

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**

BACKGROUND^{1,2}



Family and home environment significantly influence health behaviors



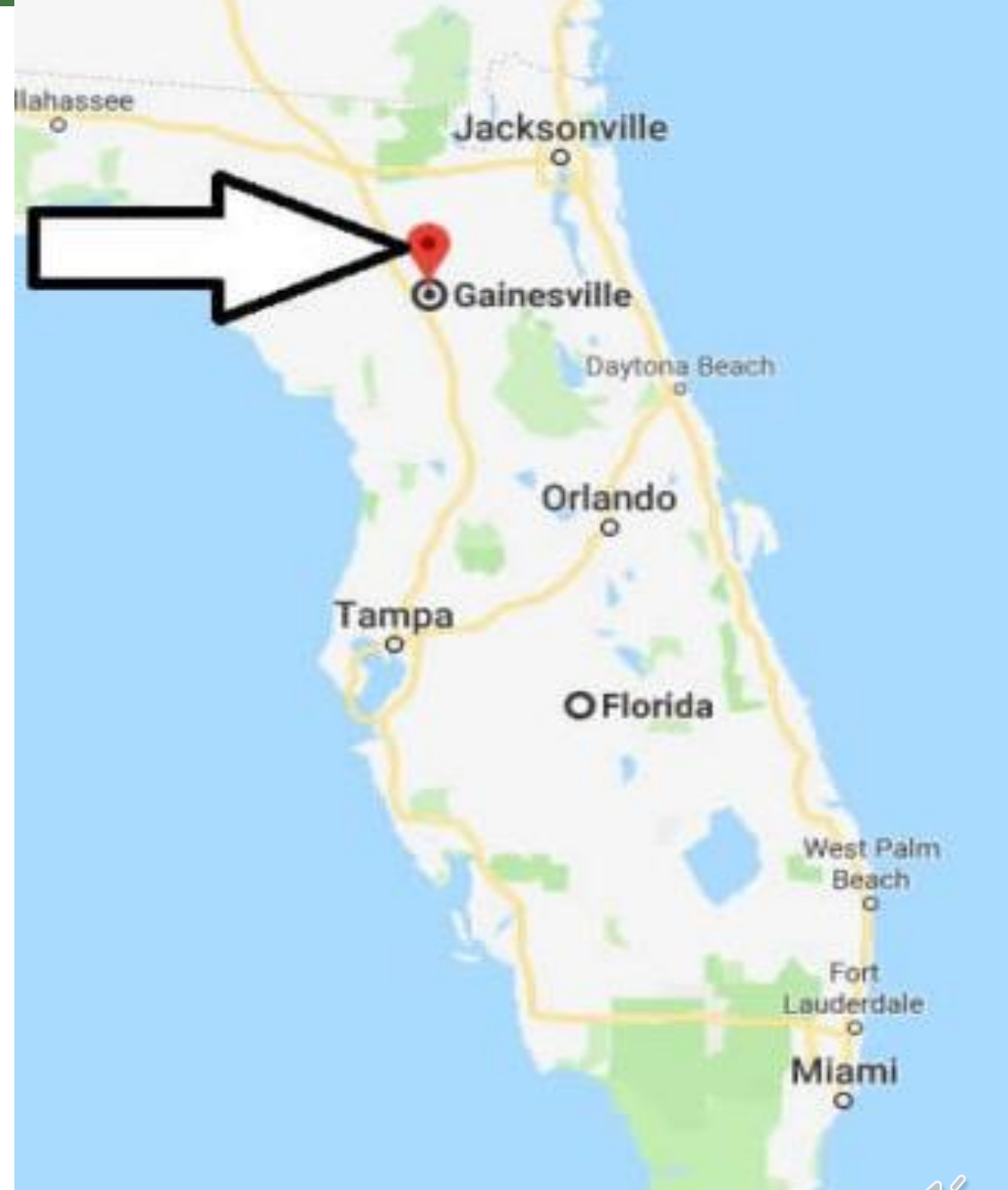
Family mealtimes positively affect dietary intake and BMI



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



EXAMPLE RECIPE CARD

Summer Salmon



Nutrition Facts	
4 servings per container	
Serving size	1/4 of recipe
Amount per serving	
Calories	670
% Daily Value*	
Total Fat 32g	41%
Saturated Fat 7g	35%
Trans Fat 0g	
Cholesterol 95mg	32%
Sodium 740mg	32%
Total Carbohydrate 53g	19%
Dietary Fiber 2g	7%
Total Sugars 8g	
Includes 3g Added Sugars	6%
Protein 45g	
Vitamin D 19mcg	100%
Calcium 72mg	6%
Iron 3mg	15%
Potassium 1080mg	25%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

15
MIN.

prep time

30
MIN.

cook time



4 servings

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slice & spice
dinner time is family time



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
- ¼ 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. Add the asparagus and continue cooking for 2 more 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



slice & spice
dinner time is family time



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

Characteristics	Amount (n=36)
Age in years, mean (SD)	43 (14)
Gender, %	
Male	11
Female	89
Food security status, %	
Food Secure	33
Food Insecure	67
BMI category, %	
Underweight	0
Normal Weight	14
Overweight	19
Obese	67
Income (n=27)	
<\$15,000	21
\$15,000-\$24,999	27
\$25,000-\$34,999	21
\$35,000-\$49,999	21
\$50,000-\$74,999	10
Number adults in household	2 (1)
Number children in household	2 (1)



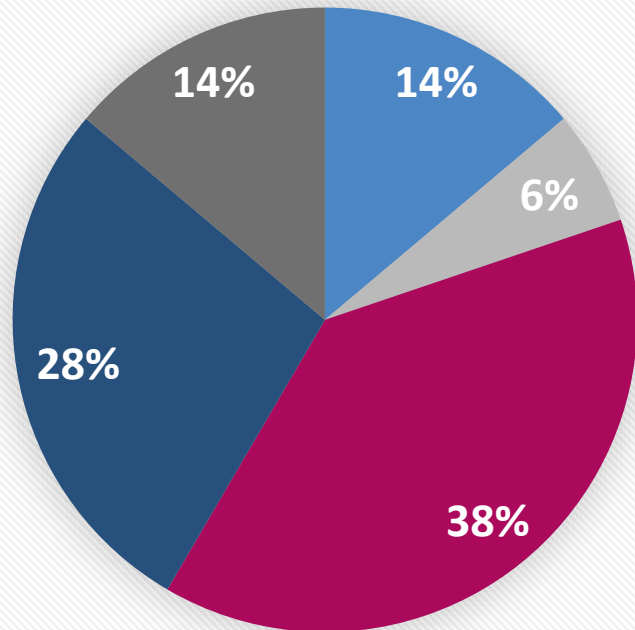
ON AVERAGE, HOW MANY DAYS DO YOU **COOK/EAT** AT LEAST ONE MEAL TOGETHER AS A FAMILY?

	Pre-Intervention (Mean \pm SD)	Post-Intervention (Mean \pm SD)	P-Value*
Cooked Together	2.6 \pm 1.8	2.9 \pm 1.7	0.5
Ate Together	5.1 \pm 1.9	4.8 \pm 1.6	0.2

*Analyzed using paired t-test

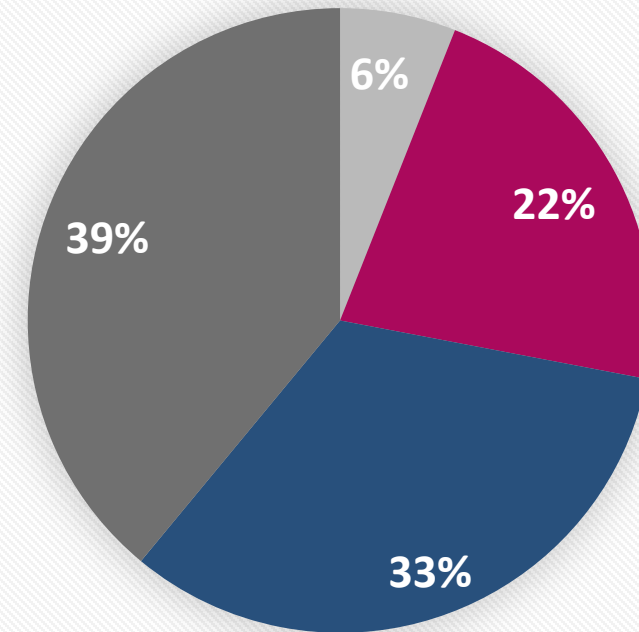
MY CHILD HELPED PREPARE/ATE THE MEALS INCLUDED IN THE MEAL KITS.

Helped Prepare the Meals



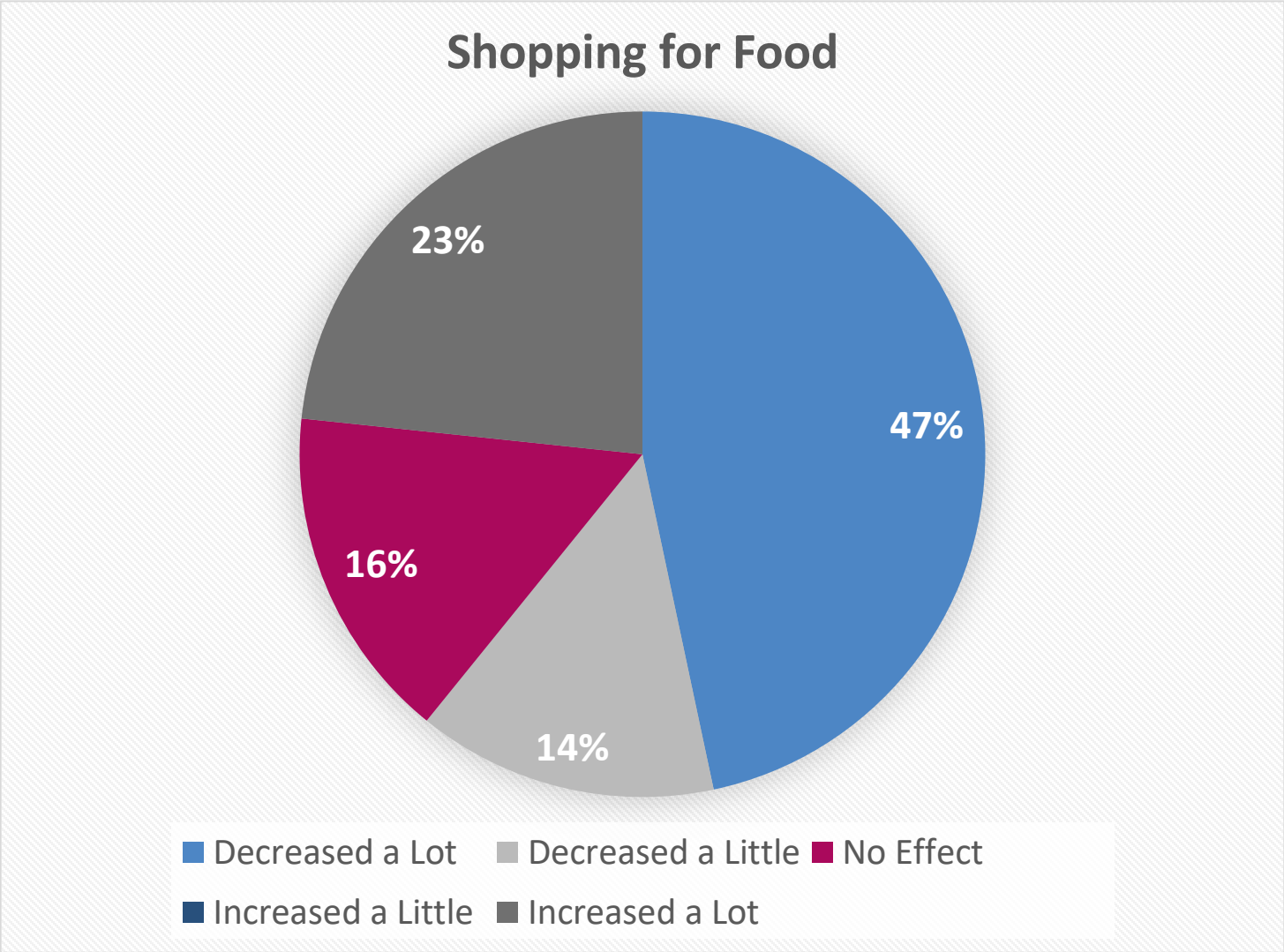
■ Never ■ Rarely ■ Sometimes ■ Often ■ Always

Ate the Meals

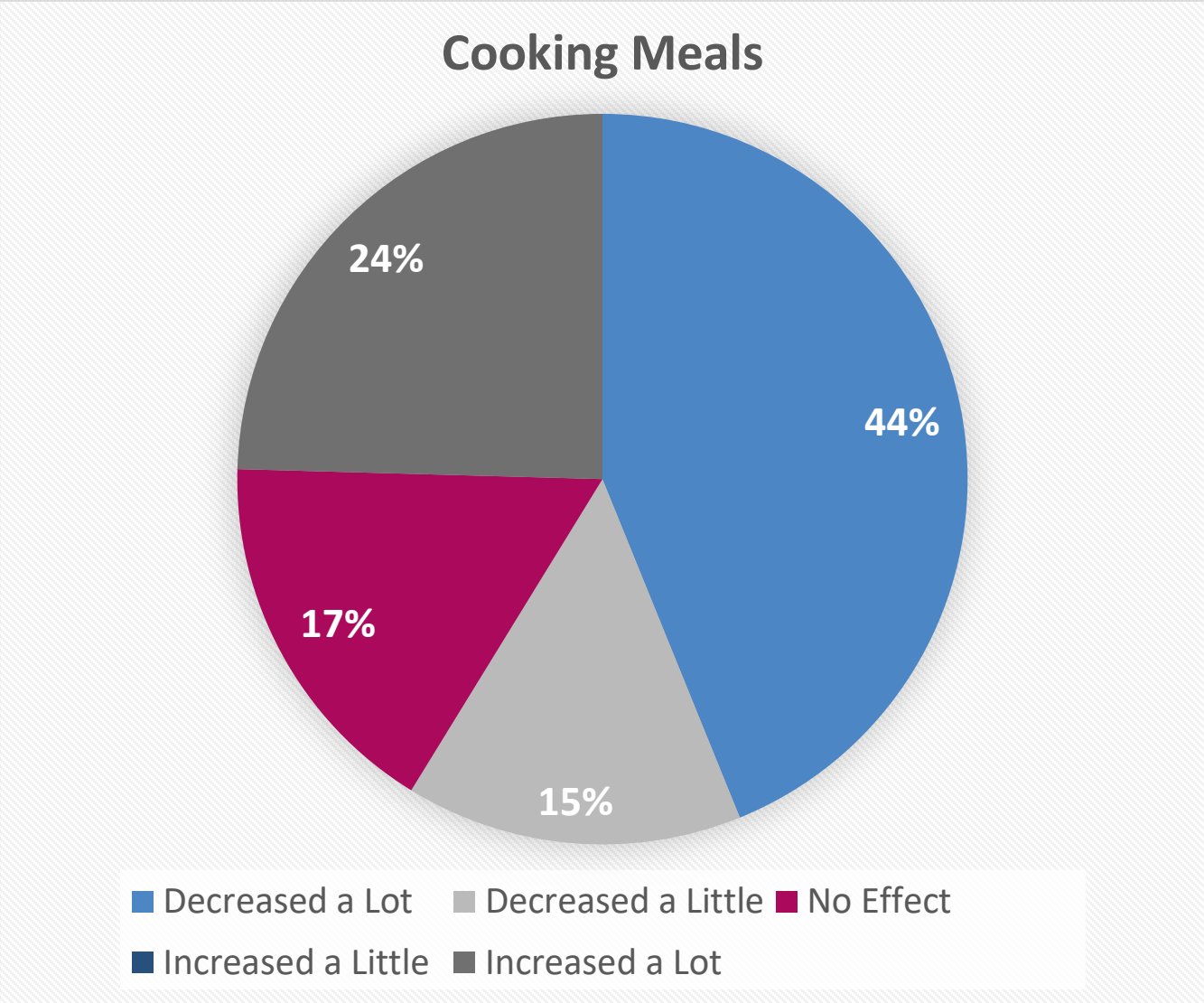


■ Never ■ Rarely ■ Sometimes ■ Often ■ Always

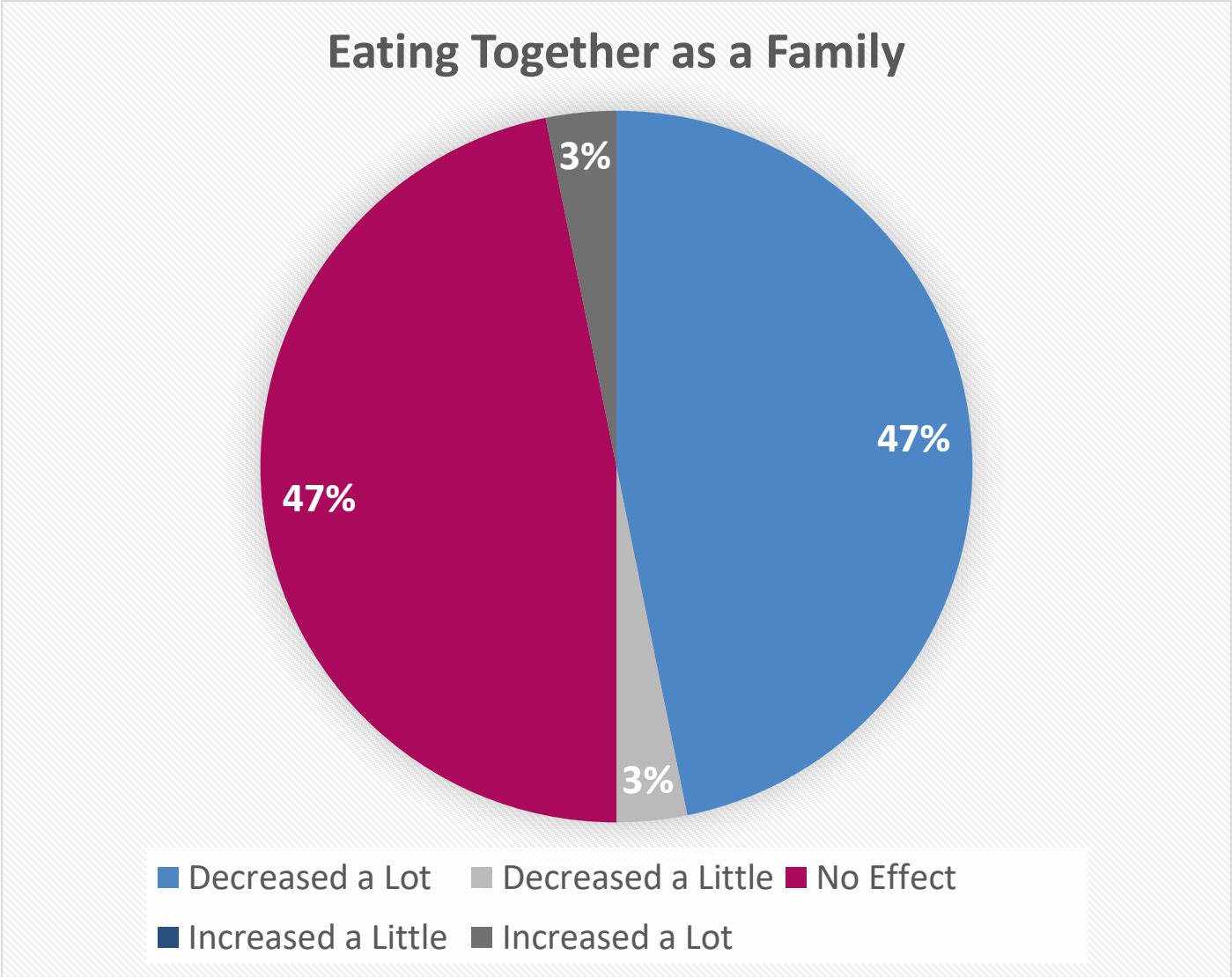
WHAT EFFECT DID THE MEAL KITS HAVE ON STRESS RELATED TO:



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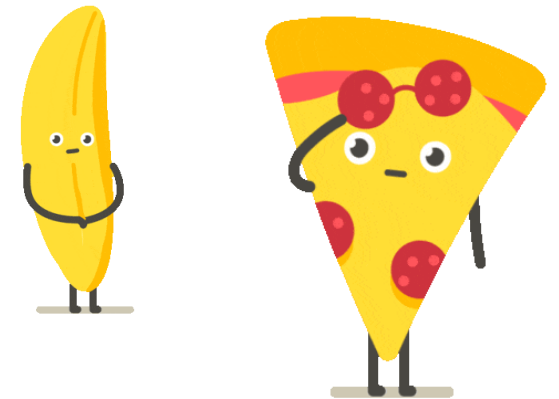
RESULTS

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.”
- “Include kid-friendly knife. Have **kid friendly tools**.”
- “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

1. Hennessy E, Dwyer L, Oh A, Patrick H. Promoting family meals: a review of existing interventions and opportunities for future research. *Adolescent Health, Medicine and Therapeutics*. 2015:115. doi:10.2147/ahmt.s37316.
2. Dallacker M, Hertwig R, Mata J. The frequency of family meals and nutritional health in children: a meta-analysis. *Obes Rev*. 2018;19(5):638-653.



THANK YOU

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QUESTIONS?

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