

The Faith, Activity, and Nutrition Program A Randomized Controlled Trial in African-American Churches

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Background: Faith-based interventions hold promise for promoting health in ethnic minority populations. To date, however, few of these interventions have used a community-based participatory research (CBPR) approach, have targeted both physical activity and healthy eating, and have focused on structural changes in the church.

Purpose: To report the results of a group randomized CBPR intervention targeting physical activity and healthy eating in African-American churches.

Design: Group RCT. Data were collected from 2007 to 2011. Statistical analyses were conducted in 2012.

Setting/participants: Seventy-four African Methodist Episcopal (AME) churches in South Carolina and 1257 members within them participated in the study.

Intervention: Churches were randomized to an immediate (intervention) or delayed (control) 15-month intervention that targeted organizational and environmental changes consistent with the structural ecologic model. A CBPR approach guided intervention development. Intervention churches attended a full-day committee training and a full-day cook training. They also received a stipend and 15 months of mailings and technical assistance calls to support intervention implementation.

Main outcome measures: Primary outcomes were self-reported moderate- to vigorous-intensity physical activity (MVPA), self-reported fruit and vegetable consumption, and measured blood pressure. Secondary outcomes were self-reported fat- and fiber-related behaviors. Measurements were taken at baseline and 15 months. Intent-to-treat repeated measures ANOVA tested group X time interactions, controlling for church clustering, wave, and size, and participant age, gender, and education. Post hoc ANCOVAs were conducted with measurement completers.

Results: There was a significant effect favoring the intervention group in self-reported leisure-time MVPA ($d=0.18$, $p=0.02$), but no effect for other outcomes. ANCOVA analyses showed an intervention effect for self-reported leisure-time MVPA ($d=0.17$, $p=0.03$) and self-reported fruit and vegetable consumption ($d=0.17$, $p=0.03$). Trainings were evaluated very positively (training evaluation item means of 4.2–4.8 on a 5-point scale).

Conclusions: This faith-based structural intervention using a CBPR framework showed small but significant increases in self-reported leisure-time MVPA. This program has potential for broad-based dissemination and reach.

Trial registration: This study is registered at www.clinicaltrials.gov NCT00379925.

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Introduction

Cardiovascular disease remains the leading cause of death in the U.S., and African Americans have higher rates of morbidity, mortality, and associated risk factors than whites.¹ Partnerships between faith communities and universities offer a unique opportunity to reach large numbers of individuals typically underrepresented in health promotion efforts. Faith-based health promotion programs generally have resulted in positive changes,^{2–4} but notable gaps remain in this knowledge base.

First, despite substantial benefits of physical activity,⁵ relatively few faith-based interventions have targeted physical activity,^{6–18} and many that have are very small studies and/or do not include measures of physical activity.^{13–19} Second, dietary factors other than fruit and vegetable consumption^{7,9,20–23} (e.g., fat, fiber, sodium) have received little attention.^{10,19} Third, with few exceptions,^{20,23} most interventions have focused on individual behaviors rather than church environment and policy/practices, limiting program reach and sustainability. Fourth, a community-based participatory research (CBPR) approach²⁴ rarely has been used in faith-based interventions or interventions targeting physical activity in African Americans in general,²⁵ with a few exceptions,^{8,10} despite its increased popularity and potential for making lasting changes.

In response to these gaps, the Faith, Activity, and Nutrition (FAN) program was developed.²⁶ This paper reports primary and secondary outcomes from FAN. It was hypothesized that members of intervention churches would show greater increases in self-reported moderate-to vigorous-intensity physical activity (MVPA) and self-reported fruit and vegetable consumption, greater reductions in measured blood pressure, and greater self-reported use of behaviors to reduce fat and increase fiber intake.

Methods

The FAN program, described in detail elsewhere,²⁶ tested a 15-month combined physical activity and dietary intervention that targeted social, cultural, and policy influences within African Methodist Episcopal (AME) churches in South Carolina. FAN used a CBPR²⁴ approach; a planning committee of church and university representatives worked together to develop, implement, evaluate, and disseminate the program. The study tested whether the intervention increased self-reported MVPA and self-reported fruit and vegetable consumption and led to greater improvements in measured blood pressure (primary outcomes) as compared to a delayed intervention control group. Secondary outcomes were self-reported fat- and fiber-related behaviors. In addition, objectively measured MVPA was obtained from a subsample of participants, but the small sample size (both church and participant levels) precluded change analyses.

Research Design

The FAN Program was a group randomized design with three waves of implementation. In Wave 1, clusters of churches were randomized to receive the intervention immediately after baseline assessments (intervention group) or at the end of a 15-month period (control group). Randomization by clusters was done because churches within them were in relatively close geographic proximity. In practice, however, church members rarely participated in events at churches other than their own. Thus, church-level randomization occurred in Waves 2 and 3.

Sample size calculations, based on $\alpha=0.05$, 80% power, predicted church intraclass correlation coefficients of 0.01 to 0.02, and small effect sizes projected a need for 30 churches/group and 600 participants/group (after attrition). Randomization was conducted by a study statistician who had no contact with or knowledge of churches. An attempt was made to balance the number of churches and projected participants within each district.

Church Recruitment

As reported elsewhere,²⁶ 131 pastors from four AME districts in South Carolina were sent letters from their presiding elder introducing the program and inviting participation. Program staff made follow-up telephone calls to provide more details about the program and answer questions. Pastors were encouraged to identify a church liaison, often the church health director, to assist with study activities. Three churches were deemed not eligible (one provided worship services in Spanish, one provided outreach but no worship services, one changed denominations and was no longer AME), leaving 128 target churches with an estimated membership of 36,384: of these churches, 56 were small (<100 members); 57 medium (100–500 members); and 15 large (>500 members). Wave 1 targeted 34 churches, Wave 2 targeted 63, and Wave 3 targeted 31.

Procedures

Pastor-appointed liaisons recruited members of their congregation to take part in baseline measurements. Churches were asked to recruit 13, 32, or 63 members for measurement, depending on their size (small, medium, and large, respectively). At baseline, participants completed an informed consent form approved by the IRB at the University of South Carolina, which first approved this study in 2006, and by the FAN planning committee. Eligible participants were those who reported being aged ≥ 18 years, free of serious medical conditions or disabilities that would make small changes in physical activity or diet difficult, and regular church attendees (for ≥ 1 /month to ensure intervention exposure). After participants provided consent, they completed a survey, and physical assessments were taken.

Participants were invited by mail to complete the survey and take part in a post-test assessment 15 months later (post-program). Churches were asked to make announcements at worship services to promote participation. Program staff called participants, reminded them to attend, and if they were unable to attend, invited them to attend a future session at a nearby church. Repeated contact attempts were made with participants who did not attend a session to request the return of their survey in a postage-paid envelope. Participants who completed a measurement session entered a drawing (one of every 15) for a \$15 gift card.

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