Nutrition and Physical Activity Education Education among SNAP-Ed Eligible Middle School Students Reveals Disconnect between Knowledge and Behavior

THE UNIVERSITY OF ARIZONA NUTRITION NETWORK

THERESA LEGROS, VANESSA A. FARRELL, VERN HARTZ, LAUREL JACOBS, TRACI ARMSTRONG FLORIAN, SCOTTIE MISNER
OUTLINE

- The University of Arizona Nutrition Network
- Healthy Eating Active Living (HEAL) Behavior Change
- Evaluation of School-based Youth Interventions
- Findings and Implications
- Questions
THE UNIVERSITY OF ARIZONA NUTRITION NETWORK

The University of Arizona, College of Agriculture and Life Sciences, Cooperative Extension, Department of Nutritional Sciences
Problem: High rates of overweight & obesity among SNAP participants & eligibles in Arizona

**INPUTS**
- Human Capital
  - Experts
  - Faculty & Staff
  - Volunteers
- Funding
- Partnerships
  - Across Multiple Sectors

**ACTIVITIES**
- Direct Education
- Policy, Systems, Environment Approaches (PSEs)

**OUTCOMES**
- Increase HEAL knowledge, attitudes, skills & behaviors
- Improve HEAL PSEs in places frequented by SNAP participants & eligibles

**IMPACT**
- Reduce overweight & obesity rates of AZ SNAP participants & eligibles
HEALTHY EATING ACTIVE LIVING (HEAL) BEHAVIOR CHANGE

“Human behavior flows from three main sources: desire, emotion, and knowledge.”

- Plato
CHANGING HEAL BEHAVIORS

INPUTS

attitudes
skills
self-efficacy
social context
default options
built environment
systems
policies
social norms
values
knowledge

OUTPUTS

behavior change

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EVALUATION OF SCHOOL-BASED YOUTH INTERVENTIONS
STUDY DESIGN

PRE-TEST (Fall)

UANN School-Based Interventions

POST-TEST (Spring)

Change in Knowledge & Behaviors

Randomized Selection
- 25% of participating 6th - 8th grade classes

Classroom-Level Analysis
- 38 classrooms
- Mean fall class size: 25
- Paired T-tests

Participating Counties
- Cochise, Maricopa, Pima, Pinal, Santa Cruz
<table>
<thead>
<tr>
<th>KNOWLEDGE</th>
<th>BEHAVIORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity Guidelines for Americans</td>
<td>7 Items for Physical Activity</td>
</tr>
<tr>
<td>USDA Recommended Milk Type</td>
<td>Milks Frequency &amp; Type Most Consumed</td>
</tr>
<tr>
<td>USDA Vegetable Guidelines</td>
<td>Vegetable Consumption</td>
</tr>
<tr>
<td>USDA Fruit Guidelines</td>
<td>Fruit Consumption</td>
</tr>
<tr>
<td>USDA Whole Grain Guidelines</td>
<td>Whole &amp; Refined Grain Consumption</td>
</tr>
<tr>
<td></td>
<td>Water &amp; Sugary Beverage Consumption</td>
</tr>
</tbody>
</table>


October 30, 2013
Dear Ms. Jenna,
Thank you for coming to Rivera. Thank you for bringing the poster of the plate. We liked when you told us about food. We will eat fruit, vegetables, grains, dairy, and protein everyday.
Love,
Ms. Maiers Class
Changes in Student Knowledge from Fall to Spring, 2013-14 (N=38)

<table>
<thead>
<tr>
<th>Category</th>
<th>Relative % Change in Correct Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical Activity</td>
<td>12.0**</td>
</tr>
<tr>
<td>Milk Type</td>
<td>-3.5</td>
</tr>
<tr>
<td>Vegetables</td>
<td>11.0*</td>
</tr>
<tr>
<td>Fruits</td>
<td>4.3</td>
</tr>
<tr>
<td>Whole Grains</td>
<td>5.9</td>
</tr>
</tbody>
</table>

* National recommendation + amounts exceeding recommendation (except for milk type, which has one correct answer)

* p < 0.05, ** p < 0.01
Changes in Student Dietary Behaviors from Fall to Spring, 2013-14 (N=38)

Relative % Change in Consumption

- Milk Frequency: 0.1
- % Fat in Milk: -2.8
- Sugary Beverages: 4.1
- Water: -2.5
- Total Beverages: -5.5*
- Vegetables: 7.4
- Fruits: 3.7
- Whole Grains: 9.5*
- Refined Grains: 1.2

* p < 0.05
Changes in Student Physical Activity Behaviors from Fall to Spring, 2013-14 (N=38)

Relative % Change in Activity Levels

- Min Sitting (non-school): 4.9%
- Min in PE: -12.4%
- Min After School Activity: -0.3%
- % Active Travel to School: 9.4%
- % Active Travel Home: 20.0% *
- % Active AM Break: -9.8%
- % Active in Lunch Break: -7.3%

*p < 0.05
SUMMARY OF FINDINGS

• Knowledge gains for recommended PA and vegetable consumption
  • Also found PA increase among 4th-5th graders in 2012-13

• Positive behavior change for consumption of whole grains
  • Also found among 4th-5th graders in 2012-13
IMPLICATIONS FOR CHANGING HEALTH BEHAVIORS

KNOWLEDGE GAIN
Increased knowledge of physical activity guidelines

BEHAVIOR CHANGE
Increase in whole grain consumption
IMPLICATIONS FOR CHANGING HEAL BEHAVIORS

MULTI-LEVEL CHANGES

• Other knowledge, skills, self-efficacy, attitudes
• Default options
• Physical environment
• Policies and systems
• Social norms and values

BEHAVIOR CHANGE

Increase in whole grain consumption
CHANGING HEAL BEHAVIORS

INPUTS
- Public Policy
- Community (cultural values, norms)
- Schools (environment, ethos)
- Interpersonal (social network)
- Individual (knowledge, attitude, skills)

OUTPUTS
- Behavior change

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QUESTIONS

“Behavior is what a man does, not what he thinks, feels, or believes.”
- Emily Dickinson

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