Development of an Intervention to Enhance Children’s Nutrient Quality in Family Child Care Homes

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Introduction
Early childhood is a critical developmental period. [1] Nationally, 66% of young children are in non-parental care for an average of 32 hours/week. [2] Nationally, there are over 1 million children in Family Child Care Homes (FCCH) (26% of all early care attendance).[3] Providers serving low-income children can participate in the Child and Adult Care Food Program (CACFP), which reimburses qualifying food costs.[4] CACFP participation is associated with increased access to nutritious foods,[5, 6] but however, there are variations in the fidelity with which it is implemented. These variations may compromise overall nutritional quality for some children,[7, 8] and leave substantial room for improvement in implementation.

Purpose
To describe development of Happy Healthy Homes, an interdisciplinary, community-based study in Oklahoma to improve FCCH quality of foods served in FCCH and promote compliance with CACFP best-practices.

Theoretical Foundation
- Evidence-based obesity prevention interventions [9]
- Public Health Ecological Model [10, 11, 12, 13] (Figure 1)
- Social Cognitive Theory [14, 15]
- Social Determination Theory [16]
- Adult Learning Practices [17]
- Social Support [18]
- Table 1 indicates how model constructs are operationalized

Methods
- Randomized controlled trial with attention comparison
- Recruit 52 FCCH providers who participate in the CACFP within 60 miles of Oklahoma City over 3 waves (18 planned per wave)
- Random assignment to nutrition or environmental health technical assistance intervention
- 90 minute individual sessions including 4 core modules and 3 selected electives (Table 2)
- Complete a 3 month intervention including 2 individual sessions with a trainer, a mid-point phone call to discuss goals and trouble shoot, and a 3-hour small group class (Figure 2)

Table 1. Model constructs and parallel intervention activities

<table>
<thead>
<tr>
<th>Intervention Activities</th>
<th>Social Cognitive Theory</th>
<th>Behavioral capability</th>
<th>Self-control</th>
<th>Expectancies (value of outcome)</th>
<th>Observational learning</th>
<th>Self Determination Theory</th>
<th>Adult Learning Principles</th>
<th>Social Support</th>
<th>Informational support</th>
<th>Appraisal support</th>
<th>Peer support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educational lessons, hands-on activities, cooking class, making household cleaners</td>
<td>Educational lessons integrated with qualitative teacher self-perspectives</td>
<td>Goal setting, problem solving, goal progress evaluation</td>
<td>Educational lessons integrated with qualitative teacher self-perspectives</td>
<td>Hands-on activities, cooking class, making household cleaners, community partner involvement</td>
<td>Elective modules, hands-on activities</td>
<td>Elective modules, hands-on activities</td>
<td>Active Learning</td>
<td>Elective modules, hands-on activities</td>
<td>Educational lessons, goal setting, trouble shooting</td>
<td>Goal progress, troubleshooting</td>
<td>Small group cooking and environmental health class</td>
</tr>
</tbody>
</table>

Table 2. Core Modules of Nutrition Technical Assistance

<table>
<thead>
<tr>
<th>Core Modules</th>
<th>Elective Modules</th>
<th>Small Group Cooking Class</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. SMART goals</td>
<td>1. Understanding Nutrition facts</td>
<td>1. Making family style work for you</td>
</tr>
<tr>
<td>4. Staff behaviors: Leading the way</td>
<td>4. Cooking across the rainbow</td>
<td>4. Shopping local</td>
</tr>
</tbody>
</table>

Implications for Practice
Implementation of this intervention will enhance the quality of nutrition provided to young children in FCCH and can be disseminated and implemented in other rural environments and states.

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Figure 1. Constructs and Operationalization of the Public Health Ecological Model

Figure 2. Protocol time-course for sample participant