HEALTH FOR A CHANGE

Homegrown Community Solutions to Increase Fruit & Vegetable Consumption & Physical Activity in Appalachia

November 13, 2020

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Foundation for a Healthy Kentucky’s MISSION

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- Reducing health risks and disparities
- Promoting health equity

And VALUES. . .
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- Respect
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- Collaboration
- Policy Equity

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Pine Mountain, Whitesburg KY
Homegrown Community Solutions to Increase Fruit and Vegetable Consumption and Physical Activity in Appalachia

Dawn Brewer, Annie Koempel, Callie Blair, Valerie Horn
Outline

• Building Community-University Relationships - Dawn Brewer
• Walking Program Background – Valerie Horn
• Walking Program and Quantitative Findings – Dawn Brewer
• Let’s hear from the community
• Qualitative Findings – Annie Koempel
• What Worked on the Ground – Callie Blair
• Covid19 Adjustments – Callie Blair
• Spreading the Walking Program and Needed Support – Valerie Horn

Learning Objectives

1. Understand the benefits associated with implementing a community farmers’ market and nutritious meal voucher, and walking program

2. Describe the challenges and considerations of carrying out a farmers’ market and nutritious meal voucher and walking program

3. Identify the benefits of engaging in an academic-community partnership.
The Team

Dawn Brewer
Primary Investigator
University of Kentucky
Department of Dietetics and Human Nutrition

Arnie Koempel
Program Manager
UK Superfund Research Center Community Engagement Core

Callie Blair
Community Program Manager
Tanglewood to Table Walking Program

Valerie Horn
Community Primary Investigator
Tanglewood to Table Walking Program

Partnership Development

- National Institutes of Environmental Health (NIEHS)-sponsored Appalachian Health and Well-being Forum
Walking Program

Background

2017 Tanglewood Trail Walking Program

SUPPORTED BY NIEHS P42ES007380, DEPARTMENT OF DIETETICS AND HUMAN NUTRITION, AND COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT
2017 Walking Program
Study Participants

- 121 adults, mean age of 50 years, 76% female and 95% white
- High-engagers (n=61) and low-engagers (n=60)
- High-engagers tended to be younger, 47 vs. 50 years old (p=0.01); more likely to be married (p=0.04); and to have fewer self-reported chronic health conditions, 1.4 vs. 2.0 (p=0.05); and less likely to be taking blood pressure or cholesterol medications
- With the exception of diastolic blood pressure there were no differences in baseline physical measurements between high-engagers and low-engagers, 83 mmHg high-engagers and 81 mmHg low-engagers (p< 0.05)
2017 Program Results

We observed significant and positive changes in health indicators from baseline to post-program, May – September 2017

• Within both the low and high-engager groups there was a:
  - Hemoglobin A1c
  - Total Cholesterol
  - LDL Cholesterol

• Between the low and high-engager groups:
  - HDL cholesterol among high-engagers

2018 Tanglewood Trail Walking Program

SUPPORTED BY CCTS CLINIC/ED GRANT PILOT PROGRAM (UL1TR001998), NIEHS P42ES007380, DEPARTMENT OF DIETETICS AND HUMAN NUTRITION, AND COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT
2018 Tanglewood to Table Study Design

- 75 comparison (Harlan), 82 intervention participants (Whitesburg)
- 32-week walking voucher/meal program
  - Required to walk ~1 mile each week to receive weekly voucher
  - June – Sept: $10 farmers market voucher for 16 weeks
  - Sept – Jan: $20 meal voucher for 16 weeks
- Nutrition education component
  - Facebook posts – 2 times per month
  - Recipe and phytonutrient cards – 2 times per month
  - Comparison group only – same information as intervention group, but mailed monthly nutrition education handouts and recipes
- Data collection
  - Questionnaires and physical measurements (May, Sept, and January)
  - Weekly Vouchers – which fruits and vegetables they consumed the week before and how they used their purchased produce
  - Weekly Steps – report their weekly steps as recorded by their pedometer

2018 Tanglewood to Table Retention

- At the end of the study we retained:
  - 19 comparison group participants (25% retention)
  - 48 intervention group participants (63% retention, 6 people dropped out)
- Retention rate during farmers’ market phase was 78%
- Potential reasons for poor retention during meal phase:
  - Change in schedule
  - Switch to Standard Time and Fall/Winter
  - First time piloting meal program component
- Potential reasons for poor retention among comparison group
### 2018 Tanglewood to Table Demographics

<table>
<thead>
<tr>
<th></th>
<th>Comparison Mean + SD or % (N=19)</th>
<th>Intervention Mean + SD or % (N=48)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>52.3 ± 11.4</td>
<td>49.8 ± 13.6</td>
<td>0.42</td>
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<tr>
<td>Sex (female)</td>
<td>68.4</td>
<td>70.8</td>
<td>0.85</td>
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<tr>
<td>Race (white)</td>
<td>94.4</td>
<td>97.9</td>
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<tr>
<td>Ethnicity (non-Hispanic)</td>
<td>87.5</td>
<td>91.5</td>
<td>0.22</td>
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<tr>
<td>Tobacco use (Yes or stopped within last year)</td>
<td>26.3</td>
<td>17.0</td>
<td></td>
</tr>
<tr>
<td>Education (years)</td>
<td>11.4 ± 3.3</td>
<td>13.6 ± 2.3</td>
<td>0.003</td>
</tr>
<tr>
<td>Do not have enough money to make ends meet</td>
<td>21.1%</td>
<td>25.0%</td>
<td>0.31</td>
</tr>
</tbody>
</table>

### 2018 Tanglewood to Table Baseline Heath Measurements

- We measured changes in lipid panel (finger-stick), BMI, waist circumference, blood pressure and dermal carotenoids
  - Dermal carotenoids is a non-invasive, objective measure to assess change in fruit and vegetable consumption
- At baseline intervention participants were significantly heavier than comparison participants
  - Intervention participants had a greater BMI and waist circumference
    - BMI: 34.8 ± 7.3 vs. 28.4 ± 5.9 (p=0.001)
    - Waist circumference: 43.4 ± 7.6 vs 38.5 ± 6.7 (p= 0.001)
- In general, at baseline, both groups were overweight or obese, hypertensive, and had low HDL cholesterol
Significant Changes in Health Outcomes

BMI
- Comparing baseline BMI to post-farmers’ market and baseline BMI to post-meal, the intervention group had a greater decrease in BMI than the comparison group among intervention.

WC
- Same pattern observed with waist circumference.
- Comparison group BMI and waist circumference did not significantly change from baseline to post-measurements.

Dermal carotenoids
- Post-farmers’ market - the intervention group’s dermal carotenoid levels were significantly greater than the comparison group.

Dermal carotenoids
- Post-meal program - there was no difference in carotenoid levels between groups following the meal program.
Methods: Qualitative

Goal to assess:
1. program use,
2. impact on food behavior,
3. impact on community,
4. areas for improvement

25 Walking Group Participants
Semi-structured, in-depth interviews Fall 2018

Results: Themes

- Health management strategy
- Valued freshness and quality of market food; pride in supporting farmers
- Social opportunity
- Increased variety of diet

This study was approved by the University of Kentucky Institutional Review Board. All participants names have been changed and all participants signed a photo release.
Health Management Strategy

“I’m diabetic…so you know I wanted the exercise and stuff like that. It helps the A1c.” – Erin Lambert

“My mom] needed to lower her cholesterol and uhm she been trying she didn’t want to take extra medicine so that was kind of an incentive for her [to join this program].” – Chloe Morris

Value of Fresh Food, Pride of Market

“You could tell a difference in the taste between what’s grown and what you get at the grocery store. And I hadn’t had any fresh strawberries like that somebody picked since I don’t know, ten years…you can tell a difference.” – Monica Jefferson

“I love supporting the farmers every bite I take.” – Don Lambert
“[This program] brings some people out of their shell. Course I broke my shell a long time ago, but you know some people the more interaction you get with other people the more that you are out...more...it makes you more outgoing.” – Don Lambert

“I’ve got extra coins and I see people in [the market] that uh maybe may not be able to get as much as I do and I always take and get extra ones and get that and give them extra coins. I don’t have to know ’em. I do that...I do cause I’m just that way.... We [share vegetables] too. Get some extra stuff and stop by some place knowing they don’t have it, I give it to them.” – Kyle Haiser

Social Opportunity

Increased Variety of Diet

Freedom to purchase new foods

Diverse preparation techniques

Sharing cooking tips helped form new friendships
Key to success

Callie Blair, Community Program Manager

- Former participant
- Acts as a liaison between research team and the participants
- Responsible for obtaining data reports from participants
- Spread information and updates to the community
Challenges

- Spreading information about registration time/date
- More people interested than open spots available

Retention

- People love free fruits and vegetables!
- Established personal relationships with each participant
- Attendance Policy explained clearly during the registration process
- Market mornings become a habit
Reporting Data

• Make participants feel that they are essential to the program
• Frequent reminders that the “research team” needs the data
• Use data sheets as a market “exit slip”
• Frequent online reminders

Covid-19 Adjustments

• Registration Process
• Masked Market
• Tickets vs Tokens
• Socially distanced community
• Online Data Reporting
Lasting Impacts on the Market and Community

• The food itself filled a need in the homes
• People were able to preserve fresh food to have in the winter
• Health and Wellness improvement in an area that needs it.
• Program brings new people to the market and brings a cash flow with it
• Leaves people excited for the next market season, frequent messages from new people about a desire to join the program

Let’s Walk and Talk....

• Two participants used Saturday morning walks as their “courtship”, married and still come consistently after two years.
• Even in the middle of health issues, participants want to be at the market. One had cancer surgery on Thursday and was at the market on Saturday morning because she did not want to miss out.
• Many people have made new and lasting friendships, including myself.
Let’s Walk and Talk

The personal connection with participants is crucial to making a program like this work.

Spreading the Walking Program and Needed Support
Thank you! Questions?

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