ASSESSING FAMILY MEALTIME BEHAVIORS AMONG LOW-INCOME AFRICAN AMERICANS PARTICIPATING IN A HEALTHY MEAL KIT INTERVENTION

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PURPOSE OF RESEARCH

• FREQUENT FAMILY MEALS → HEALTH PROMOTING

• FIRST STUDY TO ASSESS THE IMPACT OF MEAL KITS ON FAMILY MEALTIME BEHAVIORS AMONG FAMILIES WITH LOW-INCOME

• TO EVALUATE THE IMPACT OF A SIX-WEEK HEALTHY MEAL KIT INTERVENTION ON EATING AND MEALTIME BEHAVIORS AMONG AFRICAN AMERICAN FAMILIES WITH LOW-INCOME
BACKGROUND¹,²

- Family and home environment significantly influence health behaviors
- Family mealtimes positively affect dietary intake and BMI
- Family meals promote positive family interactions
METHODS: STUDY DESIGN

• PARTICIPANTS:
  – African Americans with low-income (n=36)
  – Recruited from Gainesville, FL
  – Main food preparer in household
  – At least 1 child in household

• INTERVENTION:
  – Provided with healthy meal kits for 6 weeks
    • 3 meals to feed family of 4
  – Recipe cards, cooking incentives, nutrition handouts
### Summer Salmon

**Nutrition Facts**

4 servings per container

<table>
<thead>
<tr>
<th>Serving size</th>
<th>Calories</th>
<th>% Daily Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 of recipe</td>
<td>670</td>
<td></td>
</tr>
</tbody>
</table>

#### Ingredients:
- ½ cup orange juice
- 2 tablespoons olive oil
- 2 teaspoons honey
- 2 teaspoons mustard
- 1 teaspoon salt
- 1 ½ teaspoons ground black pepper
- 4 skinless salmon fillets (6 ounces each)
- 8 ounces dry whole wheat linguine
- 12 asparagus spears
- ½ cup chopped onion
- 2 cloves garlic
- ¾ cup fresh parsley sprigs
- 4 fresh basil leaves
- 1 tablespoon grated Parmesan cheese

#### Directions:
1. Wash hands and cooking surfaces. Rinse fresh produce. In a small bowl, whisk together the orange juice, honey, mustard, ½ teaspoon salt, and 1 teaspoon ground black pepper to make an orange sauce. Trim ends off of asparagus spears and throw away. Chop asparagus spears into medium-sized pieces (or about 1-inch long pieces). Finely chop garlic, parsley, and basil. Set orange sauce and produce aside.
2. Season salmon with ½ teaspoon each of salt and ground black pepper. In a large skillet over medium-high heat, add 1 tablespoon olive oil. Add the salmon and cook for 4 minutes. Flip the salmon over, add the orange sauce, and continue to cook until the salmon is cooked through, about 4 more minutes. The internal temperature of the salmon should be at least 145°F, measured with a food thermometer. Once fully cooked, transfer to a plate.
3. Bring a pot of water to a boil. Add pasta and cook for about 6-8 minutes. Drain the pasta and asparagus.
4. In a large skillet over medium heat, add the remaining 1 tablespoon of olive oil. Add the onion, garlic, parsley, and basil and sauté, stirring occasionally, about 3 minutes. Add the pasta and asparagus to the garlic mixture, sprinkle with cheese, and toss to combine. Serve the salmon alongside the pasta.
METHODS: DATA COLLECTION

• BASELINE:
  — Demographic Survey
  — U.S. Household Food Security Survey Module
  — Descriptive statistics

• BASELINE AND WEEK 6:
  — Child Mealtime Behavior Survey
  — Paired t-test, descriptive statistics
CHILD MEALTIME BEHAVIOR SURVEY

• My child enjoys tasting new foods.
• My child eats meals with myself or other family members.
• My child helped prepare meals in the meal kits.
• My child tried new foods as a result of the meal kits.
• My child enjoyed preparing meals in the meal kits.
• On average, how many days a week do you eat at least one meal together as a family?
• What effect, if any, did the meal kits have on stress related to eating together as a family?
• How was your family involved in preparing the meal kit meals?
• How did the meal kits affect eating together as a family?
RESULTS

Quantitative
### Participant Demographic Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Amount (n=36)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in years, mean (SD)</td>
<td>43 (14)</td>
</tr>
<tr>
<td>Gender, %</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>11</td>
</tr>
<tr>
<td>Female</td>
<td>89</td>
</tr>
<tr>
<td>Food security status, %</td>
<td></td>
</tr>
<tr>
<td>Food Secure</td>
<td>33</td>
</tr>
<tr>
<td>Food Insecure</td>
<td>67</td>
</tr>
<tr>
<td>BMI category, %</td>
<td></td>
</tr>
<tr>
<td>Underweight</td>
<td>0</td>
</tr>
<tr>
<td>Normal Weight</td>
<td>14</td>
</tr>
<tr>
<td>Overweight</td>
<td>19</td>
</tr>
<tr>
<td>Obese</td>
<td>67</td>
</tr>
<tr>
<td>Income (n=27)</td>
<td></td>
</tr>
<tr>
<td>&lt;$15,000</td>
<td>21</td>
</tr>
<tr>
<td>$15,000-$24,999</td>
<td>27</td>
</tr>
<tr>
<td>$25,000-$34,999</td>
<td>21</td>
</tr>
<tr>
<td>$35,000-$49,999</td>
<td>21</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>10</td>
</tr>
<tr>
<td>Number adults in household</td>
<td>2 (1)</td>
</tr>
<tr>
<td>Number children in household</td>
<td>2 (1)</td>
</tr>
</tbody>
</table>
ON AVERAGE, HOW MANY DAYS DO YOU **COOK/EAT** AT LEAST ONE MEAL TOGETHER AS A FAMILY?

<table>
<thead>
<tr>
<th></th>
<th>Pre-Intervention (Mean ± SD)</th>
<th>Post-Intervention (Mean ± SD)</th>
<th>P-Value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cooked Together</td>
<td>2.6 ± 1.8</td>
<td>2.9 ± 1.7</td>
<td>0.5</td>
</tr>
<tr>
<td>Ate Together</td>
<td>5.1 ± 1.9</td>
<td>4.8 ± 1.6</td>
<td>0.2</td>
</tr>
</tbody>
</table>

*Analyzed using paired t-test
MY CHILD **HELPED PREPARE/ATE** THE MEALS INCLUDED IN THE MEAL KITS.

### Helped Prepare the Meals

- Never: 14%
- Rarely: 14%
- Sometimes: 28%
- Often: 38%
- Always: 6%

### Ate the Meals

- Never: 39%
- Rarely: 6%
- Sometimes: 22%
- Often: 33%
- Always: 0%
WHAT EFFECT DID THE MEAL KITS HAVE ON STRESS RELATED TO:

Shopping for Food

- Decreased a Lot: 47%
- Decreased a Little: 23%
- No Effect: 16%
- Increased a Little: 14%
- Increased a Lot: 0%

#SNEB2020: What Food Future?
WHAT EFFECT DID THE MEAL KITS HAVE ON STRESS RELATED TO:

- Decreased a Lot: 44%
- Decreased a Little: 17%
- No Effect: 15%
- Increased a Little: 24%
WHAT EFFECT DID THE MEAL KITS HAVE ON STRESS RELATED TO:

Eating Together as a Family

- Decreased a Lot: 47%
- Decreased a Little: 3%
- No Effect: 3%
- Increased a Lot: 47%
- Increased a Little: 0
RESULTS

Qualitative
WHAT CHANGES SHOULD BE MADE TO MAKE THEM MORE KID-FRIENDLY?

• MORE KID-FRIENDLY ALTERNATIVES

  – “Add more meals that would be attractive for kids. Pizza, mac and cheese dish, etc.”
  – “Add more fruits and kid-friendly options - kids don’t eat what we eat.”
  – “Add a treat or a sweet element, like a cookie.”
  – “Changes to the card to make them so the kid can read.”
  – “Offer meat alternatives for vegetarian dishes.”
HOW WAS YOUR FAMILY INVOLVED IN PREPARING THE MEAL KIT MEALS?

• FAMILY MEMBERS WERE INVOLVED IN A VARIETY OF WAYS
  — “Mostly chopped, stirred and measured.”
  — “Everybody got involved. Someone washed, another peeled.”
  — “Prepping ingredients, seasoning meat, set oven temp, measure ingredients.”
  — “Kids would take out foods and hand to food preparer.”
  — “Helped open canned goods, cleaning meat and vegetables, getting out utensils.”
  — “When daughter helped prep veggies, she’s more likely to eat them.”
DID HAVING THE MEAL KITS AFFECT HOW YOU PREPARED FOOD FOR THE OTHER DAYS OF THE WEEK?

• MEAL KITS HELPED FAMILIES BECOME MORE HEALTH CONSCIOUS AND SAVE MONEY
  – “Before they didn’t help often, but now kids help with non-kit meals too.”
  – “Tried to cook more healthy foods, less fast food, able to eat leftovers from the kits.”
  – “More willing to try new things.”
  – “I was more health conscious and ate more fresh veggies.”
  – “Saved a lot of money because didn’t have to go grocery shopping as often.”
HOW DID THE MEAL KITS AFFECT EATING TOGETHER AS A FAMILY?

• MEAL KITS ENCOURAGED FAMILIES TO EAT TOGETHER MORE
  — “Before they wouldn’t eat together as often, but with meal kits, they ate them all together.”
  — “Caused us to spend more time together.”
  — “Positive impact. Since they helped prepare, they wanted to also sit down and eat it.”
  — “Increased one-on-one talk time.”

• SOME PARTICIPANTS INDICATED NO CHANGE → ALREADY ATE TOGETHER AS A FAMILY PRIOR TO STUDY
DID EVERYONE IN YOUR FAMILY EAT THE MEAL KIT MEALS?

• MAJORITY OF FAMILY MEMBERS ATE THE MEALS
  —“Everyone at least tried the meals”
  —“Yes, everyone and they were looking forward to it.”
  —“Everyone ate it, some ate more than others.”
  —“Yes, they all ate every meal. The entire family ate them.”

• VARIETY OF REASONS FOR SOME FAMILY MEMBERS NOT EATING THE MEALS
  —“Daughter didn’t eat meals, because she only eats fish/vegetarian.”
  —“One didn’t (dad). He had specific diet restrictions, but he would still eat together.”
  —“Yes, except for the little kids.”
CONCLUSIONS

• MEAL KITS MAY:
  — Positively engage children in preparing and eating family meals
  — Decrease stress associated with family mealtimes
  — Positively affect eating together as a family
  — Encourage families to become more health conscious

• FUTURE INTERVENTIONS:
  — Provide additional kid-friendly alternatives to meals
  — Further assess the impact of meal kits on:
    • Dietary intakes and health parameters of the children in households
    • Different target populations
REFERENCES


THANK YOU

- UF/IFAS OFFICE OF RESEARCH
- KARLA SHELNUTT, PHD, RD & THE SHELNUTT LAB
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- RESEARCH PARTICIPANTS
QUESTIONS?

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