USING CBPR TO ENGAGE FAITH COMMUNITIES AND STUDENTS IN DIABETES PREVENTION INTERVENTIONS: SCALABLE IMPLEMENTATION AND LEARNING MODELS
Acknowledgements

- UMKC Community Health Research Group (CHRG) Team
  - Carole Bowe Thompson, Sheila Lister, Nia Johnson, Alex Bauer, Kelsey Christensen, Natasha Aduloju-Ajijola, Courtnei Garrett, and the many students who serve in the CHRG

- SOM Colleagues
  - Miranda Huffman and Katherine Ervie

- Calvary Community Outreach Network

- Children’s Mercy Kansas City

- KCMO and KCKS participating churches

- KC CARE Health Center

- YMCA
Overview

- Background: Health disparities and implementation science
- Community Health Research Group and participatory research
- Engaging faith communities in diabetes prevention
- Engaging students in diabetes prevention
- Lessons learned
<table>
<thead>
<tr>
<th>Health Condition</th>
<th>African Americans</th>
<th>Hispanics/Latinos</th>
<th>American Indians</th>
<th>Asian Americans</th>
<th>Whites</th>
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</thead>
<tbody>
<tr>
<td>Unhealthy housing</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>Poor air quality</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>X</td>
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<tr>
<td>Influenza immunizations</td>
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<td>X</td>
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<td>Colon cancer screening</td>
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<td>X</td>
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<td>Infant deaths</td>
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<td>Motor vehicle deaths</td>
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<td>Suicides</td>
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<td><strong>Hypertension</strong></td>
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<tr>
<td><strong>Diabetes</strong></td>
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<tr>
<td><strong>Obesity</strong></td>
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<td>X</td>
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<tr>
<td>Asthma</td>
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<td>X</td>
<td>X</td>
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<td></td>
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<tr>
<td>HIV</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>Homicides</td>
<td>X</td>
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</table>
Life expectancy by zip code, Kansas City, MO 2008-2012

<table>
<thead>
<tr>
<th>Age</th>
<th>Nonwhite</th>
<th>Below poverty@</th>
<th>Median family@</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>income ($)</td>
</tr>
<tr>
<td>81-83 years</td>
<td>11.3</td>
<td>8.0</td>
<td>92,258</td>
</tr>
<tr>
<td>73-79 years</td>
<td>35.6</td>
<td>21.3</td>
<td>53,264</td>
</tr>
<tr>
<td>70-72 years</td>
<td>82.4</td>
<td>37.4</td>
<td>27,899</td>
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</tbody>
</table>

*Too small population to calculate life expectancy

@ 2008-2012 American Community Survey 5-Year Estimates
Implementation Science:
The study of methods to promote the adoption and integration of evidence-based practices, interventions and policies into routine health care and public health (and community) settings.

-NIH
CDC National Diabetes Prevention Program

- Original DPP study decreased onset of T2DM by 58% (heavily resourced)
- Evidence-based (for most)
- Disseminated across U.S.
- Free access to materials

Goals:
- Modest weight loss (4-5%)
- 150 min/week exercise

BUT.....
Community-based Participatory Research Approach

Roles of Faith Leaders Across Research Process

- Agenda Setters
- Intervention Developers
- Intervention Implementers
- Evaluators
- Disseminators

KC Faith Initiative
What We Do

Community-Engaged Research

Diabetes & Heart Disease

Access to Care

African American Health Disparities

HIV & STDs

Hepatitis C

KC Faith Initiative
Religiously-Tailored Supportive Tool Kits

Sermon guides
Responsive readings
Video and print testimonials
Church bulletins/brochures
Educational games
Bible bookmarks and more

Multilevel Interventions

Community examples:
- TIPS Revival
- Outreach Ministries
- RAGC conference

Church Services examples:
- Sunday morning service
- Sunday school
- Bible study

Ministry Groups examples:
- Women's Ministries
- Singles Ministries
- Youth Ministries

Interpersonal examples:
- Peer-to-Peer
- Telephone messages
- Text messages

Community
Church Services
Ministry Groups
Individual/ Interpersonal

Access to Care

During church services:
Health screenings, linkage to care, weight loss programs

HOW?
WHERE and WHY?

- Church-Community Settings
  - Diverse memberships
  - Similar beliefs and activities
  - Multilevel “contact” outlets
  - Outreach ministries for the underserved
  - Behavioral influence and social support

More than 50% of African Americans sitting in pews on Sundays!!!

- SCALABILITY AND SUSTAINABILITY
Why African American Churches?

There’s a lot of them!!
Just a few of the churches near the UMKC Health Science District.
Church-University Development of Grant Proposal

Church Services Social
- Testimonals
- Sermons
- News
- Reso Reading
- Church Bulletins/News
- Videos
- Checklist/Resources
- Commitment Cards
- Screening
- PA in worship, on day

Church/Community Health Ministries
- Seminars (education)
- Walking Club/PA
- Healthy eating/ cooking classes
- Ongoing CHL training
- Pills on healthy food

Back office of Calvary Community Outreach Network
Health Needs Assessment Survey

Participants Most Frequently Reported Diagnosed Health Conditions (%)

- High Blood Pressure: 44%
- High Cholesterol: 26%
- Diabetes: 19%
- Asthma: 15%
- HIV/STIs: 3%
Priority Health Disparity Issues Identified

Importance of Health Disparity Priority Issues*

- Diabetes: 61%
- Heart Disease/Stroke: 62%
- Homicide: 39%
- STD/HIV: 38%
- Mental Health: 29%
- Asthma: 28%
PROJECT FIT GOALS

Motivate lifestyle change

Eat healthy

Exercise

Modest Amount of Weight Loss

- 6 Churches (3 Intervention & 3 Comparison churches)
Research Questions

Can a faith-based, multilevel diabetes/CVD prevention intervention (Project FIT) reduce weight among African American church and community members?

Can a weekly weight loss class enhance weight loss for church and community members at great risk for diabetes?
Project Aims: Increasing healthy eating, exercise, and weight loss; health screenings; and linkage to care
Project FIT Religiously-tailored Tool Kit

- Sermon guides
- Responsive readings
- Commitment card
- Church bulletins
- Brochures
- Text/phone/email messages
- Risk checklist
- Church healthy food policy
- Bible bookmarks
FIT Church-based Health Screening Findings

352 church and community member participants from 6 churches

- 87% overweight/obese
- 54% high blood pressure
- 40% high cholesterol
- 22% diagnosed with diabetes
- 17% engaged in regular exercise
- 10% consumed 5 or more fruits/vegetables per day
FIT Feasibility and Outcomes

- Trained church leaders delivered about 3 tools/month
- Church-based health screenings during Sunday morning services was feasible
- Linkage to care was feasible
- DPP intervention participants had greater odds achieving $\geq 5$ lb weight loss
  - [Odds Ratio: 3.58 (0.89, 14.4 Confidence Interval ) $p < 0.072$]
  - More classes participants attended = greater weight loss
What Worked? ....And Didn’t

**What Worked**
- Church-based health screenings *during* church services
- Immediate screening results
- Church health liaisons implementing FIT tools
- Engaged pastors
- One-time use of LTC services
- Weekly weight-loss DPP program

**Challenges**
- Walking/exercise programs weren’t implemented
- 80% of participants at risk for DM, but only 25% enrolled in DPP
- Continued presence of Project FIT, especially DPP, in all churches
HOW CAN STUDENTS BE ENGAGED TO INCREASE CAPACITY FOR SUSTAINABILITY and SCALABILITY?
DPP: An Interprofessional Service Learning Course

- SOM Courses (combined)
  - Ambulatory Care
  - Physician Assistant Program Practicum

- Course Components
  - Project FIT/DPP Background
  - Social determinants
  - Motivational interviewing
  - African American church culture
  - DPP facilitation (e.g., facilitation guides, procedures)
  - Role play
Student Evaluation

- Attendance
  - DPP sessions
  - Class sessions (training and debriefing/discussion sessions)
- Weekly reflections
- Completion of peer and self-evaluations
- Evaluation by supervising faculty
- Evaluation by community participants
FIT 2.0: SOM Student-facilitated DPP

- **In Fall 2016**
  - 36 UMKC School of Medicine medical and physician assistant students trained (with course credit)
    - To facilitate weekly DPP sessions and lead low-impact exercise
    - Weigh and take blood pressure with DPP participants
    - Completed CITI training

- **In January 2017: Student-facilitated DPP (with course credit)**
  - 72 church member participants from 3 churches enrolled in the FIT 2.0 study
    - Completed surveys on health beliefs and behaviors; 90% overweight/obese
    - Had their weight/height and blood pressure assessed
FIT 2.0 Intervention

- 3 churches and 4 DPP groups
  - About 5-7 students per class
- Student facilitation 12-week DPP and exercise
  - Students weighed participants, did blood pressure weekly
  - CHLs read opened/closed sessions with scriptures and prayers; distributed FIT tools
  - DPP interactive sessions about 45 minutes
  - DPP exercise about 30 minutes
- Monthly student class reflections and debriefing
## FIT 2.0 Participant Outcomes

- **80% Participant retention**

<table>
<thead>
<tr>
<th>Weight change in pounds (mean, SD)</th>
<th>Overall</th>
<th>By Sex</th>
<th>Early participation (1st month)</th>
<th>Participation over 3 months</th>
<th>By Initial Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=60</td>
<td>N=13</td>
<td>N=47</td>
<td>N=29</td>
<td>Normal weight N=16</td>
</tr>
<tr>
<td>Weight change in pounds</td>
<td>-1.72 (6.4)</td>
<td>-1.3 (4.5)</td>
<td>-1.9 (6.9)</td>
<td>0.772</td>
<td>-0.3 (6.2)</td>
</tr>
<tr>
<td>5 lbs</td>
<td>28.3%</td>
<td>23.1%</td>
<td>29.8%</td>
<td>0.641</td>
<td>20.7%</td>
</tr>
<tr>
<td>3%</td>
<td>20.0%</td>
<td>7.7%</td>
<td>23.4%</td>
<td>0.217</td>
<td>13.8%</td>
</tr>
<tr>
<td>5%</td>
<td>8.3%</td>
<td>0%</td>
<td>10.6%</td>
<td>0.226</td>
<td>3.4%</td>
</tr>
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</table>
FIT 2.0 Participant and Student Comments

- **Participants**
  - Expressed great appreciation of student DPP coaches
  - Had great camaraderie with students
  - Doctors were pleased with weight loss
  - **Want to see the program continue**

- **Students:**
  - Learned about community prevention intervention
  - **Believed an entire semester of DPP training was not needed; more time was needed in clinical settings seeing patients**
  - Were very comfortable facilitating the DPP and exercise
  - Some were uncomfortable leading DPP in church settings
FIT 4.0

Here’s the numbers:

- 34 UMKC SOM medical and PA students
- Training shortened to a 2-hr class and a JIT training
- 9 churches in 8 DPP classes!!
- 142 church participants
- Smaller groups of students (about 4)
- 30 minutes of exercise followed by 45 minutes of DPP class
## Project FIT 4.0 Preliminary

<table>
<thead>
<tr>
<th>Church</th>
<th>Average Attendance (Week 4)</th>
<th>Average Attendance (Week 9)</th>
<th>Sum of Pounds Lost/Gained</th>
<th>Average Pounds Lost per Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Church 1</td>
<td>68%</td>
<td>56%</td>
<td>-65</td>
<td>-4.1</td>
</tr>
<tr>
<td>Church 2</td>
<td>47%</td>
<td>40%</td>
<td>-20</td>
<td>-3.1</td>
</tr>
<tr>
<td>Church 3</td>
<td>59%</td>
<td>41%</td>
<td>-45</td>
<td>-1.8</td>
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<tr>
<td>Church 4</td>
<td>88%</td>
<td>81%</td>
<td>-14</td>
<td>-1.0</td>
</tr>
<tr>
<td>Church 5</td>
<td>52%</td>
<td>37%</td>
<td>-21</td>
<td>-3.1</td>
</tr>
<tr>
<td>Church 6</td>
<td>55%</td>
<td>53%</td>
<td>-26</td>
<td>-2.0</td>
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<tr>
<td>Church 7</td>
<td>75%</td>
<td>60%</td>
<td>-121</td>
<td>-3.9</td>
</tr>
<tr>
<td>Church 8</td>
<td>52%</td>
<td>34%</td>
<td>-10</td>
<td>-1</td>
</tr>
<tr>
<td>Average</td>
<td>62%</td>
<td>50%</td>
<td>-322 (total)</td>
<td>-2.5</td>
</tr>
</tbody>
</table>
## CHLs/Participant and Student Reflections

### CHLs/Participants
- “Good morning ladies. I just want you to know that Palestine had so much fun with the interns this past Tuesday. We had about 30 participants (I should have counted 😱😱). I'll do better next week. The exercise was great and the class time was fantastic!”
- “We love our facilitators! They are so helpful, informative. We look forward to class.”
- “Facilitators are more confident each week.”
- “Facilitators are a good fit for our church. They are like family. Everyone is comfortable with each other (facilitators & participants).”

### Students
- “Exposing medical students/professionals to people from different backgrounds and marginalized communities. It increases empathy and social competence. It was also nice to get to know the students from the other program. It gave me some insight into their field and I value their profession a lot more.”
- “The most valuable aspect of this course was that we got to interact with patients in a real life setting and truly connect with them. It was such a great experience to get to know the group and help them learn life skills that could help them in the future.”
Meeting people in a community that was different than what I am used to. Before the program, I was extremely nervous about driving through the area of town my church was in but after driving there every week and hearing the women in the church talk about walking around the neighborhood and knowing that they live there, I realized my fears were rooted in stereotypes and 'unintentional' racism. Also, I had never been exposed to an African American church setting before and the feeling of community and positivity was amazing. I would love to work with this population in the future. The participants were some of the most genuine and kind people I have encountered. This experience taught me the positive impact that working in a community setting can have on me personally and on patients.

-Student
Participant and Student Reflections

- **Project FIT participants**
  - [https://www.dropbox.com/sh/e0984nf25efgfin/AAC8UsZszs2yBohb64BcwE_Sa?dl=0](https://www.dropbox.com/sh/e0984nf25efgfin/AAC8UsZszs2yBohb64BcwE_Sa?dl=0)
  - [Project FIT_1st Video_1st Song.mp4](http://example.com/projectFIT1stVideo1stSong.mp4)

- **Student video:**
  - [..\..\Research Projects\FIT Phase IV\Video\Anna FIT FacilitatorTrim.mp4](http://example.com/facilitatorTrim.mp4)
  - [Anna FIT FacilitatorTrim.mp4](http://example.com/AnnaFITFacilitatorTrim.mp4)
Lessons Learned

- Churches want to offer prevention services to their members
- Highly engaged community members and students can implement evidence-based prevention interventions together
- Training doesn’t need to be extensive, but does not to be well-organized and thorough
- Students expressed their personal and educational benefits of participating
- Increased student capacity can help serve more community members
- Implementation Science (capacity, sustainability, fidelity, adaptation) accomplished with community and student engagement
What’s Next?

- Increased participating churches to 15 churches this fall with 65 students!
- Engaging churches and students to build and maintain community gardens
- Preparing grants to linkage patients with community-based DPP