151. Cooking Skills: The Missing Ingredient in Healthy Eating?

Disclosures

Leslie Cunningham-Sabo
Leslie.Cunningham-Sabo@Colostate.Edu

- Board Member/Advisory Panel
- Board of Editors, Journal of Nutrition Education and Behavior
- Consultant
- N/A
- Employee
- Colorado State University
- Research Support
  - USDA NIFA Childhood Obesity Prevention Challenge Area, National Research Initiative Grant 2007-050052 and Agriculture and Food Research Initiative 2011-67001-30117
  - Speaker’s Bureau
    - N/A
- Stock/Shareholder
  - N/A

Presentation Outline

- Association of home cooking with children’s diet, health outcomes
- Impact of children’s cooking interventions
- Examples from my research
- Considerations – parents, setting, etc.
- Resources
- How can you become (more) involved in children learning/enjoying cooking

Caveat – not based on a formal review

Audience Response Question

How often do you use culinary education (direct hands-on cooking) in your practice with children?

A. Frequently
B. Occasionally
C. Rarely
D. Never
E. Don’t have children as clients/participants

Children’s Involvement in Home Cooking

- **CANADA**
  - 30% Alberta 5th graders (n=3,398) > 1x daily; 32% 1-3x week (Chu et al 2013)
  - 1/3rd children (n=10,098) help with meal prep (Slater & Mudryj, 2016)

- **NEW ZEALAND**
  - 54% 2ndary students (n=8,500) > 1-2x mo; gender, ethnic & SES dif (Utter et al, 2016)

- **JAPAN**
  - 69%B/75%G 5th grade (n=1,207) help with cooking (Nozue et al, 2016)

- **USA**
  - Poorly understood, lack national surveillance data
  - 69% urban/suburban MN adolescents (n=4,746) help prepare dinner (Larson et al, 2006)

Value of Family Meals on Children’s Health and Educational Outcomes

Increased FM frequency associated with youth’s:

- Higher diet quality
- Healthier BMI*
- Positive mental health
- Better school performance (Neumark-Sztainer et al., 2003; Woodruff et al., 2008; Leech et al., 2014)

*Caveat: meals prepared with healthier cooking methods (Shin et al., 2015)
Associations between Involvement in Home Cooking and Children’s Health

• Better diet quality; eat more FV
  (Larson et al., 2006; Laska et al., 2012; Nozue et al., 2016; Chu et al., 2013)

• Other health outcomes
  • Healthier BMI (Kramer et al., 2012)
  • Cooking skills self-efficacy (Woodruff et al., 2013)
  • Mental health & family connections (Utter et al., 2016)

Caveat: gender & age differences, lasting effect unclear

Children’s Cooking Programs for Chronic Disease Treatment

• Very little literature published
• Obesity treatment
  • 6-week low-GL (Fajcsak et al., 2008)
• T2D – Impaired Glucose Intolerance (Nichol et al., 2008)
  • modified adult program, well-received, no outcomes
• Call for weight management intervention for childhood cancer survivors (Zhang & Parsons, 2015)
  • Few interventions (Stern et al., 2013)

Health Impacts of Cooking Interventions for Children

• Focus often obesity prevention, diet quality (FV)
• Setting often schools
• Frequent outcomes include –
  • Willingness to try new foods/reduced neophobia; increased FV preferences; improved FV intake; improved cooking self-efficacy; knowledge
    (Dudley et al., 2015; Davis et al., 2011; Jarpe-Ratner et al, in press)
• Sys Review, 5 – 12 YO, assessed strengths & bias
  • N=8, variable study designs, quality & outcomes
  • Only 2 studies rated as having strong designs (ours!)

My Cooking Intervention Research

University Collaborators

• Barbara Lohse, PhD, RDN, LDN
• Stephanie Smith, PhD, RDN
• Jessica Clifford, MS, RDN
• Melissa Pflugh Prescott, PhD, RDN

Students
4 PhD
15 MS
6 MPH
23 UG

Cooking with Kids

• Mission-motivate & empower healthy eating habits
• Experiential food & nutrition education; cooking, tasting

Lynn Walters and Jane Stacey
www.cookingwithkids.org
Cooking with Kids (CWK) Program

• Cooking Lessons
• Fruit and Vegetable Tastings
• School Lunches

CWK Interventions

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>5 cooking; 5 tasting lessons</td>
<td>3 cooking; 3 tasting lessons</td>
</tr>
<tr>
<td>Taught over school year</td>
<td>Taught in 1 semester</td>
</tr>
<tr>
<td>Food educator led cooking, teacher led tasting lessons</td>
<td>Food educator led all lessons</td>
</tr>
<tr>
<td>11 schools; prior exposure</td>
<td>4 schools; no prior exposure</td>
</tr>
<tr>
<td>Cooking +Tasting, Tasting only, Comparison</td>
<td>Randomly assigned to CWK or Control</td>
</tr>
<tr>
<td>Low income</td>
<td>Moderate income</td>
</tr>
</tbody>
</table>

Cunningham-Sabo & Lohse, 2014

Participant Characteristics

<table>
<thead>
<tr>
<th>New Mexico (n=2,230)</th>
<th>Colorado Pilot (n=257)</th>
</tr>
</thead>
<tbody>
<tr>
<td>50% girls</td>
<td>54% girls</td>
</tr>
<tr>
<td>92% 4th grade; 8% 5th grade</td>
<td>100% 4th grade</td>
</tr>
<tr>
<td>Race and Ethnicity:</td>
<td>Race and Ethnicity:</td>
</tr>
<tr>
<td>Hispanic 84%</td>
<td>White 73%</td>
</tr>
<tr>
<td>White 10%</td>
<td>Hispanic 14%</td>
</tr>
<tr>
<td>Other 6%</td>
<td>Other 11%</td>
</tr>
<tr>
<td>Prior Cooking Experience:</td>
<td>Prior Cooking Experience:</td>
</tr>
<tr>
<td>Cooks 83%</td>
<td>Cooks 79%</td>
</tr>
<tr>
<td>Make food w/ friends 62%</td>
<td>w/ friends 42%</td>
</tr>
<tr>
<td>w/ family 90%</td>
<td>w/ family 87%</td>
</tr>
</tbody>
</table>

Evaluation: Self-Report

• Prior cooking experience
  • Do you cook? With friends? With family?
  • Cooking self-efficacy (8 items)
  • Attitudes toward cooking (6 items)
  • Fruit and vegetables preferences (18 items)

Cooking Self Efficacy

Lohse, Cunningham-Sabo, et al., 2011

Attitudes Toward Cooking
Fruit & Vegetable Preferences

NM & CO Pilot Conclusions

- Significant cooking self-efficacy gains with both interventions
  - Most children improved (due to growth & experience over time?)
  - Greatest improvement with cooking + tasting
- Significant gains in vegetable preference with both interventions
  - Greatest improvement with tasting + cooking
- Impact on cooking attitudes and fruit preferences are less clear
  - For all, greatest improvements seen in non-cookers (mainly boys)

Fuel for Fun: Cooking with Kids + Parents & Play

- CWK-Colorado: Hands on cooking and tasting classroom lessons
- SPARK: Active recess program
- FFF-cafeteria: Lessons linked to cafeteria fruit and vegetable options
- FFF-family: Activities to engage parents and families (blog, family night, action packs)
- About Eating: Online healthy eating and activity lessons for parents

FFF Vegetable Measures

Initial FFF Findings

- Child Veg Pref (VP) related to cooking and food-related attitudes and behaviors in both children and parents...
- ...but not vegetable availability (VA) at home
- To enhance child VP, we suggest interventions that encourage child cooking practices, parent self-efficacy and/or modeling opportunities
  - VA (only) interventions likely not effective
  - Couple physical VA with cognitive VA
What does ‘Cooking’ mean to Children?

YES

No

Considerations when Involving Children in Cooking

• Match dose and intensity with desired outcomes
  • What are the learning objectives?
  • Behavioral objectives?
• Importance of evaluation
  • How best to measure prior experience, skills?
  • Dearth of valid/reliable tools
    • Self-report
    • Need for observational tools

Considerations when Involving Children in Cooking – continued

• Compatibility with setting
  • Awareness of food policies, common allergens
  • In-school requires integration with academic standards, limited time & other resources, often outside educator rather than teacher
  • After-school may be wide age-range, limited resources (food budget, adults, equipment)
• Other considerations for healthcare-based treatment programs?

Importance of & Successful Strategies for Involving Parents

• Parents often hesitant to involve their children in home cooking activities (Fulkerson et al., 2011)
  • Crunched for time, concerned about safety, can be stressful, underestimate child’s abilities, messy
  • But can provide ‘quality time’, improve child’s perceptions and willingness to try new, ‘healthy’ foods
• Promising evidence for impact of parent involvement
  • Direct involvement
  • Should vary by age of child
  • Parents as positive role models/positive parenting

IOM 2012 report – Accelerating Progress in Obesity Prevention

3 school environment strategies

Strategy 5-1: Require quality physical education and opportunities for physical activity in schools

Strategy 5-2: Ensure using nutrition standards for all foods and beverages sold or provided through schools

Strategy 5-3: Ensure food literacy, including skill development, in schools

School Environment

National Focal Point for Obesity Prevention

Strategy 3 - Ensure Food Literacy, Including Skill Development

• Sequential, K-12
• Based on DGAs
• Experiential techniques
• Current NE 4.6 hrs
• Increase to 20 – 50 hrs (Briggs et al., 2010)

Potential Federal Actions

• USDA develop curriculum guides
• Require LEAs adopt & implement K-12 FOOD & nutrition curriculum
(Cunningham-Sabo & Simons, 2012; Nelson et al. 2013)
Example Cooking Programs & Resources for Children

AND’s Kids Eat Right
http://www.eatright.org/resources/for-kids
Teen Battle Chef
http://www.familyfoodproductions.com/programs/middle-high-school
Cooking Matters (for kids)
http://cookingmatters.langh.com/kids-lab-and-for-kids
Common Threads
http://www.commonthreads.org/
The Family Dinner Project
http://thefamilydinnerproject.org/
Kids Cook Monday
http://www.childrenstastechallenge.org/children-
Youth EFNEP/SNAP-Ed (search cooking, kids)
http://www.chopchopmag.org/
https://cookingmatters.langh.com/programs/kids
https://cookingmatters.langh.com/kids-lab-and-for-kids

Appropriate Cooking Activities for Children by Age Group

• Importance of food & equipment safety
• Website resources
  All are practice-based guidelines
  - http://www.ltkidscooking.org/kitchen-tasks-for-different-age-groups/
  - http://www.eatright.org/resource/food/planning-and-prepare/cooking-tips-and-
    trends/cooking-well-with-kids
    healthyeating/nutrition/children/cookingcompetencies/

Practice Applications
1. Direct, positive cooking experiences can improve children’s attitudes, skills and intake of ‘healthy’ foods and other health indicators
2. Many resources exist; no need to create cooking activities/program ‘from scratch’
3. Consider how you can…
   • Get more cooking activities into schools
   • Get involved in existing cooking programs
   • Include/expand cooking experiences in your education/counseling programs
   • Get involved in research-based projects
   • AND has practice-based research network and Evidence Analysis Library

Presentation References

Other Resources
We Can! http://www.nhlbi.nih.gov/health/educational/wecan/eat-right/healthy-cooking.htm
Chop-chop magazine http://www.chopchopmag.org/
Evaluation tools through National Collaborative on Childhood Obesity Research http://nccor.org/nccor-tools/index

CWK and FFF References
Presentation References - continued


Audience Response Questions

What are your intentions to use culinary education (CE) in your practice?

A. I already do & am happy with the amount
B. I already do but plan to increase the amount
C. I plan to start incorporating CE into my practice
D. I don’t think it is appropriate for me to incorporate CE into my practice

Comments? Questions?