



Published in final edited form as:

Diabetes Educ. 2013 ; 39(6): 776–785. doi:10.1177/0145721713507114.

Implementation of the *Power to Prevent* Diabetes Prevention Educational Curriculum Into Rural African American Communities: A Feasibility Study

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Abstract

Purpose—The purpose of this study was to describe the feasibility of using a Community Based Participatory Research (CBPR) approach to implement the *Power to Prevent (P2P)* diabetes prevention education curriculum in rural African American (AA) settings.

Methods—Trained community health workers facilitated the 12-session *P2P* curriculum across 3 community settings. Quantitative (based on the pre- and post- curriculum questionnaires and changes in blood glucose, blood pressure (BP), and weight at baseline and 6-months) and qualitative data (based on semi-structured interviews with facilitators) were collected. Indicators of feasibility included: demand, acceptability, implementation fidelity and limited efficacy testing.

Results—Across 3 counties, 104 AA participants were recruited; 43% completed 75% of the sessions. There was great demand for the program. Fifteen community health ambassadors (CHAs) were trained; and 4 served as curriculum facilitators. Content and structure of the intervention was acceptable to facilitators but there were challenges to implementing the program as designed. Improvements were seen in diabetes knowledge and the impact of healthy eating and physical activity on diabetes prevention, but there were no significant changes in blood glucose, BP, or weight.

Conclusion—While it is feasible to use a CBPR approach to recruit participants and implement the *P2P* curriculum in AA community settings, there are significant challenges which must be overcome.

Type 2 Diabetes (Diabetes) is a significant public health problem in the United States, affecting more than 25 million people.¹ African Americans (AA) bear a disproportionate burden of the diabetes epidemic. They are twice as likely to have diabetes compared to non-

Hispanic whites, have worse diabetes control, and higher complication rates.² Identifying strategies to prevent diabetes in AA is a national public health priority.

The Diabetes Prevention Program (DPP) was a multi-center randomized clinical trial designed to evaluate the safety and efficacy of interventions to delay or prevent diabetes in high-risk individuals.³ The trial showed that people can reduce their diabetes risk more through lifestyle modification than with medication. The lifestyle modification curriculum of the DPP consisted of 16 sessions delivered to individuals to teach participants how to improve their diet, lower fat intake, increase exercise, and modify their behavior to achieve a healthy lifestyle. To translate the effective lifestyle modification principles and strategies employed by DPP, the National Diabetes Education Program developed a comprehensive curriculum called *Power to Prevent (P2P): A Family Lifestyle Approach to Diabetes Prevention*⁴ which is intended for use with AA. Previous studies have described implementation of the DPP-based lifestyle curriculum⁵ or a modified version of the curriculum with AA in faith-based settings.^{6, 7} Furthermore, the National Diabetes Education Program has spotlighted several organizations that are using the P2P curriculum in community settings.⁸ However, to our knowledge, there are no published data describing feasibility and outcomes of using the P2P curriculum, which employs proven strategies and tools from the DPP lifestyle program, in research. Feasibility studies are useful for helping decide whether an evidence-based intervention will work when implemented in target communities. Feasibility studies such as this are particularly helpful since there are few previously published studies using a certain intervention or approach.⁹ The aim of this study was to describe the feasibility of using a Community Based Participatory Research (CBPR) approach to implement the *P2P* curriculum in rural AA settings.

Methods

Research Design

We used a community based participatory research (CBPR) approach to conduct this study. CBPR is a collaborative approach to research that equitably involves all partners in the research process and recognizes the strengths each brings. CBPR begins with a research topic of importance to the community and aims to combine knowledge and action for social change to improve community health and eliminate health disparities.¹⁰ Because the P2P curriculum was designed for use in African American community settings, we felt that use of a CBPR approach involving an academic-community partnership would be invaluable for: 1) allowing the researchers to better understand important contextual factors within the local communities that could impact study implementation and outcomes; 2) ensuring that the study design and implementation was responsive to the needs and resources of the target community; and 3) maximizing the chances that the study “reached” the target population and that the intervention was delivered in a culturally relevant manner by trusted members of the community; 4) building community capacity by enhancing knowledge of and training local community members in evidence-based diabetes prevention educational strategies.

Partnership

The work was conducted through an academic-community partnership. Our community partners included the pastor of a large AA church who also founded an organization which provides health education, health promotion and disease prevention activities in the AA community; the founder and director of a non-profit community-based organization focused on nutrition and health education; and a community-based consulting company which facilitates collaborations between communities, school systems and research universities by providing health education and outreach, including data collection services; and physician-researchers with expertise in CBPR and health disparities related to diabetes, cardiovascular disease (CVD) and other chronic illnesses. The community-academic research team has long-standing relationships with the target communities, a proven track record of success in providing health-related programming in diabetes and CVD risk reduction, and experience working together on other CBPR projects. The team met biweekly during planning and implementation of the project and worked collaboratively on all phases of this research, including preparation of this manuscript. This research project was approved by the Institutional Review Board at the University of North Carolina at Chapel Hill.

Participants

Our goal was to recruit 20 high-risk participants per site (across 3 counties), for a total of 80 participants to receive the educational intervention. Inclusion criteria for participants were as follows: 1) AA males or females; 2) age 21 and older; 3) high risk for diabetes based on the 7-item American Diabetes Associations' risk calculator¹¹ or self-reported diabetes; and 4) able to read and speak English. The community partners were responsible for participant recruitment. Participants were recruited through local churches (e.g. presentations from the research team during church-sponsored events), community organizations, word of mouth, fliers and radio advertisements. Community partners were also responsible for recruiting other local organizations who would provide space to host the sessions and who would commit to making health promoting policy changes in their organizations. Organizations were not given financial incentives; however, study participants did receive non-monetary incentives (e.g. water bottles, pedometers, cookbooks, exercise bands, etc.).

Description of Power to Prevent (P2P) Curriculum

During the planning phase, our community-academic research team critically evaluated several evidence-based diabetes prevention curricula (e.g. Body and Soul, Eat Smart, Move More, etc.) prior to selecting the curriculum we would use for the intervention. The *P2P* curriculum was selected because it was: 1) comprehensive, including supplementary and evaluation materials, 2) easily accessible and free to download, 3) designed for AA, and 4) suitable for delivery in faith- and non-faith-based settings.

The curriculum consists of twelve 60–90 minute interactive sessions designed to: 1) encourage high risk AA to use lifestyle modifications to prevent or delay the onset of diabetes; and 2) encourage those with diabetes to learn skills to better control their blood glucose levels.⁴ Facilitators lead small groups through the sessions using the fat and calorie counter and food and activity tracker as key tools for facilitating behavior change. Suggested curriculum delivery is weekly for sessions 1–6 and then monthly for sessions 7–12. The

main evaluation tools for the curriculum include a pre- and post- curriculum questionnaire, as well as pre- and post- questionnaires for sessions 3, 4, 6, and 11. Detail on the curriculum is available at www.ndep.nih.gov.⁴

Study Implementation

The curriculum was delivered in group settings. There were 4 groups of AA adult participants across 3 rural socioeconomically disadvantaged counties in northeastern North Carolina.¹² Key socio-demographic characteristics of these counties compared to the entire state are presented in Table 1. Curriculum sessions were held at 2 churches and 1 non-profit community organization dedicated to serving socioeconomically disadvantaged persons by providing health-related and social services. Our goal was to recruit and train 10–12 adult peer educators, called Community Health Ambassadors (CHAs) who would serve as a pool from which we would draw facilitators for the curriculum. The CHAs must be residents of the local communities in which the study occurred. We sought individuals with prior or current experience working in various areas of health (e.g. health educators, school nurses, social workers, nutritionists, etc.), although this was not a requirement to be a CHA. CHAs did not need special training or expertise in Diabetes since the curriculum was designed for use by non-professionals. All CHAs had to express interest in improving the health of their communities, particularly the burden of illness due to diabetes. The CHAs received specific training on the P2P curriculum by the academic partners (including a physician) and were further trained using Maxwell's 5 M (Model, Mentor, Monitor, Motivate, and Multiply) training model¹³ (not part of the P2P curriculum) in techniques to engage faith-based and community organizations in adopting and implementing health-promoting policy changes within their organizations. Each CHA who served as a curriculum facilitator received a \$100 stipend for their involvement.

Data Collection

The guidelines used to assess the feasibility of this study were informed by the work of Bowen and colleagues.⁹ Both quantitative (based on the P2P pre- and post- curriculum questionnaires, as well as measured risk factors) and qualitative data were collected to assess feasibility of delivering the curriculum using a CBPR approach. A copy of the pre- and post-curriculum questionnaire is included as an appendix. The following indicators of feasibility were considered: demand, acceptability, and implementation. Limited efficacy data on changes in participant characteristics as a result of the intervention are also provided.

Research staff trained in appropriate blood pressure (BP) measurement techniques measured systolic and diastolic BP after the participant had been seated for 5 minutes using an automatic BP cuff (Omron, Lake Forest, Illinois). Blood glucose levels were measured by a random finger stick blood glucose using a glucometer (OneTouch Ultra 2, Milpitas, California). Participants self-reported their height; and research staff measured weight and used these data to calculate body mass index (BMI). Individual interviews were conducted with facilitators to gather their perspectives on the program and suggestions for improvement. The interview guide contained 20 questions. Interviews lasted 35–60 minutes, were audio-recorded and transcribed verbatim.

Data Analysis

Data were analyzed using quantitative and qualitative methods. Pre-post comparisons were performed using McNemar test for dichotomous outcomes and paired *t* test for continuous outcomes, with adjustment for clustering within sites. Differences between baseline and 6-month values for weight, BMI, BP, and blood glucose were assessed. Statistical significance was determined using a $p < 0.05$ value. Given the pilot nature of this project, multivariate statistics were not performed on these outcomes. Facilitator interview transcripts were read and coded for thematic content by two independent coders. When there was ambiguity or coders differed in their assignment of a thematic category, coders met with a third party to discuss the issue and reach consensus. Thematic content was compared across the sites. Reported themes were consistent across sites unless otherwise specified.

Results

Feasibility Testing

Demand—This area of focus is assessed by documenting the use of selected intervention activities in a defined population. Two churches and one non-faith based community organization helped with recruitment and provided space for the sessions. In addition, 12 church pastors signed letters of intent agreeing to implement health-promoting changes (e.g., serving healthier food and drinks, explicitly encouraging adoption of healthier lifestyles) at church-sponsored events. Six of 12 churches now offer healthier food options (e.g. water, fresh fruits), exercise programs, and present health messages focused on nutrition and exercise during worship services and other community events.

Acceptability—This area of focus examines how those involved in implementing the program and intended recipients react to the intervention.⁹ Based on the qualitative interviews with the CHA facilitators, three major themes emerged with respect to factors which enhanced participation by the target group: *structure, resources, and facilitator characteristics*. CHAs noted that the 60–90 minute sessions were optimal for delivering the curricular content. In addition, facilitators noted that the smaller group sizes at two of the sites facilitated interaction between group members. They also felt that the material was easily understood. One facilitator said, “None of it was like PhD material and it wasn’t kindergarten either, you know what I mean. It was a fine balance in between.” The “family focused” nature of the curriculum was felt to be beneficial. In fact, some participants brought family members who were not part of the intervention to the sessions.

With regards to resources, CHAs felt that the ability to provide transportation to and from sessions was particularly important since many participants either did not have transportation or did not drive at night (when the sessions were held at one site). In addition, providing healthy food at all sessions and incentives specific to the behavioral objectives of the program was felt to be beneficial. Lastly, CHAs perceived that because they were indigenous to the communities and had health-related backgrounds, they were able to explain information in culturally relevant terms that were easily understood, thereby evoking more trust from participants.

One main theme emerged related to barriers to participation in the program. Facilitators perceived that many participants were overwhelmed by the need to utilize the fat and calorie counter and food and activity trackers. One facilitator stated, “that was one of the hardest parts [for participants] – keeping up with their homework.” Facilitators felt that high rates of low or inadequate literacy made many participants less likely to utilize these tools, which required that they be able to read and understand food labels and write. In addition, low literacy concerns among participants at the largest site were also thought to result in excess facilitator burden because facilitators had to devote time to reading questionnaires aloud to participants and recording the responses.

Implementation—This focus area examines the extent and manner in which an intervention is implemented as planned. We exceeded our target for CHA recruitment. Fifteen CHAs were successfully recruited and trained. Four of these CHAs (3 AA and 1 Caucasian) served as curriculum facilitators. All were women aged 21 or older who resided in the local communities and had health backgrounds (i.e., school nurse, health educator, nutritionist). Across the 3 sites, 104 AA adults were recruited to participate in the intervention. The 12 sessions of the P2P curriculum were delivered over 7.5 months. Facilitators administered the pre- and post-curriculum questionnaires as planned; however, they did not administer the pre- and post-*session* questionnaires that were included in the curriculum (secondary to time constraints and literacy concerns). The food and activity trackers and food and calorie counters- key teaching tools for behavior change- also were not consistently administered to participants at one of the sites. The facilitators at all sites utilized several of the suggested or optional curriculum activities (e.g., inviting chefs, dieticians, and nurses as guest speakers).

Limited-efficacy testing—This area of focus describes the results obtained by testing an intervention in a limited way (e.g., using a convenience sample, shorter follow-up period, intermediate rather than final outcomes or with limited statistical power). The mean age of the sample (N=104) was 57 years, 75% were female, 24% completed high school or received a GED, and 46% had self-reported diabetes. Table 2 compares participant characteristics by site. There were significant differences by site in mean age, percent female, annual income, and percent with health insurance. Table 3 shows participation rates overall and by site. Out of the 104 participants, 45 (43%) attended 75% of sessions. Thirty participants had complete data for the pre- and post-curriculum questionnaire and baseline and 6-month BP, glucose and weight/BMI. A higher percentage of participants who dropped out of the program had less than a high school education (35% vs. 8%; $p=0.02$) and there were significant differences in drop-outs by site (data not shown); otherwise, there were no significant differences between drop-outs and completers.

The impact of the intervention on changes in knowledge, health behaviors and risk factor levels were examined. The average percent correct score on the diabetes knowledge questionnaire increased significantly from 64% at baseline to 80% at 6 months ($p < 0.01$). There were no significant changes in participants’ self-reported goals and expectations about diabetes prevention. However, there was significant improvement in knowledge of the

impact of healthy eating (mean difference $+0.68 \pm \text{SD } 1.1$; $p = 0.002$) and physical activity (mean difference $+0.57 \pm \text{SD } 1.2$; $p = 0.02$) on diabetes prevention.

There were no significant changes in mean BP, random blood glucose or weight/BMI from baseline to 6 months. Mean self-reported number of days per week with 30 minutes or more of physical activity did not significantly increase (“pre” mean number of days 2.5 ± 0.9 ; “post” mean number of days 2.7 ± 0.9 ; $p=0.85$). However, participants’ self-reported level of physical activity in the past week increased from baseline and trended towards significance (mean difference $+0.45 \pm 1.1$; $p=0.076$).

Conclusions

African Americans are a high-risk group for the development of diabetes and its complications. Efforts to reduce the burden of diabetes in this group are of great public health and clinical relevance. Initiatives focused on lifestyle modification and conducted with faith-based communities have demonstrated success in promoting healthy behaviors in AA communities.^{14, 15} This study was conducted to examine the feasibility of using a CBPR approach to implement the *P2P* curriculum in both faith- and non-faith based settings with AA from rural communities. The Centers for Disease Control and Prevention¹⁶ and the Institute of Medicine¹⁷ recommend the use and value of community health workers in health promotion interventions. There is demand for this type intervention and that this intervention was acceptable to the CHAs responsible for implementation. It is feasible to use the curriculum for educational purposes in both faith- and non-faith based community settings using community health workers. However, fidelity and adherence to intervention protocols was somewhat challenging and there are noteworthy considerations for those who intend to test the impact of the curriculum in real-world settings.

Using a CBPR approach, the intervention successfully reached our target population of community-dwelling AA adults who were high-risk for or diagnosed with Diabetes. However, it was difficult to retain participants in the program for the entire study duration, despite efforts to mitigate barriers to retention (e.g., providing transportation, having the sessions at a convenient venue and time). This was likely because we delivered the *P2P* curriculum over 7 ½ months whereas other studies delivered their curricula over a shorter timeframe (3 or 4 months) and because monetary incentives could not be provided due to stipulations of the funder. No published studies could be found describing implementation of the unmodified *P2P* curriculum in community settings. However, compared with other community-based studies which implemented the DPP-based lifestyle curriculum,^{6, 7, 18} or a modified (i.e. shortened) version of the *P2P* curriculum¹⁹ our “reach” (i.e. sample size) was comparable or greater; however, our retention rate was lower. Our findings highlight the fact that although partnering with community organizations may improve recruitment of African Americans in research, this approach may not be sufficient to ensure their retention.

Our high dropout rate and small analytic sample size had adverse consequences because there was a lack of statistical power to demonstrate true differences. Given this, the fact that this study was able to show significant improvements in diabetes knowledge and in the impact of healthy eating and physical activity on diabetes prevention is noteworthy.

Although this was a feasibility study with limited-efficacy testing, it raises important questions about the best ways to ensure retention in behavioral interventions, particularly when working with socioeconomically disadvantaged communities where there are many competing priorities and limited resources. Others who deliver this curriculum in its original form might consider increasing the incentives for participation or altering the format so that the time commitment is less onerous. Maintaining contact with participants (e.g. via newsletters, phone calls) between sessions, especially when the sessions switch from weekly to monthly may also help to improve retention.

It was difficult to get many of the participants to consistently utilize the food and activity trackers and fat and calorie counters- the key behavior modification tools- and to share their experiences using these tools with others in the group. Unfortunately, quantitative data on the prevalence of non-adherence to utilization of these tools were not collected. This “process” data would be important to capture in future studies since adherence to intervention tools is a key mediator of an intervention’s effects. Although the facilitators perceived that the barriers related to excess participant burden, competing priorities, and lack of motivation for some participants were the primary reasons for non-adherence to utilization of these tools, there is no data on participants’ self-identified barriers to utilizing these tools- information which would be important to help guide future studies.

Behavior change is difficult for many people, but tracking caloric intake and physical activity levels has been shown to be critical for weight loss.²⁰ Similar studies also noted difficulty in getting participants to engage in self-monitoring of food intake and physical activity.¹⁸ More research is needed to determine what strategies work best for getting socioeconomically disadvantaged AA to consistently utilize self-management tools since they are critical for success at lifestyle modification. It is also important for participants in group-based lifestyle modification interventions to share their successes and challenges using these tools with one another. This will allow participants to motivate and encourage one another, as well as help one another problem-solve. Future studies which implement this curriculum in this way should assess whether potential participants feel comfortable in a group setting, since the group process is critical to success.

Local community members with health-related backgrounds were used as curriculum facilitators. While this had the advantage of increasing the trust and comfort level of community members, these particular individuals may not have had the optimal “skill set” to effectively facilitate behavior change in a group setting. A group facilitator’s main task is to help the group meet its goal by improving process and structure, while simultaneously motivating individual behavior change. Being an effective facilitator is different from being a good teacher (i.e. using a didactic approach), particularly when working with adults. Some of our facilitators were more comfortable with “teaching” than with facilitating and may not have provided enough opportunities for group members to learn from one another and share experiences. The larger size of some of our groups may also have adversely impacted the ability to facilitate group discussion. Future studies should consider these factors when selecting and training facilitators for this curriculum.

The use of CHAs as both the facilitators and data collectors had an unintended negative effect on our data collection. Specifically, our facilitators chose not to administer the pre- and post- session questionnaires because of their concerns about low literacy among participants and participant burden. Clearly this sensitivity to the perceived needs of study participants is valuable and one of the reasons why using CHAs or other “natural helpers” in studies with minority and other vulnerable populations is beneficial. However, this level of sensitivity may be at odds with their simultaneous role as data collectors. Maintaining objectivity and “professional distance” required to collect research data, which is often time-consuming and burdensome for participants- may have been challenging. Health educators or others who primarily work in the area of service delivery work well as curriculum facilitators, however, they may be less familiar with or committed to the often stringent requirements of data collection for research purposes.

Participants’ literacy levels were not formally assessed, but facilitators noted that some participants verbalized low literacy, and were embarrassed and frustrated by their inability to read or understand food labels (feelings which prevented them for utilizing these tools). However, the facilitators’ approach to assessing participants’ literacy levels was not universally applied. They relied on participants’ self-acknowledgement of low literacy or on personal knowledge of the participants; this likely under-estimated the prevalence of low literacy in the sample. Without objective data on literacy levels, it is unclear the extent to which low literacy may have modified the effect of the intervention on health behaviors. Future studies should consider assessing the literacy level of potential participants using a validated instrument (e.g. S-TOFLA).²¹ A priori adaptations were purposely not made to the content or delivery of the curriculum in order to assess the feasibility of delivering the curriculum as designed. However, if the prevalence of low literacy in the target population is high, it may be necessary to modify the curriculum and/or have additional staff help with data collection since the curriculum was not designed for low education and reading level populations.⁴

Having participants’ perspectives on the value of each individual session would have provided greater insight into how best to modify the program to meet participants’ needs. For example, if it was known that participants most needed help with strategies related to eating behaviors, then the program could be modified so that it was only 6 sessions (instead of 12) which largely focus on eating. Such tailoring might also help improve retention and adherence to intervention strategies. Future studies should strongly consider the advantages and potential drawbacks of having the same community members serve as the interventionists and be responsible for collecting data.

Our study has limitations. Participants’ perspectives on the program (e.g. using a satisfaction questionnaire or through focus groups or interviews) were not formally solicited. Although many participants voluntarily shared their feedback informally with the facilitators and community partners, obtaining this information from all participants using a structured approach would have provided a unique and important perspective which would help tailor the intervention for future use. Self-reported questions that were a part of the P2P curriculum materials were used to assess physical activity, but this was not a validated measure and we did not have objective data on participants’ actual activity levels. Similarly,

data were not collected to assess participants' actual food intake (e.g. food frequency questionnaire). Our analytic sample size was small. However, this was a feasibility study and was not designed to test a priori hypotheses. Despite these limitations, our study has strengths. To our knowledge, this is the first report findings on use of the *P2P* curriculum in its original format; thus providing valuable insight for others interested in using the curriculum. Several other groups have reported using the curriculum,⁸ but no published manuscripts describing experiences using the curriculum for research purposes have been found. The *P2P* curriculum was disseminated in multiple rural community settings, including faith and non-faith based settings. Lessons learned from our study can help other community-academic partnerships implement the *P2P* curriculum in their communities.

Implications/Relevance for Diabetes Educators

Our findings have important relevance to and implications for diabetes educators. The *P2P* curriculum is a comprehensive and very useful educational tool for teaching individuals affected by or at high-risk for diabetes in group settings. The curriculum can successfully be facilitated by community members with health-related backgrounds in both faith- and non-faith based settings. Feasibility studies enable researchers to assess whether or not an intervention can be efficacious or sustainable and help identify what- if anything- in the research methods or protocols needs modification and how those changes may need to occur.⁹ Prior adaptations were purposely not made to the content or delivery of the curriculum in order to assess the feasibility of delivering the curriculum as designed. However, educators should be aware of the potential need to adapt the curriculum to suit the educational needs of the target group. Educators should also be aware of the challenges that may be imposed by low literacy and should consider objectively measuring literacy levels among participants. If the prevalence of low literacy in the target population is high, it may be necessary to modify the curriculum or its delivery and use proven strategies to mitigate low literacy effects and facilitate behavior change²² since the curriculum was not designed for low education and reading level populations.⁴

Acknowledgments

The authors would like to acknowledge other community partners: Debra Long, Trinette Boone Langley, Teresa Boyd, and Ellen Sullivan, as well as academic partners, Stepheria Sallah and Connie Blumenthal, who were key members of the research team. Their contribution to this project was invaluable.

References

1. Centers for Disease Control and Prevention. National diabetes fact sheet: National estimates and general information on diabetes and prediabetes in the United States, 2011. Atlanta, GA: Department of Health and Human Services, Centers for Disease Control and Prevention; 2011. NIH Publication No. 11-3892
2. Peek ME, Cargill A, Huang ES. Diabetes health disparities: a systematic review of health care interventions. *Med Care Res Rev.* 2007; 64:101S–56S. [PubMed: 17881626]
3. Knowler WC, Barrett-Connor E, Fowler SE, et al. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med.* 2002; 346:393–403. [PubMed: 11832527]
4. National Diabetes Education Program. Power to prevent: A family lifestyle approach to diabetes prevention. Available at: <http://ndep.nih.gov/publications/PublicationDetail.aspx?PubId=124>. Accessed 05/27/2011

5. Jackson L. Translating the Diabetes Prevention Program into practice: a review of community interventions. *Diabetes Educ.* 2009; 35:309–320. [PubMed: 19321809]
6. Boltri JM, Davis-Smith YM, Seale JP, Shellenberger S, Okosun IS, Cornelius ME. Diabetes prevention in a faith-based setting: results of translational research. *J Public Health Manag Pract.* 2008; 14:29–32. [PubMed: 18091037]
7. Dodani S, Fields JZ. Implementation of the fit body and soul, a church-based life style program for diabetes prevention in high-risk African Americans: a feasibility study. *Diabetes Educ.* 2010; 36:465–472. [PubMed: 20508263]
8. National Diabetes Education Program. Partner Spotlight. Available at: <http://ndep.nih.gov/partners-community-organization/>. Accessed 01/24/2013
9. Bowen DJ, Kreuter M, Spring B, et al. How we design feasibility studies. *Am J Prev Med.* 2009; 36:452–457. [PubMed: 19362699]
10. Minkler, M.; Wallerstein, N. *Community-Based Participatory Research for Health: From Process to Outcomes. 2.* San Francisco, CA: Jossey-Bass; 2003.
11. Heikes KE, Eddy DM, Arondekar B, Schlessinger L. Diabetes Risk Calculator: a simple tool for detecting undiagnosed diabetes and pre-diabetes. *Diabetes Care.* 2008; 31:1040–1045. [PubMed: 18070993]
12. North Carolina State Center for Health Statistics. African American health fact sheet. 2010. Available at: <http://www.schs.state.nc.us/SCHS/data/minority.cfm#reports>. Accessed 5/27/2011
13. Maxwell, J. *Developing the Leaders Around You: How to Help Others Reach their Full Potential.* Nashville, TN.: Thomas Nelson Publishers; 2005.
14. Resnicow K, Campbell MK, Carr C, et al. Body and soul. A dietary intervention conducted through African-American churches. *Am J Prev Med.* 2004; 27:97–105. [PubMed: 15261895]
15. Campbell MK, Hudson MA, Resnicow K, Blakeney N, Paxton A, Baskin M. Church-based health promotion interventions: evidence and lessons learned. *Annu Rev Public Health.* 2007; 28:213–234. [PubMed: 17155879]
16. Centers for Disease Control and Prevention, Division for Heart Disease and Stroke Prevention. Addressing chronic disease through community health workers: A policy and systems-level approach. 2011. Available from: http://www.cdc.gov/dhdsp/docs/chw_brief.pdf. Accessed 07/31/2012
17. Institute of Medicine Committee. *on Understanding and Eliminating Racial and Ethnic Disparities in Health Care Unequal treatment: Confronting racial and ethnic disparities in health care.* Washington, D.C.: The National Academies Press; 2002.
18. Yeary KH, Cornell CE, Turner J, et al. Feasibility of an evidence-based weight loss intervention for a faith-based, rural, African American population. *Prev Chronic Dis.* 2011; 8:A146. [PubMed: 22005639]
19. Treadwell H, Holden K, Hubbard R, et al. Addressing obesity and diabetes among African American men: examination of a community-based model of prevention. *J Natl Med Assoc.* 2010; 102:794–802. [PubMed: 20922923]
20. Lichtenstein A, Appel LJ, Brands M, et al. Diet and lifestyle recommendations revisions 2006: A scientific statement from the American Heart Association nutrition committee. *Circulation.* 2006; 114:82–96. [PubMed: 16785338]
21. Baker DW, Williams MV, Parker RM, Gazmararian JA, Nurss J. Development of a brief test to measure functional health literacy. *Patient Educ Couns.* 1999; 38:33–42. [PubMed: 14528569]
22. Seligman HK, Wallace AS, DeWalt DA, et al. Facilitating behavior change with low-literacy patient education materials. *Am J Health Behav.* 2007; 31(Suppl 1):S69–78. [PubMed: 17931139]

Population, Median Household Income (MHI), Poverty rate, Percent of Population that self-identifies as African-American (AA), and Diabetes Death Rate in North Carolina Overall Compared to the Target Counties.

Table 1

	Population	MHI	Poverty Rate	% AA Pop	Diabetes Death Rate
North Carolina	8,856,505	\$40,863	13.80%	22.10%	27.1
Franklin County	55,315	\$40,097	13.60%	28.00%	27.4
Halifax County	57,370	\$27,549	38.60%	52.30%	38.6
Wilson County	77,468	\$34,640	17.50%	39.30%	37.2

Table 2

Sample Characteristics Overall and by Study Site

	Total	Halifax	Franklin Group 1	Franklin Group 2	Wilson	p-value
Total No. Participants	104	42	9	17	36	
Mean Age, y	57	63 (24-88)	53 (39-67)	60 (39-82)	49 (21-79)	<0.001
Female (%)	75%	88	44	82	64	0.011
Self-reported Diabetes (%)	46%	57%	22%	29%	46%	0.11
High Risk for Diabetes (score 10)	78%	90%	100%	76%	57%	0.002
Education (%)						0.15
Less than High School	27%	28%	0	7%	37%	
High School/GED	24%	28%	0	40%	17%	
More than High School	49%	45%	100%	53%	46%	
Annual Income (%)						0.027
> \$5,000	16%	5%	0	0	31%	
\$5,000 to less than \$20,000	29%	21%	0	42%	31%	
\$20,000 to less than \$40,000	27%	42%	0	33%	17%	
\$40,000 to less than \$60,000	11%	5%	33%	8%	14%	
\$60,000 to less than \$80,000	11%	16%	67%	8%	3%	
\$80,000 or more	6%	11%	0	8%	3%	
Usual Source of Care (%)						0.082
Yes	92%	100%	100%	93%	83%	
No	8%	0	0	7%	17%	
Health Insurance (%)						0.001
Yes	84%	95%	67%	100%	68%	
No	16%	5%	33%	0	32%	

Table 3

Participation Rates Overall and by Study Site

Sessions Attended (%)	Total (N=104)	Halifax (N=42)	Franklin Group 1 (N=9)	Franklin Group 2 (N=17)	Wilson (N=36)
75%	45 (43%)	25 (60%)	2 (22%)	11 (65%)	7 (19%)
50–74%	20 (19%)	5 (12%)	6 (67%)	4 (24%)	5 (14%)
25–49%	18 (17%)	7 (17%)	0	1 (6%)	10 (28%)
<25%	21 (20%)	5 (12%)	1 (11%)	1 (6%)	14 (39%)