ENHANCING PHYSICAL ACTIVITY AND NUTRITION IN EARLY CARE AND EDUCATION ENVIRONMENTS IN OKLAHOMA

Susan B. Sisson, PhD, RDN, CHES

Early Childhood Workgroup July 15, 2019
OVERVIEW OF TODAY’S TALK

• Happy Healthy Homes FCCH intervention
• Wellness Around Traditional Community Health intervention
• Discussion Questions
OVERVIEW OF TODAY’S TALK

• Happy Healthy Homes FCCH intervention
• Wellness Around Traditional Community Health intervention
• Discussion Questions
Happy Healthy Homes
OUHSC College of Allied Health & College of Public Health
OSU College of Human Sciences
Oklahoma Cooperative Extension Service
Oklahoma Department of Human Services
State Department of Education
ACKNOWLEDGMENTS

• Inspiring Mentors
• Excellent Colleagues
• Fantastic Graduate Students
• No Disclosures
8.4% of American preschoolers are obese

14.3% of Oklahoma preschoolers are obese

(Ogden et al. 2014; Weedn et al. 2014)
Ecological Systems Theory

Structure of the Environment

Activities & Relations between the child and the immediate environment

Connections between the microsystems (home/school/neighborhood/child care)

The values, customs, laws and resources that affect the provided support at inner levels

Social settings that don’t contain the child but affect their experiences in immediate settings
# THEORETICAL FOUNDATION

<table>
<thead>
<tr>
<th>Theoretical Constructs</th>
<th>Intervention Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Cognitive Theory</td>
<td></td>
</tr>
<tr>
<td><strong>Behavioral capability</strong></td>
<td>Educational lessons, hands-on activities, cooking class, making household cleaners</td>
</tr>
<tr>
<td><strong>Self-control</strong></td>
<td>Goal setting, problem solving, goal progress evaluation</td>
</tr>
<tr>
<td><strong>Expectancies (value of outcome)</strong></td>
<td>Educational lessons integrated with qualitative teacher self-perspectives</td>
</tr>
<tr>
<td><strong>Observational learning</strong></td>
<td>Hands-on activities, cooking class, making household cleaners, community partner involvement</td>
</tr>
<tr>
<td><strong>Self Determination Theory</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Proactive</strong></td>
<td>Elective modules, hands-on activities</td>
</tr>
<tr>
<td><strong>Personal importance</strong></td>
<td>Educational lessons integrated with qualitative teacher self-perspectives</td>
</tr>
<tr>
<td><strong>Interest</strong></td>
<td>Hands-on activities</td>
</tr>
<tr>
<td><strong>Adult Learning Principles</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Active Learning</strong></td>
<td>Elective modules, hands-on activities</td>
</tr>
<tr>
<td><strong>Preconceptions</strong></td>
<td>Reflective listening</td>
</tr>
<tr>
<td><strong>Understanding</strong></td>
<td>Educational lessons include “why”</td>
</tr>
<tr>
<td><strong>Self-assessment</strong></td>
<td>Goal setting, progress check-ins, and troubleshooting</td>
</tr>
<tr>
<td><strong>Community-centered</strong></td>
<td>Small group cooking and children’s environmental health classes</td>
</tr>
<tr>
<td><strong>Social Support</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Instrumental support</strong></td>
<td>Hands-on activities, cooking class, toolkit materials</td>
</tr>
<tr>
<td><strong>Informational support</strong></td>
<td>Educational lessons, goal setting, troubleshooting</td>
</tr>
<tr>
<td><strong>Appraisal support</strong></td>
<td>Discussion and troubleshooting of SMART goal progress and challenges experienced</td>
</tr>
<tr>
<td><strong>Peer support</strong></td>
<td>Small group cooking and children’s environmental health classes with other providers</td>
</tr>
</tbody>
</table>
INTERVENTION OVERVIEW

• 2 interventions
  • Nutrition and Environmental health (Eco)
• Family Child Care Home providers randomly assigned
• About 3 months each
NUTRITION MODULES

Core
• SMART Goals
• Why Meet Best Practices
• Portion Distortion
• Staff Behaviors: Leading the Way for Healthy Eating

Elective
• A Fluid Situation
• Begin with Breakfast
• Cooking Across the Rainbow
• Getting Kids in the Kitchen
• Gardening
• Menu and Meal Planning
• Picky Eaters, Food Allergies, and Aversions
• Understanding Nutrition Facts and Reading a Label
Phase 1

- Oklahoma City metro (ish)
- 3 waves/cohorts
  - Wave 1 completed 3 and 12 month follow-up
  - Wave 2 completed 3 and 12 month follow-up
  - Wave 3 completed 3 month follow-up, 12 month starts in September

Phase 2

- Rural outreach
  - 6 counties
  - 10 FCCH each
RURAL OUTREACH

<table>
<thead>
<tr>
<th>County</th>
<th>% population of county that is small town and rural</th>
<th>March 2018 # of FCCH</th>
<th>2016: % of families (with Children under 5 years old) income in past 12 months below the poverty level in county</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cherokee</td>
<td>100</td>
<td>19</td>
<td>23.6</td>
</tr>
<tr>
<td>Custer</td>
<td>100</td>
<td>36</td>
<td>22.4</td>
</tr>
<tr>
<td>Kay</td>
<td>100</td>
<td>37</td>
<td>24.7</td>
</tr>
<tr>
<td>Lincoln</td>
<td>77.3</td>
<td>20</td>
<td>17.2</td>
</tr>
<tr>
<td>Pittsburg</td>
<td>100</td>
<td>20</td>
<td>22.3</td>
</tr>
<tr>
<td>Woods</td>
<td>100</td>
<td>19</td>
<td>28.3</td>
</tr>
</tbody>
</table>
### OUTCOME MEASURES

<table>
<thead>
<tr>
<th>Primary Outcome Measures</th>
<th>Secondary Outcome Measures</th>
<th>Fidelity Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Self-reported nutrition practices</td>
<td>• Nutrition self-efficacy</td>
<td>• Proportion of participants who complete intervention</td>
</tr>
<tr>
<td>• Observed nutrition practices</td>
<td>• Nutrition knowledge</td>
<td>• Interventionist adherence to intervention curriculum</td>
</tr>
<tr>
<td>• Observed dietary intake of children</td>
<td>• CACFP knowledge</td>
<td>• Interventionist competence in delivering curriculum</td>
</tr>
<tr>
<td>• Observed CACFP Compliance</td>
<td>• Staff nutrition behaviors</td>
<td>• Participant satisfaction and overall intervention experience</td>
</tr>
<tr>
<td></td>
<td>• Menu CACFP compliance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Meal service style</td>
<td></td>
</tr>
</tbody>
</table>
RESULTS

- 100% women, 44.2 ± 14.2 years
- Supervise 9.7 ± 4.2 children
- In business 10.8 ± 9.6 years
- 47% (n=23) have NO additional staff
- Spend 2.8 ± 6.2 hours/week prepping meals
- Baking (98%) and slow cooker (70%) were most common food prep methods
- 91.8% believe the Child and Adult Care Food Program (CACFP) enhances dietary quality
OVERVIEW OF TODAY’S TALK

• Happy Healthy Homes FCCH intervention
• Wellness Around Traditional Community Health intervention
• Discussion Questions
Acknowledgements
21% of American preschoolers are overweight

31% of Oklahoma preschoolers are overweight

Native American children are 19% more likely to be obese

38% of Native American preschoolers in OK are overweight

(Ogden et al. 2014; Weedn et al. 2011; Weedn et al. 2014; Sisson et al. 2017)

Childhood Obesity
medical complications

PSYCHOSOCIAL
Poor self esteem
Depression
Quality of life

NEUROLOGICAL
Pseudotumor cerebri
Risk for stroke

CARDIOVASCULAR
Dyslipidemia
Hypertension
Left ventricular hypertrophy
Chronic inflammation
Endothelial dysfunction
Risk of coronary disease

GASTROINTESTINAL
Pancreatitis
Steatohepatitis
Liver fibrosis
Gallstones
Risk for cirrhosis
Risk for colon cancer

ENDOCRINE
Type 2 diabetes
Precocious puberty
Polycystic ovary syndrome (girls)
Hypogonadism (boys)

RENAL
Glomerulosclerosis
Proteinsuria

MUSCULOSKELETAL
Forearm fracture
Blount’s disease
Slipped capital femoral epiphysis
Flat foot
Risk for degenerative joint disease

19% more likely to be obese
How We Organize Our Initiative: A Model

Figure 1. Elements of the Household Community Integrated Management of Childhood Illness Framework

Element 1: Improving partnerships between health facilities and the community they serve

Element 2: Increasing appropriate and accessible health care and information from providers

Element 3: Integrating promotion of key family practices critical for child health and nutrition

Optimizing a multi-sectoral platform to support sustainable child health and nutrition

(Winch et al. 2002)
# Study Phases

<table>
<thead>
<tr>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015</td>
<td>2016-2017</td>
<td>2018-now</td>
</tr>
<tr>
<td>60 Stakeholder interviews</td>
<td>Stakeholder meetings and</td>
<td>Pilot testing intervention</td>
</tr>
<tr>
<td></td>
<td>intervention development</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 rounds of community</td>
<td>Thus far 2 communities</td>
</tr>
<tr>
<td></td>
<td>meetings across Oklahoma</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>More planned</td>
</tr>
</tbody>
</table>
60 Formative Interviews

**Teachers:**
- Value role as caregiver, not as health educator or role model
- Struggle with personal health
- Limited interaction with health care but welcome that opportunity
- Parents have barriers for health

**Health Care Providers:**
- Importance of working with family
- Felt ECE was logical place for health education
- Notable disconnect in understanding this environment
- Parents have barriers for health

**Parents:**
- Acknowledged their importance is creating health for family
- Time and community barriers
- Children already sufficiently active
- Value personal connection
- Distrust for clinic; trust for ECE

(Kracht et al. 2018; Kracht et al. 2018; Kracht et al. in review)
<table>
<thead>
<tr>
<th>Outcome Measures</th>
<th>Early Care and Education Environment</th>
<th>Early Care and Education Practices</th>
<th>Health Care Clinic Practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu nutrient analysis</td>
<td>Self-reported practices</td>
<td>Weight-related laboratory billing</td>
<td></td>
</tr>
<tr>
<td>Observed children’s dietary intake</td>
<td>Observed obesogenic practices</td>
<td>Documented weight status</td>
<td></td>
</tr>
<tr>
<td>Physical activity, nutrition, screen time policies</td>
<td>Self-reported self-efficacy for healthy practices</td>
<td>Documented behavioral counseling</td>
<td></td>
</tr>
<tr>
<td>Garden Implementation</td>
<td>Observed opportunity for children’s physical activity</td>
<td>Weight-related follow-up scheduling</td>
<td></td>
</tr>
</tbody>
</table>
Key Components: Early Care Program

Environmental evaluation and plan for improvement
Menu modification
Classroom curriculum
Responsive feeding training
Family WATCH nights
Garden
Key Components: Parents

Menus to complement early care program
Family WATCHwork
Family WATCH night
Body mass index charts and information
Child milestone information
Key Components: Health Clinic

Healthy weight sensitivity and referral training
Implementation of same curriculum with handouts and video loop in waiting areas
Lifestyle behavior training and information to give and educate families
Billing and reimbursing for nutrition services
Interaction and involvement with the early care programs
HEALTHCARE PROVIDERS

LIFESTYLE TRAINING
Organizational training materials provided to share among families and serve as an entrance to discussion for healthier lifestyles to grow strong children.

SENSITIVITY TRAINING
Strategies to bring up and discuss sensitive subjects with families in a more comfortable and productive way.

PARENTS + GRANDPARENTS

mhHEALTH
Text reminders with healthy lifestyle prompts.

QUESTION GUIDE
Healthcare visit question guide for parents, designed to empower them when asking their child’s doctor, reminder of both their questions and their right to ask them.

BMI
Charts and information for parents. Meaning, implications and brief statistics of each BMI category discussed, accompanied with positive messages, means of altering BMI and limitations of BMI as a health indicator.

EARLY CHILDHOOD EDUCATION

NAPSA
Designed to enhance nutrition, PA and education programs in early care. Specifically, nutritional quality of food, amount and quality of PA, provider-child interactions around food and PA, educational opportunities and positive policies improved.

MEAL MODIFICATION
The childcare menu needed to reduce processed foods and increase the amount and variety of fresh fruits and vegetables.

KIDS IN THE KITCHEN
Opportunity for the children to help prepare simple, safe snacks and learn about food and food groups.

SNACK CENTERS
Learning opportunity for the children to help prepare snacks, log their intake and perceptions of the food they learned about.

Each station provides one flour or vegetable teaching session - a short related story, interesting facts and how the food grows, including an activity or craft project inspired by the food.

PHYSICAL ACTIVITY STATIONS
Learning opportunity for the children to find out and activity benefits their body, including health benefits, flexibility, balance, muscle strength or endurance improvement. Worksheets with the body parts/images used for the exercise, e.g., jump rope, and for progress tracking provided, including the reminder that an ability to conquer any exercise may require practice over time.

TEACHER TRAINING
Training on communication skills to enhance parent teacher connections.

Training on physical activity/PA, nutrition and PA shift to a healthier lifestyle influence the children to engage in healthier behaviors.

CHILD CURRICULUM on PA/diet
Includes Organizational Cosmos lessons and small space PA, to engage the children in a regular basis throughout the week.

PARENTS + GRANDPARENTS

FAMILY “HOMWORK”
Interactive activities and project ideas would be sent home with the children, to support their ICE curriculum, featuring fun inspired by programs such as Organizational Cosmos, Eat, Play, Grow and learn to preschool ideas like Harvest for Healthy Kids.

HEALTHY EATING CASE
A list of relatively nutritious foods that can be obtained at the gas station, convenience store or travel plaza. Created with busy working parents in mind, including include recipes for homemade versions of store-bought items, cost and prices, and feature ready-to-available ingredients and recipes with seasonal vegetables and fresh herbs.

PARENTS + GRANDPARENTS

EARLY CHILDHOOD EDUCATION

FAMILY BREAKFAST at Childcare
Learning opportunities for parents about the ICE their child spends so much time in, followed by a short discussion and/or activity. For example, children could be excited to play while parents are encouraged to bring up any questions or concerns about the ICE and have a group discussion, possibly with a community health worker also present. Alternatively, children and parents may also do fun post-breakfast physical activity to help lower post-meal blood sugar levels.

TASTE HOME MEALS
Based on the idea that buying in bulk and cooking from scratch can reduce costs while maintaining quality, the child care could have a home meal ready when the children are picked up. These meals would complement the school menu rather than replace lunch offerings.

RECIPES
Sample dinner menus and meal plans for parents to complement ICE menu and ensure that the children are offered the recommended daily and weekly servings of the various food types.

GARDENING
Learning opportunity about where the food comes from and to foster mindful eating. While gardening with the children, grandparents share words of wisdom regarding growing your own food and help gain a deeper sense of connection to the land and food.

FOOD DEMONSTRATIONS
Tasting and meal preparation demonstrations to inspire parents to cook delicious nutritious meals, including special tips on cooking methods and time for parents to ask questions about cooking and nutrition.
Classroom Curriculum Process Evaluation

Overall Weekly Completion

Week 1: 71%
Week 2: 63%
Week 3: 80%
Week 4: 71%
Week 5: 86%
Week 6: 82%
Week 7: 76%
Week 8: 89%
Week 9: 57%
Week 10: 75%
Week 11: 86%
Week 12: 71%
Week 13: 71%
Classroom Curriculum Process Evaluation

Average Completion throughout 13 weeks

- Q2: Story and Lesson: 91%
- Q3: Activity Book: 35%
- Q4: Video Completion: 74%
- Q5: Wiscercise PA: 91%
- Q6: Send Home: 92%
- Q9: OrganWise Doll Use: 83%
- Q10: Additional Activity: 61%
Process Eval Recommendations

- Drop or Modify the Activity Book, it has the lowest reported completion throughout the 13 weeks.

- Not all of the instructors are using the same lesson plan on the same week. Some weeks vary greatly while other weeks are consistent.

- Q3: Activity Book and Q4: Video Completion have most comments concerning instructors pointing out they could not find or were missing content for the activity.

- On average activities take from 13 to 17 minutes to complete.

- Lesson Plan: Gardening Kit-Concentrating on Fruits & Veggies was the highest reported comment concerning problems with Comprehension.
Overview of Today’s Talk

Happy Healthy Homes FCCH intervention
Wellness Around Traditional Community Health intervention

Discussion Questions
Discussion Questions

• Opportunities for strengthening or improving the Extension Educator model in Happy Healthy Homes

• Opportunities for strengthening cultural relevancy or adaptations for WATCH as we expand communities

• Other ideas for integration and expansion of either HAPPY and WATCH

• Opportunity for involving other key personnel and professions
Questions???

susan-sisson@ouhsc.edu
alicia-salvatore@ouhsc.edu