The Shaping Healthy Choices Program: A Multi-Component, School-Based Approach to Improve Children’s Nutrition and Health Behaviors While Supporting Regional Agriculture

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ABSTRACT

The Shaping Healthy Choices Program (SHCP) involves the integration of five components: nutrition education; family and community partnerships; regional agriculture; foods available on school site; and school wellness policies. This study uses a pre-post-test design to test the hypothesis that schools utilizing the SHCP will improve nutrition knowledge, science processing skills, and health-related behaviors. Schools meeting inclusion criteria were randomly assigned to control (C) or intervention (I) groups. All 4th grade students were included in the data analysis. The BMI for C and I was 18.7 and 20.7, respectively. Mean reported MyPlate vegetable servings for C and I were 72 and 57, respectively. Mean student vegetable preference scores (n=5) for C and I were 3.5 and 3.6, respectively. This model is useful for data collection and evaluation of multi-component school-based nutrition interventions. Supported by UCANR and USDA 2011-38420-20082.

INCLUSIONARY CRITERIA

• SHCP school requirements:
  - Within two California counties representative of the diverse state population
  - 30-49% student eligibility for the free and reduced-price meal program
  - At least 4 fourth-grade classrooms
  - Teachers willing to dedicate one hour of classroom time for nutrition lessons at least twice per month
  - Not currently utilizing a salad bar
  - Not currently utilizing a garden for academic instruction
  - Two schools from each county were selected

STUDY DESIGN

Sample of Schools Meeting Inclusionary Criteria

Randomization

Control Group (One school per district)  Intervention Group (One school per district)

Baseline Data Collection (n=496)

Follow-Up Data Collection

SHCP INTERVENTION

Classroom:
  - 15 hours of classroom and garden education
  - Cooking demonstrations
  - Monthly parent newsletters
  - Nutrition Services (Cafeteria)
  - Daily salad bar
  - Regionally procured produce

Professional Development:
  - University of California Cooperative Extension Educator
  - Teachers
  - School nutrition personnel
  - Wellness Policy Development

School Characteristics:

Northern California Central Valley California

<table>
<thead>
<tr>
<th>Component</th>
<th>Control School</th>
<th>Intervention School</th>
<th>Control School</th>
<th>Intervention School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Students</td>
<td>133</td>
<td>177</td>
<td>105</td>
<td>75</td>
</tr>
<tr>
<td>Number of 4th Grade Students</td>
<td>136</td>
<td>188</td>
<td>122</td>
<td>125</td>
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<tr>
<td>Ethnic Diversity Index</td>
<td>63</td>
<td>75</td>
<td>54</td>
<td>57</td>
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<tr>
<td>% Eligible for Free or Reduced-price Lunch</td>
<td>29.7</td>
<td>35.3</td>
<td>41.4</td>
<td>34.7</td>
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<tr>
<td>API Scores</td>
<td>895</td>
<td>855</td>
<td>860</td>
<td>841</td>
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</table>

Northern California Central Valley California

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<th>Intervention School</th>
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</thead>
<tbody>
<tr>
<td>Average BMI (For age)</td>
<td>18.7</td>
<td>20.6*</td>
<td>18.8</td>
<td>17.9</td>
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<tr>
<td>Average BMI Percentile</td>
<td>64.8</td>
<td>77.4*</td>
<td>65.5</td>
<td>59.8</td>
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</tbody>
</table>

ANTHROPOMETRICS

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<tr>
<th>Component</th>
<th>Northern California</th>
<th>Central Valley California</th>
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<tbody>
<tr>
<td>Normal Weight</td>
<td>68.0</td>
<td>44.4</td>
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<tr>
<td>BMI Overweight</td>
<td>25.6</td>
<td>26.4</td>
</tr>
<tr>
<td>BMI Obesity</td>
<td>18.5</td>
<td>31.0</td>
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</tbody>
</table>

SUMMARY

• Baseline data indicate that there is a need for interventions that encourage fruit and vegetable consumption in children.
• Additional exposure to a variety of vegetables is needed to improve children’s identification of vegetables.
• Results demonstrate that children from a variety of ethnicities and all socioeconomic statuses should be targeted for obesity prevention efforts.
• The Shaping Healthy Choices Program is a multi-component intervention that is feasible for implementation in schools and this model is useful for data collection.

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