes the issue at hand.<sup>39</sup> It would also be useful to further explore the lack of willingness to participate in church-based health promotion activities among young adults. As for working with church leaders, researchers need to consider what level of decision making their partners are comfortable with and explore training activities and other opportunities to truly empower communities to make final decisions. Through this exploration, more effective strategies may be identified to enroll and recruit young adult African Americans and to enhance the operating ability of community partners to support disease prevention research earlier in life to maximize quality of life health benefits and prevent chronic diseases. Our study addressed and challenged the ability of the church to reach young adults and, despite these difficulties, our partnership remains dedicated to the mission of health promotion to improve the community.

From our prior focus group work with church pastors and leaders,<sup>22</sup> it was noted that, although church leaders do value their role in research, academics are needed to enhance

the credibility of the program being offered, especially when church leaders may not feel they are health role models themselves. This idea supports why church leaders did not feel comfortable with program delivery and may also explain why reached participants did not commit to the program by completing baseline data collection. In our case, it may be that researchers underestimated their own influence in the community and church leaders may have needed more involvement from researchers to “seal the deal” with regard to participant recruitment. Additionally, if church leaders had greater confidence in their understanding of and contribution to the research process, they might have served as better advocates for program recruitment; therefore, our experiences indicate it is not enough for community members to engage in CBPR solely with community expertise, especially if they are to provide valuable input into a collaborative process. Based on lessons learned, we would like to make a series of recommendations to adapt our process. First, we would require church leaders to engage in a research-oriented training before program planning and recruitment. Second, although church leaders may have an intimate working relationship with researchers, this may not translate to the greater community. We recommend building an academic presence in the community through brief informational sessions during usual church business/events or health fair activities before and after major events, such as Bible study or other group activities. Third, using a student intervention delivery model may be more appealing for church leaders because it removes them from being responsible for program delivery and offers a rewarding opportunity to contribute to the education experience of future professionals. An additional benefit would be that a student delivery model typically aligns with the goals of academic institutions to prepare students for postgraduate employment, and offers exposure to research and community-based applications of academic studies.

The recruitment processes and baseline results of the Church Bridge Project implemented via an academic-community partnership are reported. Community members were involved in the project planning, decision-making, and implementation phases. The target community had not been involved in church-based, health promotion research activities in the past. This study truly highlights the challenges of a new community-academic partnership and the reality of the

potential hardships involved in similar situations and partnerships attempting to conduct health promotion research in areas untouched by research-related activities.

## ACKNOWLEDGMENTS

The authors acknowledge the church pastors and leaders (Pastor David Graves, Ms. Mary Hinton, Ms. Jessie Evans, Mr. Darrell Berry, Mr. Chris Fairley, and Ms. Lakeisha Graves), who were integral to the development, planning and recruitment for the program. Dr. Judith Breland and Dr. James Griffin also contributed their time and expertise to the program planning and development. We extend our appreciation to Mr. Davis Townsend and all the graduate and undergraduate students who contributed to program delivery and data collection.

## FUNDING DISCLOSURE

Research reported in this publication was supported by the National Institute on Minority Health and Health Disparities of the National Institutes of Health under Award Number 15MD010213. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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