Primary Results from the Faith, Activity, and Nutrition (FAN) Program: A Faith-Based, Community-Based Participatory Study

1Sara Wilcox, 1Meghan Baruth, 2Marilyn Laken, 3Margaret D. Condrasky, 4Allen Parrott, 1Ruth Saunders, 1Marsha Dowda, 1Cheryl Addy

1University of South Carolina
2Medical University of South Carolina
3Clemson University
47th Episcopal District of the AME Church
Outline

• Provide a brief rational for faith-based interventions

• Describe the Faith, Activity, and Nutrition (FAN) program

• Present primary outcomes

Methods paper: Wilcox et al., 2010, Contemporary Clinical Trials
Outcomes paper: Wilcox et al., 2013, American Journal of Preventive Medicine
Why Faith-Based Partnerships?

• Reach – particularly for African Americans

• Trusted setting & able to target messages

• Facilities

• Compatible missions
Development & Overview of the FAN Program

Existing Partnership
- AME church
- MUSC
- USC

NIH CBPR RFA
- AME church
- USC
- MUSC
- CU
- Later, Allen U

One-year planning period
- Intervention
- Measurement approach
- Logistics

Developed and tested a 15-mo structural intervention
- Targets:
  - Physical activity
  - Diet
  - Group randomized trial
  - 3 waves

Wilcox et al., 2010, Contemporary Clinical Trials
Study Timeline

Committee Training
• 3-5 members/church
• Pastor
• FAN Coordinator
• Health Director
• Cook

Cook Training
• 2 members/church
• Cook or Lead Kitchen staff

Monthly mailings
• 15 months

Technical assistance calls
• Pastor, Cook, FAN coordinator

Control churches receive 15 month intervention

Pre measurements

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Post measurements

Month
Theoretical Framework

• Structural Ecologic Model
  – Assumes that behavior is influenced by 4 structural factors:
    • the **availability and accessibility** of products that are associated with health outcomes
    • **physical structures** that reduce or increase opportunities for healthy behaviors
    • **social structures** that require or prohibit behaviors (laws/policies)
    • cultural and media **messages**

Cohen et al, 2000
Intervention: Trainings

• Committee training
  – Pastor, FAN Coordinator, Health Director, Other Health Champions
  – Assessment & planning process
  – Core & suggested activities

• Cook & lead kitchen staff training
  – Church cooks, hospitality members/leaders
  – Interactive, hands on
  – Learned to modify “favorites”
  – Emphasized taste & appeal

Wilcox et al., 2010, Contemporary Clinical Trials; Condrasky et al., 2013, Evaluation and Program Planning
Intervention: Follow-Up Activities

• 15 months of mailings to support churches
  – Directed to Pastor, Cook & Committee
  – Incorporated strategies from Social Cognitive Theory

• Technical assistance calls
  – Delivered to Pastors, Cooks, FAN Coordinator
    • Rotational system
# Model Applied to the Church

<table>
<thead>
<tr>
<th>Target</th>
<th>Physical Activity Example</th>
<th>Nutrition Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase <strong>Opportunities</strong></td>
<td>Offer walking groups or other activities at church</td>
<td>Provide recipes with whole grains for members to try</td>
</tr>
<tr>
<td>Establish <strong>guidelines &amp; practices</strong></td>
<td>Incorporate a 10-min physical activity break into church meetings</td>
<td>Include fruits and vegetables at all church events with food</td>
</tr>
<tr>
<td>Promote messages through <strong>church “media”</strong></td>
<td>Ask the Pastor to wear a pedometer and talk about the importance of physical activity from the pulpit</td>
<td>Provide bulletin inserts that describe components of the DASH diet and tips for incorporating.</td>
</tr>
<tr>
<td>Ensure messages are <strong>culturally and spiritually appropriate</strong></td>
<td>Offer programs and materials that are designed for African Americans.</td>
<td>Link healthy eating to scripture.</td>
</tr>
</tbody>
</table>
Primary Outcomes

Baseline & 15 months later

Physical activity
- CHAMPS (Stewart et al., 2001)
- MVPA & leisure-time MVPA

Fruit & vegetable intake
- NCI Screener
- Cups/d

Blood pressure
- Dinamap ProCare automated monitor
- Average of 2\textsuperscript{nd} & 3\textsuperscript{rd} readings

*r with Actigraph MVPA = .33
Analyses

• Intent to treat
  – Repeated measures ANOVA (SAS PROC MIXED)
    • Controlled for church clustering, wave, and size; participant age, gender, education
    • DVs: MVPA, LT MVPA, F&V, SBP, DBP
    • IV of interest: Group x Time (df = 1, 72)

• Post-hoc program measurement completers
  • ANCOVA

• Effect size for each model (d)
PRIMARY RESULTS

Reported in Wilcox et al., 2013, American Journal of Preventive Medicine
128 Churches invited to participate in FAN (56 S, 57 M, 15 L)

74 churches had members who completed at least one primary outcome measure (57.8%)
1257 members (232 S, 747 M, 278 L)

Randomization

38 Intervention churches (12 S, 19 M, 7 L)
749 members (129 S, 414 M, 206 L)

36 Control churches (14 S, 20 M, 2 L)
508 members (103 S, 333 M, 72 L)

Retained 37 churches at 15-mos
466 members (75 S, 259 M, 132 L) 62.2%

Retained 33 churches at 15-mos
307 members (46 S, 220 M, 41 L) 60.4%
### Participant Characteristics (N=1,257)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (SD) or %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years</td>
<td>54.1 (14.1)</td>
</tr>
<tr>
<td>% Black or African American</td>
<td>99.4</td>
</tr>
<tr>
<td>% Women</td>
<td>75.7</td>
</tr>
<tr>
<td>Education</td>
<td></td>
</tr>
<tr>
<td>&lt; High school</td>
<td>10.3</td>
</tr>
<tr>
<td>High School / GED</td>
<td>32.2</td>
</tr>
<tr>
<td>Some college</td>
<td>29.5</td>
</tr>
<tr>
<td>College graduate</td>
<td>28.0</td>
</tr>
<tr>
<td>% Married / partnered</td>
<td>53.7</td>
</tr>
<tr>
<td>BMI, kg/m2</td>
<td></td>
</tr>
<tr>
<td>Normal weight</td>
<td>11.1</td>
</tr>
<tr>
<td>Overweight</td>
<td>27.1</td>
</tr>
<tr>
<td>Obese</td>
<td>61.8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (SD) or %</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Current smokers</td>
<td>6.8</td>
</tr>
<tr>
<td>Health conditions:</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>64.7</td>
</tr>
<tr>
<td>High cholesterol</td>
<td>39.7</td>
</tr>
<tr>
<td>Arthritis</td>
<td>35.4</td>
</tr>
<tr>
<td>Diabetes</td>
<td>23.5</td>
</tr>
<tr>
<td>Asthma</td>
<td>11.5</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>8.5</td>
</tr>
<tr>
<td>Angina or CHD</td>
<td>6.8</td>
</tr>
<tr>
<td>MI</td>
<td>3.7</td>
</tr>
<tr>
<td>Stroke</td>
<td>3.4</td>
</tr>
<tr>
<td>Total # health conditions</td>
<td>1.9 (1.6)</td>
</tr>
</tbody>
</table>

| Self-rated health               |                 |
|   Excellent or VG               | 29.1            |
|   Good                          | 52.3            |
|   Fair or Poor                  | 18.7            |
Intent to Treat Results
Physical Activity (hr/wk)

MVPA

Intervention | Control
---|---
Pre | Post

Leisure-time MVPA

Intervention | Control
---|---
Pre | Post

** Note that lsmeans are presented in the original unit; analyses used sqrt value due to skewed distributions
**ANCOVA Results**

**Physical Activity (hr/wk)**

- **MVPA**
  - Intervention: Post
  - Control: Post
  - $d = 0.15, p = .06$

- **Leisure-time MVPA**
  - Intervention: Post
  - Control: Post
  - $d = 0.17, p = .03$

**Note** that lsmeans are presented in the original unit; analyses used sqrt value due to skewed distributions.
Intent to Treat Results
Fruit & Vegetables (cups/d)

$d = 0.09, p = .25$

** Note that lsmeans are presented in the original unit; analyses used sqrt value due to skewed distributions
ANCOVA Results
Fruit & Vegetables (cups/d)

\[ d = 0.17, p = .03 \]

** Note that lsmeans are presented in the original unit; analyses used \( \sqrt{\text{value}} \) due to skewed distributions
Intent to Treat Results
Blood Pressure (mmHg)

SBP

\[ d = 0.05, \ p = .58 \]

DBP

\[ d = 0.01, \ p = .91 \]
Summary & Conclusions

• FAN positively impacted LT MVPA and F&V consumption
  – Small effect sizes, but statistically significant
  – Could be meaningful if implemented broadly and sustained over time

• Major limitation: low evaluation post response rates & self-reported PA

• Challenges: Engaging busy church leaders, structural changes take time

• FAN was innovative in its use of:
  – CBPR
  – Structural approach
  – Potential for greater reach & sustainability
Faith, Activity, and Nutrition

Faith, Activity, and Nutrition (FAN) was a program designed to increase healthy eating and physical activity among African Methodist Episcopal (AME) church members. Although designed with the AME church in mind, the information and tools provided in the online FAN Committee and FAN Cook trainings can assist any denomination or group interested in promoting healthier behaviors and environments. FAN aims to create a healthier church body, where the majority of members see and hear health messages that encourage healthy lifestyle choices. For we believe, with strong physical health, church members can become stronger in spirit and more active in church life.

The goals of FAN are to help AME members become stronger in health by:

- Becoming **physically active** at a moderate intensity (e.g., brisk walking) for 30 minutes per day, at least five days per week
- Eating around 5 cups of **fruits and vegetables** each day
- Eating **whole grain** foods (e.g., whole wheat bread instead of white bread, brown rice and pasta instead of white rice and pasta)
- Eating **less fat**, especially saturated fat
- Eating **less sodium** (salt)

The type of activities you select to meet the FAN goals will depend on the needs and interests of your congregation or group. Determining what works best can be achieved by a diverse committee of...
Acknowledgements

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• Other (many) staff and students

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