Keys to Healthy Child Care Homes
Healthy You, Healthy Home, Healthy Business

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Promoting Healthy Behaviors through Family Child Care Homes

- In the US, 32% of children are overweight or obese.

- Early childhood (0-5 yrs) is a critical period of development when many weight-related behaviors take root.

- About 60% of US children under the age of 6 are in some type of non-parental care each week for approximately 25 hours.

- Family child care homes (FCCHs) are an important source of care for America’s children.

- FCCHs serve approximately 1.5 million children in the US.
Two Research Groups – Working Together

- Our group (UNC) have been working in child care settings for many years
  - Developed the NAP SACC program
  - Have history working with state/local child care organizations

- Colleagues (Duke University) have experience with family-based interventions (Truls Ostbye) and child care (Sara Benjamin-Neelon)

- Working together, we developed KEYS
Formative Research

- Preliminary survey of family child care providers
  - Found 74% survey respondents were overweight/obese
  - Little had training in nutrition/physical activity

- Implemented small pilot (n=5 providers, 15 children)
  - 80% African American with some college education
  - 80% overweight/obese
  - Providers did not obtain much MVPA during work day (~13 min)
  - Low intake of FV
  - Children had high levels of sedentary behavior and 20 min of MVPA
  - Food quality (HEI score) was 64.3, below the recommended level of 80 out of possible 100 points

- Received input from our NAP SACC Child Care Advisory Committee
Primary Aims

- **Aim 1.** Improve physical activity behaviors of children while at the FCCH.
- **Aim 2.** Improve quality of dietary intake of children while at the FCCH.

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R01 1HL108390-01A1
2012-2017
Secondary Aims

- **Aim 3.** Reduce excess weight gain in children.
- **Aim 4.** Improve physical activity behaviors and diet quality of FCCH providers.
- **Aim 5.** Improve the nutrition and physical activity environment at the FCCH.
Study Design

- Cluster randomized trial
- Sample
  - 165 FCCH providers
  - 495 children
  - Randomized 1:1
- Two-arms
  - Arm 1 = Keys Intervention
  - Arm 2 = Healthy Business
- Measured baseline and follow-up
  - Children’s diet quality & physical activity (PA)
  - Child BMI
  - Provider diet, PA, and FCCH environmental characteristics
## Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measure</th>
<th>Child</th>
<th>Provider</th>
<th>Method of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Physical Activity (MVPA)</strong></td>
<td>Actigraph GT3X Accelerometer</td>
<td>X</td>
<td>X</td>
<td>Objective monitor</td>
</tr>
<tr>
<td></td>
<td>Physical Activity Self Report</td>
<td></td>
<td>X</td>
<td>Survey</td>
</tr>
<tr>
<td><strong>Diet Quality (Healthy Eating Index)</strong></td>
<td>Diet Observation for Childcare (DOCC)</td>
<td>X</td>
<td></td>
<td>Observation</td>
</tr>
<tr>
<td></td>
<td>Block Brief 2000 Food Frequency (FFQ)</td>
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<td>X</td>
<td>Survey</td>
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<tr>
<td><strong>Anthropometrics</strong></td>
<td>Shorr Stadiometer</td>
<td>X</td>
<td>X</td>
<td>In person measure taken by data collector</td>
</tr>
<tr>
<td></td>
<td>Seca Scale</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td><strong>Family Child Care</strong></td>
<td>Environment and Policy Assessment Observation (EPAO)-FCCH</td>
<td>X</td>
<td></td>
<td>Observation</td>
</tr>
<tr>
<td><strong>Home Environment</strong></td>
<td>EPAO Document Review</td>
<td>X</td>
<td></td>
<td>Document Review</td>
</tr>
<tr>
<td></td>
<td>Portion of EPAO-SR used to capture potentially unobserved provider behaviors</td>
<td>X</td>
<td></td>
<td>Survey</td>
</tr>
<tr>
<td></td>
<td>New items added to BAS to capture provider-parent communication about PA and nutrition</td>
<td>X</td>
<td></td>
<td>Survey</td>
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</tbody>
</table>
Measures: Continued

<table>
<thead>
<tr>
<th>Variable</th>
<th>Measure</th>
<th>Child</th>
<th>Provider</th>
<th>Method of Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td>Demographics Questionnaire</td>
<td>X</td>
<td>X</td>
<td>Parent and provider survey</td>
</tr>
<tr>
<td>Psychosocial constructs</td>
<td>Psychosocial Questionnaires</td>
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<td>X</td>
<td>Survey</td>
</tr>
<tr>
<td></td>
<td>- Intrinsic Motivation Inventory</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Self-efficacy for provider’s own PA &amp; nutrition</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Medical Outcomes Study Sleep Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- Perceived Stress Scale</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business Practices</td>
<td>Business Administration Scale (BAS)</td>
<td></td>
<td>X</td>
<td>Survey</td>
</tr>
</tbody>
</table>
Intervention – Conceptual Model

- **Provider**
  - Self-efficacy
  - Motivation
  - Behavioral capacity
  - Self-monitoring

- **Home Environment**
  - Physical activity opportunities
  - Foods provided
  - Encouragement and support for active play
  - Feeding behavior

- **Children**
  - Physical activity
  - Sedentary behaviors
  - Diet quality
  - BMI

- **Family Child Care Home (FCCH)**

**H³ Intervention**

- **Phase 1:** Healthy You
- **Phase 2:** Healthy Home
- **Phase 3:** Healthy Business
Intervention Development

- Used Intervention Mapping to developing content and delivery methods
  - Focus on Social Cognitive Theory
  - Created educational print materials
  - Developed workshop with skills building activities
  - Use of Motivational Interviewing
    - to build self-efficacy
    - to foster autonomy in setting/meeting goals
- Community Advisory Committee reviewed study materials
Intervention Group

Intervention Module Overview

**Take Part in Workshop (wk1)**
- Complete Self-Assessment
- Introduction/ice breaker/Rapport
- Provision of Tool Kit / Handouts
- Mixed-method presentation of content
- Create Goals, with aid of coach
- Introduction of behavioral Self-Monitoring

**Home Visit (wk3)**
- Rapport Building
- Feedback/Goal Revising

**Coaching Call (wk5)**
- Review progress on goals
- Review self-monitoring

**Coaching Call (wk8)**
- Review progress on goals
- Review self-monitoring
- Schedule next workshop

**Coaching Call (wk11)**
- Review progress on goals
- Review self-monitoring
- Discuss content of additional materials

**Module 1: Healthy You**
- **Physical Activity**
  - Guidelines for adult activity
  - Finding time for MVPA
  - Building strength
  - Moving more and sitting less
- **Diet Quality**
  - Guidelines for adult nutrition
  - Portion control
  - Empty calories
  - Beverages and snacks
- **Additional Content**
  - Managing stress
  - Adequate sleep
  - Social Support

**Module 2: Healthy Home Policies**
- **Physical Activity**
  - Guidelines for child activity
  - Reducing screen time
  - Opportunities for active play
  - Provider supportive behaviors (role modeling, prompts, & cues)
- **Diet Quality**
  - Guidelines for child nutrition
  - Introducing new foods
  - Avoiding sugar sweetened beverages
  - Providing healthy meals and snacks
  - Provider supportive behaviors (role modeling, prompts, & cues)
  - Feeding practices

**Module 3: Healthy Business**
- **Record Keeping**
  - Tracking income and expenses
  - Tax deductions
  - Time-space percentage
  - Saving with food programs
- **Contracts and Policies**
  - Developing effective contracts and policies
  - Discussing contracts and policies with parents
  - Enforcing and terminating contracts
- **Marketing**
  - Knowing your benefits
  - Marketing strategies
  - Assessing the effectiveness of your marketing strategies

**Self Assessments**
Self-assessments in all phases will be used to compare and contrast FCCH provider business practices relative to best practices recommendations.
Comparison Group

Control Module Overview

Take Part in Workshop (wk1)
- Complete Self-Assessment
- Introduction/Ice breaker/Rapport
- Provision of Tool Kit / Handouts
- Mixed-method presentation of content
- Create Goals, with aid of coach
- Introduction of behavioral Self-Monitoring

Coaching Call (wk3)
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- Review progress on goals
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Coaching Call (wk8)
- Review progress on goals
- Review self-monitoring
- Schedule next workshop

Coaching Call (wk11)
- Review progress on goals
- Review self-monitoring
- Discuss content of additional materials

Module 1: Record Keeping
- Tracking qualifying income
- Tracking qualifying expenses
- Knowing your allowable deductions
- When to use deductions
- Time-space percentage
- Saving money with food programs

Module 2: Contracts and Policies
- Creating thorough contracts
- Developing policies
- Discussing contracts and policies with parents
- Enforcing contracts and policies
- Terminating contracts with parents

Module 3: Marketing
- Knowing your benefits
- Marketing via currently enrolled families
- Marketing via previously enrolled families
- General Marketing strategies
- Assessing the effectiveness of your marketing strategies

Self Assessments
Self-assessments in all phases will be used to compare and contrast FCCH provider business practices relative to best practices recommendations.

Tom Copeland, Red Leaf Press
http://www.tomcopelandblog.com/
Intervention Materials
Intervention Materials: Healthy You

Feedback Report – Healthy You!

Feedback for: Participant Name
Date: June 25, 2013

Thank you for completing your self-assessment! In the next few pages, you will see how the responses you provided compare to recommendations and guidelines for good health.

How do you rate your personal feedback report?

- Green areas shaded in green suggest that you are meeting or very close to recommended levels. Good job!
- Purple areas are white indicate some room for improvement.
- Areas shaded in dark purple represent an opportunity for real change that can greatly affect your health.

If you have any questions, please speak with one of the HEYS coaches. It is their job to help you set goals and make changes!

Your HEYS coach is: _______________________

Feedback on your nutrition practices:

<table>
<thead>
<tr>
<th>What is being eaten or drinking</th>
<th>You reported this many servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meat or meat alternatives</td>
<td>5 servings</td>
</tr>
<tr>
<td>Sea/seafood</td>
<td>2</td>
</tr>
<tr>
<td>Cups of fruit</td>
<td>9 servings</td>
</tr>
<tr>
<td>Fruits (not including juice)</td>
<td>8 servings</td>
</tr>
<tr>
<td>Milk and milk alternatives</td>
<td>2</td>
</tr>
<tr>
<td>Whole grains</td>
<td>2 servings</td>
</tr>
<tr>
<td>Dairy and alternatives</td>
<td>2</td>
</tr>
<tr>
<td>Vegetables (not including potatoes)</td>
<td>2 servings</td>
</tr>
<tr>
<td>Dark vegetables</td>
<td>None</td>
</tr>
<tr>
<td>Sugar-sweetened beverages</td>
<td>3</td>
</tr>
</tbody>
</table>

The areas shaded in green suggest that you are meeting or very close to recommended levels. Good job!
The areas are white indicate some room for improvement.
Areas shaded in dark purple represent an opportunity for real change that can greatly affect your health.

Feedback on your physical activity, stress and sleep

<table>
<thead>
<tr>
<th>What to change to...</th>
<th>Per recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate and vigorous activity</td>
<td>30 minutes</td>
</tr>
<tr>
<td>Relaxation</td>
<td>3 days</td>
</tr>
<tr>
<td>Strength training</td>
<td>Less than 3 days or 1 day per week</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>What to change to...</th>
<th>Per recommend</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of unhealthy coping strategies</td>
<td>4</td>
</tr>
<tr>
<td>How much stress sleep you get right</td>
<td>8</td>
</tr>
<tr>
<td>Number of healthy coping strategies</td>
<td>3</td>
</tr>
</tbody>
</table>
Intervention Materials: Healthy Home

Goal Setting

Choosing a goal. Keep these things in mind as you choose a physical activity goal.

- What are your program's strengths? Where does your program have room for improvement? Look at the results of your self-assessment.
- Check the box next to the goal you selected for your family child care home (increase physical activity or decrease sedentary time).
- Then, work towards your overall goal by aiming to meet all of the best practices listed under it.

- Increase Physical Activity
  1. Provide children with 60 minutes or more of outdoor activity each day.
  2. Provide children with a variety of portable play equipment (8-7 types).
  3. Provide children with 45 minutes or more of adult-led physical activity.

- Decrease Sedentary Time
  1. Limit the length of time children are asked to remain seated on any occasion to less than 25 minutes (not including meal times).
  2. Limit children's screen time to less than 30 minutes per week.

Action Planning

Now it's time to plan for success! What will you need to do to succeed as you begin to work towards the best practices? Use the three steps on the next page to guide you through your journey!

Preparing

What challenges could you face with this goal? How could you be best prepared to handle them? For example:
- Think about where physical activity might fit into your daily schedule and lesson plans
- Talk with children and families about their ideas
- Gather activity plans and tips (they might be borrowed, purchased, or homemade)

To plan for my goal, I will:

<table>
<thead>
<tr>
<th>With help from:</th>
<th>By this date:</th>
<th>Complete?</th>
</tr>
</thead>
</table>

Doing and Tracking

What activities will you do to work towards best practices and reach your goal? For example:
- Take children outside more often or longer
- Replace television time with a new active circle time activity
- Share with parents the new fun activities the children have been doing
- Use the posters to track the progress I make toward my goal with the children

To reach my goal, I will:

<table>
<thead>
<tr>
<th>With help from:</th>
<th>By this date:</th>
<th>Complete?</th>
</tr>
</thead>
</table>

Celebrating

How and when would you like to celebrate your success? For example:
- Recognize my progress with a healthy celebration for families
- Share success with families by taking photos of children engaging in new activities

To celebrate my goal, I will:

<table>
<thead>
<tr>
<th>With help from:</th>
<th>By this date:</th>
<th>Complete?</th>
</tr>
</thead>
</table>
Healthy Business

Establish a Business Relationship with Parents

Contracts

Policies

Adequate Records
- Receipt
- Cancelled check
- Credit/debit card statement
- Written record created by you
- Photograph
Coaches: Keys to Success

- Motivational interviewing training
- Develop a personal relationship with each provider
- Customized support
- Tangible resources
- Be flexible and understanding
Project Timeline

- Recruitment occurred in 5 waves over multiple counties
- Targeted counties with high child obesity rates
- Finalize recruitment in June
- Two waves have completed the intervention; will finish all waves by May of 2016
Recruitment Efforts

Recruitment Challenges
- Busy providers
- Demands of research project (measures)
- Parent recruitment
- Trust

Strategies to Overcome
- Personal contact
- Working with local CC staff
- Good materials/poster

Study website

http://keystohealthyhomes.org/
## Study Participants (to date)

### Participant Characteristics from Waves 1-4

<table>
<thead>
<tr>
<th></th>
<th>Providers (n=125)</th>
<th>Children (n=370)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td>100% female</td>
<td>52% female</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>49.7 years</td>
<td>35.7 months</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td>79% Black</td>
<td>66% Black</td>
</tr>
<tr>
<td><strong>BMI status</strong></td>
<td>89% overweight/obese</td>
<td>34% overweight/obese</td>
</tr>
<tr>
<td><strong>Center Quality Rating</strong></td>
<td>65% 4-5 stars</td>
<td></td>
</tr>
</tbody>
</table>

* NC’s Quality Rating System
Family Child Care Homes

- An important connection to many children and families
- FCCH providers need support for their own health practices
- Families they serve can benefit from health promotion
- Many providers are interested but reaching them will require additional efforts
- First step: an evidence-based program such as KEYS
  - We are working to create that evidence
Keys Team

- **Investigators:**
  - Dianne Ward
  - Truls Ostbye
  - Derek Hales
  - Sara Benjamin-Neelon
  - Shrikant Bangdiwala
  - Ziya Gizlice (data)

- **Staff:**
  - Amber Vaughn
  - Regan Burney
  - Courtney Mann
  - Meghan Mayhew
  - Joy Long
  - Sakinah Omar

- All the family child care participants, their children, and families
- Local child care partnerships
- Our community advisory committee