DEBORAH KINNARD

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Creating Healthier Faith-Based Environments to Promote Health in Underserved Communities: Insights from the Faith, Activity, and Nutrition (FAN) Program in Rural South Carolina

Deborah Kinnard has indicated she has no relevant financial relationships within the past 12 months.
CREATING HEALTHIER FAITH-BASED ENVIRONMENTS TO PROMOTE HEALTH IN Underserved Communities:
Insights from the Faith, Activity, and Nutrition Program in Rural South Carolina

Deborah Kinnard & Sara Wilcox
University of South Carolina Prevention Research Center
Health and Barriers to Health in Rural Communities

Overview of FAN
- Evidence-based program
- Targets policy, systems, & environmental change

Results of Phase I of the FAN Dissemination & Implementation (D&I) Study

Learnings and Recommendations
### Selected Social Determinants of Health for Rural Areas

<table>
<thead>
<tr>
<th></th>
<th>US</th>
<th>Rural US</th>
<th>SC</th>
<th>Rural SC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avg per capita income</td>
<td>$51,640</td>
<td>$38,188</td>
<td>$41,633</td>
<td>$34,310</td>
</tr>
<tr>
<td>Poverty rate</td>
<td>13.4%</td>
<td>16.4%</td>
<td>15.4%</td>
<td>22.3%</td>
</tr>
<tr>
<td>Not completed high school</td>
<td>12.7%</td>
<td>14.4%</td>
<td>13.5%</td>
<td>19.0%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4.4%</td>
<td>4.7%</td>
<td>4.3%</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

## SOUTH CAROLINA HEALTH BEHAVIORS

### Measure

<table>
<thead>
<tr>
<th>Measure</th>
<th>US</th>
<th>SC</th>
<th>SC Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult obesity</td>
<td>29%</td>
<td>32%</td>
<td>23-43%</td>
</tr>
<tr>
<td>Physical inactivity</td>
<td>22%</td>
<td>25%</td>
<td>16-36%</td>
</tr>
<tr>
<td>Food environment index</td>
<td>7.7</td>
<td>6.3</td>
<td>5.0-8.2</td>
</tr>
<tr>
<td>Access to exercise opportunities</td>
<td>84%</td>
<td>69%</td>
<td>7-96%</td>
</tr>
</tbody>
</table>

Source: County Health Rankings. 2019.
WHY FAITH-BASED ORGANIZATIONS?

- Reach and diversity
- Able to reach groups that would most benefit
  - Midlife and older adults
  - Racial and ethnic minorities
  - Rural communities
- Important and trusted
- Physical resources
- Spiritual and cultural tailoring

Attendance at religious services
Source: Pew Research Center, November 2015
DEVELOPMENT OF THE FAITH, ACTIVITY, AND NUTRITION (FAN) PROGRAM

- Partnership with 7th Episcopal District of the AME Church (NIH R01)
  - CBPR approach to develop, implement, and evaluate FAN

- Study results: significant increases in physical activity and fruit & vegetable intake in members (Wilcox et al., 2013, Am J Prev Med)

- Indexed in National Cancer Institute’s Research Tested Intervention Program (RTIPs): https://rtips.cancer.gov/rtips/index.do

Greater St. Luke AME Church, N. Charleston, SC
PRIMARY GOAL & STRATEGIES OF FAN

- Help create a healthy church environment for physical activity (PA) & healthy eating (HE)
  - **PA:** 150+ minutes/week, moderate-intensity
  - **HE:** Increase fruits, vegetables, whole grains
    Decrease unhealthy fats, sodium

- Focus on 4 primary strategies to reach all members
  - **Flexible** – churches choose activities for each strategy
### EXAMPLES OF STRATEGIES

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase opportunities</td>
<td>Include fruits and vegetables with meals and snacks served before, during, or after church functions</td>
</tr>
<tr>
<td>Set church policies</td>
<td>All church meetings lasting &gt;45 minutes will include a 10-min physical activity break.</td>
</tr>
<tr>
<td>Enlist leader support</td>
<td>Provide pastor pedometer &amp; messages to share with congregation. Provide ideas for how pastor can support program.</td>
</tr>
<tr>
<td>Get the message out</td>
<td>Share healthy eating &amp; physical activity messages on church bulletin boards, from the pulpit, and through church bulletin inserts.</td>
</tr>
</tbody>
</table>
FAN INTERVENTION

- Church creates FAN committee (3-5 people)
- Committee attends in-person training
  - Active breaks (3)
  - Healthy lunch & food demo/tasting
  - Resources
- Church submits FAN Program Plan and holds FAN kick-off event
- Committee meets regularly to plan activities and participates in 12 monthly TA calls (brief)

University staff trained Community Health Advisors to deliver all intervention components.
RESULTS
TWO PHASES OF FAN DISSEMINATION & IMPLEMENTATION STUDY

Phase I: Fairfield County, SC
- Population of ~23,000
- 59% African American
- 15% with BA or higher
- 21% below poverty level
- Rural & medically underserved
- DHEC priority county
- Health Ranking: 39/46

Phase II: South Carolina Conference of the United Methodist Church
- ~1,000 churches; 238,000 members
- Substantial proportion of predominantly AA churches

FAN D&I Study Aims
- Use RE-AIM model to study
  - Reach: # and % of people
  - Efficacy/Effectiveness: impact on outcomes
  - Adoption: # & % of churches
  - Implementation
  - Maintenance

- Use Consolidated Framework for Implementation Research (CFIR) to examine factors that influence adoption, reach, implementation, & maintenance
  (Damschroder et al., 2009, Implement Sci)
CHURCH ADOPTION OF FAN

Phase 1: Fairfield County

- 55 churches trained in FAN (of ~132 in county)
- 42% adoption
  - Predominantly African-American congregations (92%)
  - Many churches participated in earlier tobacco-free initiative (67%)
IMPLEMENTATION RESULTS

- FAN Coordinators interviewed at baseline and 12-months later (N=54)
- Intervention churches had significantly greater implementation changes than control churches:
  - All areas except opportunities for fruit (p=.10) and vegetables – but scores almost 4/5 at baseline
- Effects were large
- Results replicated earlier study (Wilcox et al., 2013, Am J Prev Med)

Source: Saunders et al., 2018, Health Educ Behav

<table>
<thead>
<tr>
<th>Key implementation targets</th>
<th>Effect Size (d)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical activity</strong></td>
<td></td>
</tr>
<tr>
<td>Opportunities</td>
<td>*1.5</td>
</tr>
<tr>
<td>Guidelines</td>
<td>*1.2</td>
</tr>
<tr>
<td>Pastor support</td>
<td>*1.6</td>
</tr>
<tr>
<td>Messages</td>
<td>*1.1</td>
</tr>
<tr>
<td><strong>Healthy eating</strong></td>
<td></td>
</tr>
<tr>
<td>Opportunities – fruit</td>
<td>0.5</td>
</tr>
<tr>
<td>Opportunities – vegetables</td>
<td>0.0</td>
</tr>
<tr>
<td>Guidelines – fruit</td>
<td>*1.2</td>
</tr>
<tr>
<td>Guidelines – vegetables</td>
<td>*0.7</td>
</tr>
<tr>
<td>Pastor support</td>
<td>*1.1</td>
</tr>
<tr>
<td>Messages</td>
<td>*1.4</td>
</tr>
</tbody>
</table>

*p<.05. ES compared means at post vs pre for intervention vs. control churches
Administered anonymous surveys after worship service between June and October of 2016

- 8-12 months after training of early churches (before training of delayed churches)
- Post-test only

- 35 early (intervention) churches
- 19 delayed (control) churches

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Early (n=811) Mean (SD) or %</th>
<th>Delayed (n=497) Mean (SD) or %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years (SD)</td>
<td>53.0 (15.6)</td>
<td>56.7 (15.4)</td>
</tr>
<tr>
<td>Black or African American, %</td>
<td>96</td>
<td>84</td>
</tr>
<tr>
<td>Women, %</td>
<td>70</td>
<td>67</td>
</tr>
<tr>
<td>Some college or college graduate, %</td>
<td>50</td>
<td>51</td>
</tr>
<tr>
<td>Body mass index, kg/m² (SD)</td>
<td>31.3 (6.9)</td>
<td>30.6 (6.7)</td>
</tr>
<tr>
<td>Overweight or obese, %</td>
<td>85</td>
<td>83</td>
</tr>
<tr>
<td>Self-reported health conditions, %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>54</td>
<td>57</td>
</tr>
<tr>
<td>High cholesterol</td>
<td>35</td>
<td>38</td>
</tr>
<tr>
<td>Arthritis</td>
<td>34</td>
<td>33</td>
</tr>
<tr>
<td>Diabetes</td>
<td>23</td>
<td>25</td>
</tr>
</tbody>
</table>

Est. 71% of church attenders completed the survey

FAIRFIELD COUNTY EFFECTIVENESS: CHURCH ENVIRONMENT

Note: Linear regression models adjusted for age, gender, education & self-report of cancer diagnosis (individual) as well as church clustering and predominant race of congregation [Cohen's $d = (\text{mean early} - \text{mean late})/\text{pooled SD}]$. * $p < .05$.

% meeting recommendations

OR = 1.17 (0.88, 1.56), p=.27

% inactive

*OR = 0.58 (0.37-0.91), p=.02

Note: Logistic model adjusted for age, gender, education & self-report of cancer diagnosis (individual) as well as church clustering and predominant race of congregation. OR indicates odds ratio (95% CI). *p<.05.

“Coming from this county, I knew you chose the right place with all of the health issues I see and the growth of fast food places. FAN opens a door of opportunity for better health. Many uninsured and unemployed here use the hospital like a doctor’s office. They don’t have a regular doctor. FAN provides information that any church member can pick up and use and get out to the community. Having FAN in churches gives people support and encouragement in a nonthreatening way. With improved health, members will be better able to serve, do more outreach, and be more active in sharing the good news.”

Ms. Josephine (Joey) Beckham, FAN Coordinator
Bethel United Methodist Church, Winnsboro, SC
SUMMARY OF LESSONS LEARNED & RECOMMENDATIONS

- FBOs are important partners in eliminating health disparities & improving population health
  - Important resource in rural & low resource communities
  - Way to reach people in routine and trusted settings

- FAN is an evidence-based, flexible, and relatively low cost/resource dependent program
  - Training & TA delivered by community health advisors
  - Led to large organizational changes & small member changes

- Selecting interventions that target policy, systems, and environments and have greater reach and adoption, even if paired with lower effectiveness, can lead to greater public health impact (RE-AIM)

- Future analyses will examine predictors of implementation & maintenance of FAN in both phases
FAN MATERIALS ARE AVAILABLE!

- Visit the UofSC PRC website to download FAN materials from the Resources tab. [http://prevention.sph.sc.edu/resources.htm](http://prevention.sph.sc.edu/resources.htm)

- FAN is included in the Rural Health Information Hub as an intervention with a “promising evidence” ranking. [https://www.ruralhealthinfo.org/project-examples/1011](https://www.ruralhealthinfo.org/project-examples/1011)

- FAN is indexed in the National Cancer Institute’s Research Tested Intervention Programs [https://rtips.cancer.gov/rtips/programDetails.do?programId=10977999](https://rtips.cancer.gov/rtips/programDetails.do?programId=10977999)

- Coming soon– Fall 2020! FAN online training modules!
A BIG THANK YOU TO…..

- The AME church leaders & members who partnered with us to develop FAN
- Current Partners
  - Fairfield Behavioral Health Services
  - Fairfield Community Coordinating Council
  - SC Conference of the United Methodist Church
- Pastor Health Advisors & Community Health Advisors
- USC PRC Co-investigators, staff and students
- All participating churches

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http://prevention.sph.sc.edu/