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A Methodological Review of Faith-Based Health Promotion Literature: Advancing the Science to Expand Delivery of Diabetes Education to Black Americans

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Abstract

Non-traditional avenues, such as faith-based organizations (FBOs), must be explored to expand delivery of diabetes self-management education (DSME) to benefit Black Americans with type 2 diabetes (T2D). The purpose of this study was to methodologically review the faith-based health promotion literature relevant to Blacks with T2D. A total of 14 intervention studies were identified for inclusion in the review. These studies detailed features of methods employed to affect health outcomes that DSME similarly targets. Analysis of the faith-based studies' methodological features indicated most studies used 1) collaborative research approaches, 2) pre-experimental designs, 3) similar recruitment and retention strategies, and 4) culturally sensitive, behaviorally-oriented interventions with incorporation of social support to achieve positive health outcomes in Black Americans. Findings indicate FBOs may be a promising avenue for delivering DSME to Black Americans. Informed by the findings, a focused discussion on advancing the science of faith-based interventions to expand delivery of DSME to Black Americans with diabetes is provided.

Keywords

Diabetes; faith-based; Black Americans

Introduction

Type 2 diabetes (T2D) has emerged as a national epidemic, disproportionately burdening ethnic and racial minority populations. Black Americans, in particular, have experienced exponential increases in T2D rates and continue to suffer from high rates of both diabetes-related complications and premature death (CDC, 2009; CDC, 2010). High rates of complications and premature death may be reduced with optimization of glycemic, lipid, and blood pressure levels (DCCT, 1993; Gaede et al., 2003; Gaede & Pederson, 2004; UKPDS, 1998). To optimize outcomes, diabetes self-management education (DSME) programs, target, dietary and physical activity patterns with effectiveness demonstrated in diverse populations reported, including Black Americans (Keyserling et al., 2002; Norris,

Engelgau, & Narayan, 2001; Norris et al., 2002; Melkus et al., 2010; Melkus et al., 2004; 2010). Evidence-based DSME, emphasizing acquisition and implementation of diabetes-related knowledge and skills in psychosocial and cultural contexts, thus serves as the cornerstone of diabetes care (AADE, 2007, ADA, 2010; Funnell et al., 2008).

The literature indicates, however, delivery of DSME is limited (CDC, 2010). This suggests diabetes research knowledge is not being effectively translated to benefit Black Americans in clinic or community settings (NIH, 2010; Chin et al., 2001; Larme & Pugh, 2001). To promote translation of diabetes science to community settings, non-traditional venues for delivery of DSME require exploration. Accumulating evidence indicates faith-based settings – with a longstanding history of delivering health promotion programs to foster improved physiological outcomes – may serve as a promising venue for providing quality DSME to underserved populations, particularly Black Americans. Therefore, the purpose of this study is to methodologically review the faith-based health promotion literature relevant to Black Americans with T2D to advance the science of faith-based interventions, and thereby expand DSME delivery to Black Americans.

Background

Over the past decade, the incidence of diabetes increased 54% (from 878,000 to 1,356,000) while the prevalence more than doubled (from 5.8 million to 14.7 million) with prevalence rates documented as higher among Blacks (15.4 per 100) than Whites (9.4 per 100) (CDC, 2010). Accounting for up to 95% of all diagnosed cases of diabetes, T2DM is characterized by hyperglycemia resulting from deficient insulin action on target tissues. Chronic hyperglycemia – often presenting in the context of hypertension and/or dyslipidemia – may result in diabetes complications and premature death (ADA, 2010). Diabetes-related complications are multiple and include loss of vision, renal failure, lower extremity amputations, and cardiovascular disease, involving angina, myocardial infarction, and cerebrovascular accidents, among others (ADA, 2010; Davidson, 1998). Over the past 2 decades, rates of diabetes-related complications and premature death have increased or persisted for Blacks with this population often evidencing higher rates than Whites (CDC, 2010). Rigorous randomized controlled trials indicate, however, achievement of near normal glycemic control as well as tight blood pressure and/or lipid levels may significantly reduce rates of diabetes-related complications and premature death (DCCT, 1993; Gaede, et al., 2003; UKPDS, 1998).

Diabetes Self-Management Education

To reduce the risk of diabetes-related complications and premature death in diverse patient populations, DSME serves as the critical cornerstone of diabetes treatment. DSME is related to improved glycemic control over time and reductions in both blood pressure and lipid levels (Gaede et al., 2003; Norris et al., 2001; Norris et al., 2002; Brown, 1999). DSME empowers patients to assume an active role in their day-to-day diabetes management. Diabetes self-management is often complex, requiring multiple behavioral actions on a daily basis. Individually prescribed by the health care provider, diabetes self-management may involve the following: 1) adhering to a detailed meal plan (e.g., restricting fat and carbohydrate intake), 2) engaging in appropriate physical exercise, 3) administering medications (oral or injectable), monitoring blood glucose levels, 4) self-treating diabetes related symptoms, 5) abiding by foot-care recommendations, and/or 6) seeking ongoing health care for diabetes (AADE, 2007; ADA 2010; McNabb, 1997; Funnell et al., 2008).

DSME is a collaborative approach to diabetes care. In this evidence-based model, the patient actively collaborates with the health care provider in the diabetes educational process through group and/or one-to-one education. Emphasis is placed on empowering patients

with the necessary knowledge and skills to competently self-manage the daily complexities of diabetes with consideration of contributing psychological, social, and cultural factors, among others (AADE, 2007; ADA, 2010; Anderson., Funnell, & Butler, 1995; Brown, 1999; Glasgow & Anderson, 1999; Funnell et al., 2008).

Over the past decade, psychological, social, and cultural factors have been empirically identified as strong determinants of positive behavioral change related to diabetes self-management regimens, thereby improving physiologic outcomes. Psychological distress, both in terms of anxiety and depression, for example, has been strongly linked longitudinally with poorer diabetes self-management as indicated by glycemic control (Anderson, Grigsby, Freedland, et al., 2002; Lustman, Anderson, Freedland, et al., 2000; Polonsky, Anderson, Lohrer, et al., 1995).

Likewise, in multiple longitudinal and cross-sectional studies, social support has been documented as contributing to diabetes self-management outcomes (Albright, Parchmen, & Burge, 2001; Griffith, Field, & Lustman, 1990; McDonald et al., 2002; Nakahara et al., 2006; Tillotson & Smith, 1996). Additional qualitative and quantitative studies indicate cultural factors, such as spirituality and religion, may be related to diabetes self-management with cross-sectional associations with glycemic and blood pressure control reported (Fitchett, Davis, & Quinn, 2000; Newlin et al., 2003; Newlin et al., 2007; Samuel-Hodge et al., 2000; Egede & Bonadonna, 2003; Newlin et al, 2008; Samuel-Hodge et al., 2008). A growing number of experimental studies further indicate addressing culture in the context of education may benefit diabetes self-management and related glycemic control (Mekus et al., 2010; Mekus et al., 2004; 2010; Keyserling et al., 2002).

The Centers for Disease Control (CDC) and National Institutes of Health (NIH) recommend a collaborative model of comprehensive diabetes education, highlighting the importance of addressing cultural factors, such as religion, faith and spirituality, in the provision of care to improve diabetes endpoints in ethnic/racial minority populations (2007 (2010). The American Diabetes Association's (ADA) evidence-based practice guidelines identify DSME as a standard of care to promote optimal outcomes in diverse populations with diabetes. The ADA guidelines also underscore that cultural factors, in addition to psychosocial and behavioral factors, may uniquely influence success with diabetes self-management, and by extension, physiologic outcomes (ADA, 2010; Funnell et al, 2008). Currently, Medicare, setting the benchmark for third-party payors, covers up to 10 hours of initial outpatient DSME and 2 hours thereafter, on an annual basis, as deemed necessary by the provider (DHHS, 2010).

Despite the known benefits, policy recommendations, and reimbursement standards for DSME, diabetes education is not being provided widely for diverse ethnic and racial groups, including Black Americans, in either group or one-to-one formats. It is estimated that less than fifty percent of Black Americans actually receive diabetes education (CDC, 2010). Research suggests that several barriers impede delivery of DSME. Provider barriers include: 1) lack of provider knowledge about current educational standards, 2) cultural differences with patients, 3) time constraints, 4) lack of support staff, and 5) low reimbursement rates (Chin et al. 2001; Larme & Pugh, 2001; Zgibor & Songer, 2001). Patient barriers include: 1) economic constraints, 2) distrust of the health care system, and 3) lack of access to or sustained engagement with providers (Chin et al. 2001; Larme & Pugh, 2001; Zgibor & Songer, 2001). These barriers suggest that diabetes research knowledge is not being effectively translated into real world settings to benefit Blacks with T2D. Availability and quality of diabetes education for Black Americans appears inadequate to halt their unacceptable and disproportionate rates of diabetes-related complications and premature death.

Partnerships with Faith-Based Organizations

The CDC and NIH recommend that community stakeholders – universities, care providers, local leaders, and lay public – partner with faith-based organizations (FBOs) to address the public health challenge posed by diabetes among Blacks (CDC, 1999; NIH, 2010). Well poised for implementation of the collaborative model of DSME in a group setting, FBOs have several characteristics that make them ideal partners in health education initiatives or programs. Following their mission of healing and service, FBOs promote positive health values and often endorse health promotion programs to address the health needs of community members. Additionally, FBOs have a longstanding history of serving vulnerable populations, thereby providing access to low socioeconomic and other medically underserved populations. FBOs also have resources, such as volunteers and facilities, that may be utilized for health promotion activities. FBOs, as prominent cultural organizations within Black American communities, may further provide a trusted and culturally sensitive setting for the delivery of health promotion programs (Catanzaro, et al., 2007; Baskin, Renisow, & Campbell, 2001; Peterson, Atwood, & Yates, 2002; Turner et al., 1995).

Moreover, FBOs, with tight religious networks, may enhance the success of faith-based health programs and related outcomes, particularly through fostering widespread and sustained participation in such programs (Baskin et al., 2001; Dyess, Chase & Newlin, 2010; Peterson et al., 2002). Black American women, including those with T2DM, tend to report relatively high rates of church attendance and heightened levels of religious social support, which have been significantly linked with lower levels of psychological distress (Taylor & Chatters, 1988; van Olphen et al., 2003; Newlin, Chyun, & Melkus, 2004). These findings suggest that, for Black Americans, a faith-based setting may provide a positive psychosocial environment for the delivery of DSME. However, to date, data reflecting the effectiveness of delivering DSME in a faith-based setting is limited. Related literature suggests faith-based health education programs may be effective in promoting positive health behaviors, thereby affecting physiological outcomes in Black American populations.

Methods

The review of faith-based health promotion literature relevant to Black Americans with T2D was based on the guidelines of a Cochrane Review. These guidelines include: (1) predefined selection criteria and search strategy for studies presented in the review; (2) description and evaluation of the methodological quality and outcomes of such studies; and (3) interpretation and discussion of the studies' reported outcomes (Cochrane Collaboration, 2006).

Sampling

The sample for this literature review was quantitative studies reporting FBO health promotion activities relevant to diabetes self-management and related outcomes among Black Americans from 1990 through 2010. Eligibility criteria included that the study: (1) predominantly sampled Blacks for entry into a faith-based intervention; (2) evaluated or tested an intervention targeting aspects of diabetes self-management knowledge (e.g., nutrition), behaviors (e.g., dietary patterns or physical exercise), or outcomes (e.g., glycemic control, body weight, blood pressure, or lipid levels) in a faith-based setting; and (3) reported related empirical findings. A non-probability sampling design was used. With use of OVID Software, a computer generated search of the MEDLINE, CINAHL, and PsychINFO databases was performed by entering the key words "Blacks," "diabetes education," "faith-based," "church-based," or "church." Using the same keywords, supplemental searches of Web of Science and PubMed databases were also performed. The search strategies yielded a convenience sample of 73 studies, after delimiting to meet the

eligibility criteria, 19 remained. Only three studies identified as sampling Black Americans with diabetes (Fardidi et al., 2010; Hahn et al., 1998; Samuel-Hodge et al., 2009).

Data Collection and Analysis

Each study was reviewed twice to identify its research approach; study design; sampling method; sample demographics; recruitment and retention strategies; intervention components; religious content; and outcomes. These methodological features were extracted from the reviews and critically analyzed to determine the state of the science of faith-based health promotion programs relevant to Black Americans with T2D.

Results

A total of 19 studies addressing aspects of DSME in Black American populations were reviewed. The studies detailed features of methods employed to affect outcomes – dietary patterns, weight control, physical activity, glycemic control, blood pressure, and lipid levels – which DSME similarly targets. Overall, a majority of the studies tended to employ similar research approaches, sampling plans, and recruitment and retention strategies to successfully deliver distinct interventions, with varying levels of religious content, resulting in overall positive health outcomes.

Research Approaches

The faith-based health interventions reviewed followed conventional, collaborative, or participatory research approaches (see Table 1). These distinct approaches may be conceptualized as existing on a continuum, reflecting increasing levels of community or participant control in the research process (Cornwall & Jewkes, 1995). One study followed a conventional approach wherein the participants' control in the research process was largely limited to consenting to participate in the study and following related protocols. In this obesity treatment trial, the researchers developed the cognitive behavioral intervention and were responsible for its implementation in addition to recruitment and retention of study participants. Tight control over the research process facilitated the investigators' objective of evaluating the effect of an obesity treatment trial delivered in a faith-based versus a secular setting (Sbrocco et al., 2005).

Most studies reviewed ($n=12$) followed a collaborative research approach (see Table 1). Following this approach, researchers external to the faith communities exercised chief control in the research process but invited church and/or community stakeholders to assume varying levels of responsibility in developing and/or implementing the health promotion programs. Campbell et al. (1999), for instance, empowered church communities to assume increasing levels of control throughout the research process, integrating community expertise and skills in developing, organizing, and implementing a 2-year multi-component intervention to achieve healthy dietary change in rural African Americans. Empowering the church communities to engage in the research process resulted in the potential for sustainability and institutionalization of the dietary health program (Campbell et al., 1999).

A limited number of studies ($n=2$) followed a participatory approach in conducting faith-based research (see Table 1). In accordance with this approach, church and greater community representatives or leaders controlled the research process while researchers contributed as colleagues. Turner et al. (1995), for example, report a participatory research process led by the Advisory Council of Health Promotion (ACHP), which was comprised of church leaders. With input from researchers or "staff," the ACHP surveyed communities, identified cardiovascular disease as a perceived health problem, and then directed local development, marketing, and implementation of health programs targeting cardiovascular

health behavior and related outcomes in Black Americans. This cardiovascular program – designed and directed by church leaders – provided program trainings and grant writing seminars during its 2-year course, thereby fostering its potential for long-term community sustainability.

Participatory or collaborative approaches, emphasizing increasing levels community research control, are necessary to promote long-term sustainability of faith-based health programs, including DSME programs. In developing health programs, planning for sustainability is critical. Failing to sustain a program after its initial implementation may be counterproductive if the health condition the intervention was established to ameliorate is chronic, such as diabetes. Sustainability is also a concern when program start-up costs (fiscal, human, and technical capital) are significant and intervention effectiveness may be realized beyond the initial funding period. Furthermore, new health promotion programs may meet reduced community support if previous programs were terminated prematurely (Shediac-Rizkallah & Bone, 1998).

Sampling

All of the faith-based health promotion studies ($n=19$) employed convenience sampling procedures. Samples tended to be comprised largely of mid-life Black women reporting an annual income of less than \$40,000 from both rural and urban areas (see Table 1) (Barnhart et al., 1998; Campbell, et al. 1999; Kennedy et al., 2005; Kumanyika & Charleston, 1991; McNabb et al., 1997; Oexmann, Ascanio & Egan, 2001; Resnicow et al., 2001; Sbrocco et al., 2005; Smith & Merritt, 1997; Turner et al., 1995; Wiist, & Flack, 1990; Yanek et al., 2001; Young & Stewart, 2006). The fairly homogeneous composition of the samples indicates the reported intervention findings (see Table 2) may have limited generalizability, and thus, may not be representative of the greater Black American community. At the same time, the relative homogeneity of the samples indicates that mid-life Black women with T2D may be accessible for future faith-based intervention research.

Recruitment & Retention

Overall, the majority of faith-based studies ($n=16$) reported recruitment and retention of Black study participants is facilitated by endorsement of church leadership. Endorsement is reported as affording essential credibility to health programs, prompting lay church leaders to assist with recruitment efforts, and encouraging congregant enrollment and ongoing participation in the intervention studies. Additionally, faith-based studies utilized church-based health fairs, provided financial incentives, and contracted local liaisons to attract participants (see Table 3).

With strong pastor support, Resnicow et al. (2001), for example, examined the effect of motivational interviewing on fruit and vegetable consumption through Black churches. Liaisons from each church participating in the nutrition study were hired to assist with recruitment and retention efforts, providing names of potential participants and coordinating health fairs. To further promote recruitment and retention, participating churches received monetary donations upon initiation and at completion of the study based on collection of pre- and post-intervention measures, respectively. This study reported exceptional retention with less than 20% attrition from baseline ($N=1,011$) to 1-year follow-up ($n=861$).

Investigating church-based nutrition and physical activity strategies on cardiovascular risk profiles in Black, mid-life women, Yanek et al. (2001) utilized similar recruitment and retention strategies, including pastor endorsement, use of lay leaders, and church bulletin announcements. Involving relatively high levels of subject participation (weekly, 1-hour, interactive nutrition and activity sessions), this cardiovascular study reported only fair

attrition, reporting a baseline sample ($N=529$) from 16 churches with a greater than 50% retention rate ($n=294$) at 1-year follow-up. Secular intervention studies, involving Black American populations, tend to report relatively comparable retention rates, particularly when culturally sensitive strategies are employed (Gilliss et al., 2001; Escobar-Chaves et al., 2002; Newlin et al., 2006).

Interventions

Overwhelmingly, the faith-based studies tested behaviorally-oriented group interventions ($n=18$) characterized by integration of social support, cultural sensitivity, and interactive education with an emphasis, to varying degrees, on increasing health knowledge and related skills as well as identifying goals, barriers to progress with goals, and associated problem-solving (see Table 2). As previously discussed, investigators external to the faith communities tended to exercise chief responsibility for the behaviorally-oriented interventions; although, community stakeholders of varying involvement, were invited to participate in program development and/or implementation.

Involvement of community stakeholders in the program development process is reported particularly in terms of consulting with community advisory committees and conducting focus groups with pastors and/or church members to assure the cultural sensitivity of the intervention programs ($n=10$) (see Table 2). Yanek et al. (2001) held focus groups and in-depth interviews with churchgoing African-American women to inform the development of a faith-based cardiovascular program. Following pilot-testing of the program, it was presented to a Community Expert Panel for review and further refinement to assure its cultural relevance. Likewise, McNabb et al. (1997), in developing a culturally sensitive church-based weight loss program for Black women at-risk for diabetes, conducted focus groups with urban community women to identify salient behavioral and sociocultural issues related to weight loss.

Most faith-based intervention studies ($n=14$) utilized volunteers for the delivery of the interventions with varying levels of training reported. In one study, community volunteers received informal training to assist with delivery of interactive nutritional sessions aimed at improving glycemic control (Hahn et al., 1998). Providing more extensive, formal training, another study prepared community registered nurses as volunteer church health educators (CHEs) to deliver a hypertension educational program emphasizing disease knowledge, social support, and strategies for active engagement in hypertension management. Selected from participating churches, CHEs received 20 hours of classroom instruction and 4 hours of experiential activities to develop competencies related to program delivery. Standardization of the program was further promoted with curriculum guides to inform delivery of the educational intervention (Smith et al., 1997).

Noting the disparities in degree of training received by volunteers delivering faith-based interventions raises the issue of program fidelity. Standardization of programs promotes greater precision in evaluating the effectiveness of faith-based interventions. At the same time, however, highly standardized programs may be challenging to implement and yield results difficult to generalize to real world settings. Hence, although some faith-based intervention studies may not promote high levels of program fidelity, their relative lack of fidelity suggests their findings may have practical applications outside of a research context.

Religious Content

Almost one half of the studies reviewed ($n=9$) specifically incorporated religious content into the faith-based programs (see Table 2). One study reported integrating religion and spirituality with social support and behavioral goal setting into an intervention designed to

reduce cardiovascular risk. The educational intervention sessions, while providing relevant health-related content, integrated such concepts as love, peace, faith, self-control, and Godliness with incorporation of prayer, Bible study, and inspirational stories, among others (Oexmann et al., 2001).

Another study targeting cardiovascular risk profiles evaluated three treatment conditions: (1) self-help; (2) standard behavioral intervention; and (3) spiritual intervention, which incorporated components of the behavioral intervention plus prayer, health messages enriched with scripture, and physical activity involving praise and gospel music. Efforts to keep the standard behavioral and spiritual interventions distinct were unsuccessful. Participants receiving the standard behavioral intervention instinctively introduced elements of their spirituality into their treatment condition. As a result, the standard and spiritual interventions became indistinguishable, compelling the investigators to combine data yielded from these two intervention groups for comparative analysis against the self-help group (Yanek et al., 2001).

Those studies ($n=7$) not incorporating specific religious content into the health promotion programs also reported overall positive health outcomes (see Table 2) but often provided indication that religious social support contributed to program success (Barnhart et al., 1998; Kumanyika et al., 1991; Sbrocco, et al., 2005). This finding, coupled with the Yanek and colleagues' (2001) report, suggests it may be challenging to disentangle the effect of contextual spiritual or religious factors on outcomes when faith-based programs are studied. One approach might be to compare outcomes from an identical intervention delivered in a faith-based and secular setting. Sbrocco et al. (2005) followed this approach testing an obesity treatment for women with findings indicating the faith-based treatment was significantly more effective than its secular equivalent.

The use of religious content in faith-based interventions raises the issue of church and state separation, particularly if the research program is funded by tax dollars. Unequivocally, federal dollars may not be used to support inherently religious activities, such as worship, religious instruction, and proselytization. Federal monies may, however, be used for government-funded social service programs in faith-based settings but require separation from inherently religious activities, both terms of time or location (WHFBCI, 2008). In planning federally funded faith-based programs, it may be helpful to visit the Office of Faith-Based and Community Partnerships on-line at <http://www.whitehouse.gov/administration/eop/ofbnp>.

Outcomes

Overwhelmingly, the faith-based studies reviewed ($n=18$) reported significant health outcomes – such as reductions in weight, blood pressure, glycemic, and lipid levels and increases in disease-related knowledge, physical activity, and intake of fruit and vegetables (see Table 2). However, interpretation of these findings is problematic. With limited exceptions, most studies reviewed were undertaken without guiding theoretical frameworks, and as a result, relational explanations of how the interventions resulted in the observed outcomes were not provided. In the absence of guiding frameworks, key concepts embedded in the behavioral interventions – such social support, cultural sensitivity, coping skills (e.g., problem-solving ability), and spirituality or religiosity – tended not to be measured. Hence, it remains uncertain to what extent and which aspects of the interventions, if any exclusively, contributed to the significant health outcomes.

Other issues related to interpretation of the study findings include use of study designs and statistical analyses. Most of the studies reviewed used pre-experimental ($n=5$) or quasi-experimental ($n=8$) designs with limited statistical analyses (see Table 1). Hence, statistical

control for critical covariates – including age, income, education, medication use, and number of comorbidities – was not consistently exercised in the absence of a counterfactual and/or randomization.

Conclusion

Despite issues related to interpretation of findings reported, the faith-based intervention studies reviewed are promising, suggesting that FBOs may be effective avenues for implementing DSME to improve physiologic outcomes for Black Americans with T2DM in a group setting. Although most studies reviewed did not specifically evaluate interventions targeting Blacks with T2DM, the reported findings are relevant. The faith-based studies reviewed tested educational interventions – involving behaviorally oriented approaches that incorporated social support and cultural sensitivity – which are conceptually congruent with DSME. Moreover, these educational interventions were aimed at outcomes – dietary patterns, physical activity, weight loss, glycemic control, and blood pressure and lipid levels – which DSME similarly targets.

The studies reviewed provide insight for future diabetes research evaluating DSME in faith communities. In terms of a research approach, the studies suggest investigators, relative to church communities, are often exercising primary responsibility in the delivery of health programs. To sustain programs beyond the completion of the research project to foster maintenance of health benefits achieved, participatory or collaborative approaches, emphasizing devolution of research control to FBOs, are necessary.

Planning for long-term program sustainability requires intervention design and implementation in partnership with the recipient community. Collaboratively designing the health program to ensure it is compatible with the culture and mission of the community organization may involve focus groups with the target audience, interviews with community leaders, and ongoing dialogue with key stakeholders or community advisory boards. Sustainability planning further involves collaboratively identifying community resources for and barriers to program implementation while considering long term program viability. Community resources may include a reliable core of volunteer health educators to implement a health promotion program. Volunteers should be empowered with the skills needed to effectively deliver the program intervention, and further, to train other community members to promote program endurance. Community barriers may include organizational financing of the health promotion program, particularly once the research has been completed. Hence, advanced financial planning strategies are advised to ensure gradual fiscal responsibility by the host organization. With these factors considered, ongoing collaborative planning for program sustainability may foster community ownership of the health promotion program, and thereby maintenance of health benefits achieved by the research program (Shediac-Rizkallah et al., 1998; Baskin, et al., 2001).

The studies reviewed further indicate pastor endorsement is essential, critically influencing recruitment efforts and participant enrollment. This suggests future diabetes research in this area requires pastor support and may additionally benefit from building trusting relationships with other highly respected community leaders, such as pastors' wives. Pastors' wives may serve as an effective conduit for generating program interest and involvement, particularly among Black women (Clay, Newlin, & Leeks, 2005).

The reviewed studies largely attracted the participation of mid-life Black women who tended to have medium-to-low incomes, suggesting this population may be accessed for future diabetes research in faith-based settings.

Building on previous research in the area faith-based interventions, DSME is well suited for implementation and evaluation in Black American FBOs. It is recommended that this understudied area of research be guided by theoretical models, informed by varying ontologies, to generate a fuller understanding of the pathways by which faith-based interventions promote positive health outcomes. Ontologically, offering a positivist perspective, a number of theoretical models have promising applicability in this area of research, proposing paths linking religious, spiritual, cultural, psychosocial, educational, behavioral, and other factors embedded in faith-based interventions to health outcomes (Koenig, McCullough, & Larson, 2001; Bolton & George, 1995).

Theoretical models from a post-positivist perspective germane to faith-based health programs are lacking. From the post-positivist perspective, the participant, as opposed to the investigator, is the expert in developing an understanding of a phenomenon or situated process. For example, grounded theory, phenomenology, or ethnography approaches involving qualitative data generation aimed at developing relational propositions and associated theory, are recommended to further understand DSME within FBO's. These approaches may yield critical insight on how and why faith-based interventions affect healthy behavior change with consideration of social processes inherent and personal meaning attributed to health programs delivered in FBOs. Both positivist and post-positivist models – guiding conceptualization of faith-based interventions, identifying conceptual variables to be measured, and informing rigorous statistical analysis – are necessary and require testing to advance the science of DSME delivery in faith community settings to benefit Black Americans.

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Table 1**Faith-Based Studies: Research Approach, Study Design, & Sample Demographics**

Authors	Research Approach & Study Design	Sample Demographics
Barnhart et al. (1998)	<ul style="list-style-type: none"> Combined approach: Project/ Collaborative Quasi-experimental design 	<ul style="list-style-type: none"> Convenience sample: Pre-intervention: $n=30$ (1 church), 8-week F/U: $N=18$ Race: AA=100%, Gender: Female (♀)=100%, Age: Mean (M)=60 yrs, Income: not available (N/A)
Campbell et al. (1999)	<ul style="list-style-type: none"> Project approach Experimental design 	<ul style="list-style-type: none"> Convenience sample: Baseline: $N=3,737$ (50 churches), 2-yr follow-up (F/U): $n=2,519$ (49 churches) Race: AA=98%, Gender: ♀=73%, Age: M=54 yrs, Income: 59% <\$20,000
Davis-Smith, (2007)	<ul style="list-style-type: none"> Collaborative approach Pre-experimental design 	<ul style="list-style-type: none"> Convenience sample: $n=99$, pre-screening (1 church), post-screening $n=29$ high risk, $n=11$ pre-diabetic, $n=10$ agreed to participate. $N=9$ at 6-month & 12-month F/U Race: AA=100%, Gender: ♀= 7 & ♂= 3
Dodani et al. (2010)	<ul style="list-style-type: none"> Collaborative approach Pre-experimental design 	<ul style="list-style-type: none"> Convenience sample: $n=600$ (1 church), $n=70$ eligible, $n=40$ high risk, $n=35$ attended at least 10–12 sessions Race: AA=100%, Gender: ♀=35 & ♂=6
Faridi et al. (2010)	<ul style="list-style-type: none"> Collaborative approach Quasi-Experimental design 	<ul style="list-style-type: none"> Convenience sample: $N=258$ recruited (Criteria: at high risk for diabetes, or diagnosed with type 2 diabetes) Pre-intervention: $N=246$ (121 intervention, 125 control) 12-month F/U: $N=161$ (83 intervention & 78 control) Race: AA=100%, Gender: ♀= 84.8% intervention group & 78% control group
Hahn et al. (1998)	<ul style="list-style-type: none"> Collaborative approach Pre-experimental/evaluation 	<ul style="list-style-type: none"> Pre-program: $N=31$, post-program: $N=85$, & 6-month F/U: $n=25$ Gender: N/A; Age: N/A, Income: M=\$13,232/yr for Community area targeted
Kennedy et al. (2005)	<ul style="list-style-type: none"> Collaborative approach Quasi-experimental design 	<ul style="list-style-type: none"> Pre-intervention: $N=40$ (1 church), 6-month post-intervention F/U: $n=36$ Gender: ♀=92.5%, Age: M=44 yrs, Income: N/A
Kim et al. (2008)	<ul style="list-style-type: none"> Collaborative approach Quasi-experimental design 	<ul style="list-style-type: none"> Convenience Sample: $N=73$ (4 churches), $N=36$ treatment group (2 churches) & $N=37$ (2 churches) control group Race: AA=100%, Gender ♀=25 treatment group ♀=27 control group
Kumanyika et al. (1991)	<ul style="list-style-type: none"> Combined Approach: Project/ Collaborative Quasi-experimental design 	<ul style="list-style-type: none"> Convenience sample: Pre-program: $N=353$ (22 churches), post-program: $n=187$, 6 month F/U: $n=74$ External control group: $N=25$ Race: AA=99%, Gender: ♀=100%, Age: M=51 yrs, Income: N/A

Authors	Research Approach & Study Design	Sample Demographics
McNabb et al. (1997)	<ul style="list-style-type: none"> Project approach Experimental design 	<ul style="list-style-type: none"> Convenience sample: Pre-intervention: $N=39$ (3 church), post-intervention: $n=33$ Race: AA=100%, Gender: ♀=100%, Age: M=56 yrs, Income: N/A
Oexmann et al. (2001)	<ul style="list-style-type: none"> Project approach Pre-experimental design 	<ul style="list-style-type: none"> Convenience sample, pre-program & post-program: $N=381$ (24 churches), 1-yr F/U: $N=163$ Race: AA=61%, Gender: ♀=83%, Age: M=55 yrs, Income: N/A
Reniscow et al. (2001)	<ul style="list-style-type: none"> Project approach Experimental design 	<ul style="list-style-type: none"> Convenience sample: Pre-intervention: $N=1,011$ (14 churches), 1-yr F/U: $n=861$ Gender: ♀=73%, Age: M=44 yrs, Income: >55% < \$40,000/yr
Samuel-Hodge et al. (2009)	<ul style="list-style-type: none"> Collaborative approach Experimental design 	<ul style="list-style-type: none"> Convenience sample: $N=284$ (30 churches) diabetics agreed to participate, $N=117$ (13 churches) pre-special intervention, $N=84$ (11 churches) pre-minimal intervention 8-month F/U: $N=102$ special intervention, $N=72$ minimal intervention. 12-month F/U: $N=101$ special intervention, $N=69$ minimal intervention Race: AA=100%, Gender: 2/3 ♀
Sbrocco et al. (2005)	<ul style="list-style-type: none"> Conventional approach Quasi-experimental design 	<ul style="list-style-type: none"> Pre-intervention: $N=42$, 1-yr post-intervention F/U: $n=42$ Gender: ♀=100%, Age: M=44 yrs (faith-based African-American [AA] sample), M=41 yrs (university AA Sample), & M=44 yrs (university Caucasian sample); Income: M=\$67,320/yr (faith-based AA sample), M=\$55,000/yr (university AA sample), & M=\$62,400/yr (university Caucasian sample)
Smith et al. (1997)	<ul style="list-style-type: none"> Project approach Quasi-experimental design 	<ul style="list-style-type: none"> Convenience sample: Pre-intervention: $N=198$, post-intervention & 3-month F/U: $n=97$ (17 churches) Race: AA= 100%, Gender: ♀=84%, Age: M=62 yrs, Median income= \$10,000–\$20,000/yr
Turner et al. (1995)	<ul style="list-style-type: none"> Combined Approach: Project/ Collaborative Pre-experimental, evaluation design 	<ul style="list-style-type: none"> Continuous convenience sampling: Program yr-1 $N=294$ & program yr-2 $N=343$ Race: AA= 100% Gender ♀= 68%, Age: N/A, Income: N/A
Wiist et al. (1990)	<ul style="list-style-type: none"> Project approach Quasi-experimental design 	<ul style="list-style-type: none"> Convenience sample: Pre-intervention: $N=348$ (6 churches) & 6-month F/U: $N=192$ Race: AA=100%, Gender: ♀=N/A, Age: N/A, Income: N/A
Yanek et al. (2001)	<ul style="list-style-type: none"> Combined approach: Project/ Collaborative Experimental design 	<ul style="list-style-type: none"> Convenience sample: Pre-intervention: $N=528$ (16 churches) & 1-yr F/U: $n=294$ Race: AA= 100%, Gender: ♀=100%, Age: M=54 yrs (spiritual intervention), M=52 yrs (standard intervention), & M=54 yrs (self-help intervention); Income: M=\$42,070/yr (spiritual intervention), M=

Authors	Research Approach & Study Design	Sample Demographics
		\$33,267/yr (standard intervention), & \$33,945/yr (self-help intervention)
Young et al. (2006)	<ul style="list-style-type: none"> • Collaborative approach • Experimental design 	<ul style="list-style-type: none"> • Baseline: $N=196$ (11 churches) & 6-month post-intervention F/U: $n=117$ • Gender: ♀=100%, Age: M=48 yrs, Income: N/A

Table 2**Faith-Based Studies: Measures, Intervention, Religious Content, & Outcomes**

Authors	Measures	Descriptions of Interventions & Incorporation of Religious Content	Outcomes
Barnhart et al. (1998)	<ul style="list-style-type: none"> • Demographics • Dietary intake & behavioral interventions • Barriers & Facilitators to fruit/vegetable (F/V) intake • Heath status • Use of health screenings • Knowledge of nutrition & health 	<ul style="list-style-type: none"> • Informed by focus group data • Culturally sensitive • Three bi-weekly, 90-minute nutritional sessions addressing health & dietary knowledge, goal setting, strategies to overcome barriers, & reinforcing activities to post-intervention achieve behavioral change related to increased F/V intake • No religious content 	<ul style="list-style-type: none"> • Bivariate statistics • Significant increase in vegetable intake post-intervention • Marginally significant increase in fruit intake • Church workshops (90%), pamphlets/booklets (80%), refrigerator magnets (78%), church cookbook (77%), & food co-ops (77%) identified as facilitators to F/V intake
Campbell et al. (1999)	<ul style="list-style-type: none"> • Demographics • F/V intake • Knowledge of recommended F/V servings • Stages of change • Self-efficacy • Perceived availability of F/V • Process factors 	<ul style="list-style-type: none"> • Informed by focus groups, pastor interviews, & church members • Church members delivered multiple components with trainings reported • Culturally sensitive, 20-month multi-component intervention addressing predisposing, enabling, & reinforcing factors to promote increased F/V intake • Religious content • Control group received delayed intervention 	<ul style="list-style-type: none"> • Bivariate, & multivariate statistics • Significantly greater F/V intake observed in intervention group relative to control group at 2-yr F/U adjusting for demographics & baseline intake • Frequent church attendance significant predictor of increased F/V intake at 2-yr F/U for intervention group
Davis-Smith et al. (2007)	<ul style="list-style-type: none"> • Attendance • Fasting glucose • Weight • BMI 	<ul style="list-style-type: none"> • Six 60-minute sessions involving topics of nutrition, physical activity, & behavior counseling • Sessions led by volunteer healthcare professional • No specific religious content 	<ul style="list-style-type: none"> • Bivariate statistics pre and post intervention • Attendance rate 78% • Weight loss mean immediate 8.8 lbs 6-month F/U 6.5 lbs 12-month F/U 10 lbs • BMI mean decrease 1.9 kg/m² • No change in Glucose
Dodani et al. (2010)	<ul style="list-style-type: none"> • Weight 	<ul style="list-style-type: none"> • 12 sessions involving topics of healthy, fit, and spiritual lifestyle balance content • Scripture incorporated into content 	<ul style="list-style-type: none"> • Bivariate statistics pre and post intervention • 48% lost at least 5% of baseline weight • 26% lost 7% or more • 14% lost >10% baseline weight
Faridi et al. (2010)	<ul style="list-style-type: none"> • Demographics • Physical activity • Weight 	<ul style="list-style-type: none"> • 12-month education program provided by lay trained church members appointed by the pastor 	<ul style="list-style-type: none"> • Bivariate and multi-variate statistics • No significant

Authors	Measures	Descriptions of Interventions & Incorporation of Religious Content	Outcomes
	<ul style="list-style-type: none"> Height BMI Energy expenditure Social support Diabetes knowledge Nutrition pattern Exercise self-efficacy 	<ul style="list-style-type: none"> Curriculum included an introduction to diabetes, treatment, nutrition, physical activity, and healthy lifestyle Trained lay educators varied in their method and frequency of delivery of education to intervention group Inconsistent incorporation of religious content into education program Control group received no intervention 	<ul style="list-style-type: none"> differences between the control and intervention groups
Hahn et al. (1998)	<ul style="list-style-type: none"> Hemoglobin A1c Lipid levels Attendance 	<ul style="list-style-type: none"> Informed by focus groups Conducted in collaboration with trained community volunteers Four 2-hr sessions addressing the effects of diet on blood glucose & health with use of a discussion, "hands-on" learning experiences, & cooking demonstrations No religious content 	<ul style="list-style-type: none"> Bivariate statistics Significant reduction observed between initial program (M=12.13) & 6-month F/U (M=10.79) HbA1c levels No significant changes in lipid levels observed Attendance increased from session #1 (N=31) to session #4 (N=85)
Kennedy et al. (2005)	<ul style="list-style-type: none"> Demographics Weight Height Body composition Lipids Blood pressure Physical Activity Quality of life 	<ul style="list-style-type: none"> Conducted by trained, lay church members (1) Group intervention: 6-monthly nutrition group education sessions addressing ideal body weight, diet, & exercise, fat & salt intake, food groups, & choosing a healthy diet (2) Individual intervention: 15 individual meetings addressing similar nutritional content as group #1 with integration of behavioral aspects of weight loss No religious content 	<ul style="list-style-type: none"> Bivariate statistics Significant mean losses in body weight, fat mass, & fat-free mass observed in both groups with no significant differences between groups at 6-month F/U Significant improvement in QOL (physical functioning) for both groups at 6-month F/U Significant increase in physical activity (leisure time activity) for both groups at 6-month F/U
Kim et al. (2008)	<ul style="list-style-type: none"> Demographics BMI Physical activity Calorie & fat intake F/V intake Weight 	<ul style="list-style-type: none"> Eight weekly 85 minute sessions that incorporated physical activity, nutrition education, & social support Trained lay health advisors ran the sessions Sessions incorporated bible study about health Prayer ended each session The control group received a mailed health magazine that incorporated bible study, health, nutrition, and physical activity concepts once a month for 3 months 	<ul style="list-style-type: none"> Bivariate statistics Significant weight loss & increased recreational physical activity in the treatment group in relation to the control group at the post-intervention 8-week F/U

Authors	Measures	Descriptions of Interventions & Incorporation of Religious Content	Outcomes
Kumanyika et al. (1991)	<ul style="list-style-type: none"> Demographics Weight Blood pressure (BP) Food intake Physical activity Use of BP medications History of high BP 	<ul style="list-style-type: none"> Incorporation of lay health workers Eight weekly 2-hr session involving nutrition education, behavioral counseling, problem-solving, group support, & exercise to achieve weight loss goals & control BP No religious content 	<ul style="list-style-type: none"> Bivariate Statistics Significant reductions in weight & BP (systolic & diastolic) for participants taking BP medications or not at post-program F/U Weight reduction maintained or exceeded by 65% of participants at 6-month F/U No reduction in BP observed in external control group
McNabb et al. (1997)	<ul style="list-style-type: none"> Demographics Weight Height Waist circumference (WC) Eating behavior Weight loss behavior Exercise behavior 	<ul style="list-style-type: none"> Based on focus group findings Conducted by lay facilitators 14-weekly 1.5 hr sessions involving guided learning with individual identification of dietary behavior change goals & group problem-solving techniques to overcome obstacles to goal achievement No religious content 	<ul style="list-style-type: none"> Bivariate Statistics Significant reductions in weight, BMI, & WC in experimental group relative to control group at post-intervention F/U Significant improvements in high-fat food intake & eating behaviors in experimental group relative to control group at post-intervention F/U
Oexmann et al. (2001)	<ul style="list-style-type: none"> Demographics Weight Height BP Lipids Glucose level 	<ul style="list-style-type: none"> Developed in collaboration with local faith community Eight weekly group education sessions combining religious activities & health-related messages with integration of goal setting and social support Religious content 	<ul style="list-style-type: none"> Bivariate statistics Significant reductions in weight, BP, & total cholesterol for Blacks with high attendance at post-program F/U Significant reductions in weight and BP for Blacks with high attendance at 1-yr F/U
Reniscow et al. (2001)	<ul style="list-style-type: none"> Demographics F/V intake F/V intake expectations Low & high fat vegetable preparation practices Portion knowledge Church attendance Exercise frequency 	<ul style="list-style-type: none"> Informed by focus groups & advisory board Three treatment conditions: (1) standard nutrition education materials; (2) culturally sensitive multi-component self-help intervention with telephone cue call; (3) treatment #2 plus 3 counseling calls Religious content 	<ul style="list-style-type: none"> Bivariate & multi-variate statistics Significantly increased F/V intake observed in treatment condition #3 relative to group # 1 & 2 at 1-yr F/U Subgroup analyses indicated F/V intake outcomes were not modified by age, sex, income, or education
Samuel-Hodge et al. (2009)	<ul style="list-style-type: none"> Demographics Weight A1C Blood Pressure Nutrition Physical activity 	<ul style="list-style-type: none"> The interventions included: 1 individual counseling session, 12 biweekly 90–120 minute sessions, monthly telephone contact for four months, and three encouragement post-cards A1C was measured at the beginning of each session Sessions opened with a prayer 	<ul style="list-style-type: none"> Bivariate statistics Significant difference in the A1C measurements at the 8-month F/U No significant difference at the 12-month F/U

Authors	Measures	Descriptions of Interventions & Incorporation of Religious Content	Outcomes
		<ul style="list-style-type: none"> Sessions incorporated nutrition information, diabetes education, taste testing, 15 minutes of exercise, and group sharing/support The minimal intervention group received 2 pamphlets on healthy eating and staying active published by the ADA and 3 bimonthly newsletters containing health information by mail No religious content 	
Sbrocco et al. (2005)	<ul style="list-style-type: none"> Demographics Weight Height Behavioral adherence Eating patterns Psychosocial factors 	<ul style="list-style-type: none"> University & faith-based treatment conditions were identical Behavioral Choice Treatment (BCT) is a 13 week cognitive behavioral intervention based on a decision-making model of women's food choice encouraging moderate behavior change No religious content 	<ul style="list-style-type: none"> Bivariate statistics Significantly greater weight loss observed in African American church sample relative to university groups at post-treatment, 3-month, 6-month, & 12-month F/U All groups lost weight & maintained these losses at 12-month F/U
Smith et al. (1997)	<ul style="list-style-type: none"> Demographics Social support High BP (HBP) knowledge HBP risk factors HBP complications Health & stress HBP management strategies BP Mean arterial pressure (MAP) 	<ul style="list-style-type: none"> Trained as Community Health Educators (CHEs), registered nurses from participating churches delivered the intervention Eight 1-hr HBP education sessions addressing disease-related knowledge, stress management, & responsibilities for managing HBP with integration of social support Informal day-to-day or week-to-week contact to reinforce education & support No religious content 	<ul style="list-style-type: none"> Bivariate & multi-variate statistics Significant increases in HBP knowledge from pre- to post-intervention & at 3-month F/U Significant reduction in systolic BP & MAP from pre- to post-intervention Significant associations between social support & both MAP & BPs (systolic & diastolic)
Turner et al. (1995)	<ul style="list-style-type: none"> Demographics Program activity attendance BP Nutrition behavior 	<ul style="list-style-type: none"> Informed by community assessment procedures Program components implemented by church leaders & members Multi-component program involving church-based teaching & learning resources, culturally sensitive health education, weekly exercise and monthly "gospelize" classes, & other activities Religious content 	<ul style="list-style-type: none"> Bivariate statistics Increases in program activity attendance Significant reductions in systolic BP & increases in diastolic BP Significant reductions in consumption of high salt foods & red meat
Wiist et al. (1990)	<ul style="list-style-type: none"> Demographics Lipid levels BP 	<ul style="list-style-type: none"> Intervention delivered by trained church volunteers 	<ul style="list-style-type: none"> Bivariate & multi-variate statistics At 6-month F/U, significant reductions in cholesterol

Authors	Measures	Descriptions of Interventions & Incorporation of Religious Content	Outcomes
	<ul style="list-style-type: none"> Heart rate (HR) Weight Height Medical History Behavioral risk factors Dietary intake 	<ul style="list-style-type: none"> Control treatment: cholesterol screening & brief cholesterol reduction counseling Intervention: control conditions plus 6 weeks of 1-hr nutrition classes focused on an eating pattern & modified fat intake with F/U educational mailings No religious content 	<ul style="list-style-type: none"> levels observed in both groups with the control group demonstrating higher reductions than the experimental group At 6-month F/U, significantly greater reduction in cholesterol levels observed in female control participants relative to female intervention participants
Yanek et al. (2001)	<ul style="list-style-type: none"> Demographics Medical History Weight Height WC BP HR Lipids Glucose levels Dietary intake measures Smoking status Physical activity 	<ul style="list-style-type: none"> Informed by focus groups, in-depth interviews, & Community Expert Panel (CEP) After assessing for 20 weeks, lay leaders delivered interventions #1 & #2 for the remainder of the 1-yr program period (1) Standard intervention: weekly 1-hr sessions incorporating nutritional content & physical activity with behavioral goals related to exercise, dietary intake, weight management, & smoking cessation (2) Spiritual intervention: intervention #1 plus religious & CEP contextual components (3) Self-help intervention: materials addressing cardiovascular health & behavioral goals Religious content 	<ul style="list-style-type: none"> Bivariate statistics Intervention #1 operated identically with #2 as participants incorporated spirituality. Intervention groups #1 and #2 combined for data analyses Significant improvements in weight, WC, body fat, systolic BP, LDL, energy intake, dietary total fat, energy from fat, & sodium intake observed for combined intervention group at 1-yr F/U Significant reduction in energy from fat for self-help intervention group at 1-yr F/U Significant improvements in weight, WC, energy intake, total fat, & sodium intake for combined intervention group relative to self-help group at 1-yr F/U
Young et al. (2006)	<ul style="list-style-type: none"> Demographics Physical activity Peak oxygen uptake Weight Height BP Lipids Exercise self-efficacy Social support for exercise Quality of life 	<ul style="list-style-type: none"> Informed by focus group & community discussion (1) 6-month aerobic exercise intervention: 1-hr weekly exercise classes based on social cognitive theory with incorporation of prayer, gospel music, & optimization of social support (2) 6-month comparison intervention: alternating 1-hr weekly low-intensity stretching classes & health lectures addressing healthy eating, stress management, time management skills, & meal planning Religious content 	<ul style="list-style-type: none"> Bivariate statistics Physical activity did not significantly differ between intervention groups #1 & #2 with both groups reducing physical inactivity from baseline to 6-month F/U Higher baseline social support, self-efficacy, & QOL significantly predicted changes in physical activity levels for both intervention groups at 6-month F/U

Table 3**Faith-Based Intervention Studies: Recruitment & Retention Strategies**

Authors	Recruitment & Retention Strategies
Barnhart et al. (1998)	• Pastor endorsement & collaboration with a Churches Nurses' Unit
Campbell et al. (1999)	• Pastor endorsement; incentives (tangible & financial); social networks; & church/larger community expertise in organizing/conducting intervention components/activities
Davis-Smith (2007)	• Pastoral support from pulpit, established relationship with pastor, recruited one church member for the research team, advertisement in church bulletin, performed assessment during church services, sessions held on Saturday mornings, sessions began and ended with prayer
Dodani et al. (2010)	• Health Ministry team already existed, researchers had relationship with members of the health ministry, worked with church members to provide content as health advisor and they were provided with a small stipend
Faridi et al. (2010)	• Pastoral support; church member recruitment and support; trained lay church members provided all of the education and intervention to church members in the intervention group
Hahn et al. (1998)	• Community, local hospital, & participant marketing; flyers; prizes; & giveaways
Kennedy et al. (2005)	• Posters, flyers, church leader and member communication, financial incentive
Kim et al. (2008)	• Sign up sheets distributed after church services; church social support; announcements made during church events; flyers and posters on church bulletin boards; health day event held at local churches to promote interest
Kumanyika et al. (1991)	• Baltimore Church High Blood Pressure Program networks, program presentations at ministerial alliance meetings, church bulletin announcements & flyers, \$8 fee as evidence of commitment to program, awards for weight loss & attaining behavioral goals, social support, & alumni meetings
McNabb et al. (1997)	• Health & wellness screening
Oexmann et al. (2001)	• Pastor endorsement with congregational announcement & encouragement
Reniscow et al. (2001)	• Pastor endorsement, church-based liaisons, flyers, health fairs, church bulletin announcements, assistance with reading surveys for participants with limited literacy skills, & financial incentives (donations) for churches
Samuel-Hodge et al. (2009)	• Pastoral support from the pulpit, poster and pamphlet advertisements, collaboration with lay persons from participating congregations
Sbrocco et al. (2005)	• Newspaper advertisement, social support networks, & monetary incentives for completing the study
Smith et al. (1997)	• Church Health Educators recruited from direct contact with pastors, Church-Based Hypertension Consortium, & National Black Nurses Association.
Turner et al. (1995)	• Endorsement church leadership, radio, church bulletins & newsletters
Wiist et al. (1990)	• Health screenings with church leadership endorsement, church bulletin board notices, church bulletin/newsletters, & secular media
Yanek et al. (2001)	• Pastor endorsement & collaboration of lay leaders & pastors' wives in designing recruitment strategies for respective churches; e.g., church bulletin inserts, posters, "Recruitment Sundays," & announcements at church activities
Young et al.	• Pastor approval, flyers, church bulletin inserts, church service announcements, (2006) word-of-mouth publicity among congregants, & mailings