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**An Evaluation of Community Based Food Intervention:
Cooking Matters in Charleston, MS**

By Lindsay Fournier

A thesis submitted to the University of Mississippi in partial fulfillment of the
requirements of the Sally McDonnell Barksdale Honors College.

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Advisor: Dr. John Green

Reader: Dr. Meagen Rosenthal

Reader: Dr. Anne Cafer

External Reader: Dr. Catherine Moring

Abstract

The purpose of this study is to evaluate the effectiveness of Cooking Matters classes in producing improvement in individuals' cooking skills and confidence, as well as their eating behaviors, shopping skills, and perceptions of cooking in rural Charleston, MS. These classes have reported great success in more urban areas such as Atlanta, GA; Philadelphia, PA; and Washington, DC; however, different challenges may be faced in rural Mississippi. To study the effectiveness of the interventions in a new context, pre- and post-intervention self-report surveys were performed and evaluated using Wilcoxon statistical analysis as well as paired sample t tests, and bootstrap confidence intervals. Following these, two focus groups with a total of twenty participants were conducted. From the surveys, healthy food behaviors were seen to have increased (Diff = .141, [.026, .257], $p = .017$), as well as their frequencies to choose healthy food alternatives (Diff = .375, [.221, .529], $p \leq .001$) and the frequencies to engage in healthier eating behaviors (Diff = .310, [.174, .435], $p \leq .001$). A decrease was seen in individuals' unhealthy eating behaviors (Diff = -.120, [-.269, .024], $p = .099$), as well as their negative perceptions of cooking (Diff = -.110, [-.284, .072], $p = .239$). The most dramatic change was seen in the participants' cooking confidence (Diff = .450, [.319, .592], $p \leq .001$). From the focus groups, it was seen that five participants reported pushback from loved ones as a leading struggle in implementing changes in their lives. Participants reported success in implementing substitutions and adjustments in meals they normally ate seventeen times across the two focus groups. The information gathered from this project can be used to change the classes in the future and

inform similar interventions by emphasizing the importance of socialization in association with health behaviors.

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Introduction

This project evaluates the effectiveness of Cooking Matters classes in positively influencing people's attitudes about eating and cooking, as well as their behaviors. The population observed is located in Charleston, MS. Charleston is located in the Mississippi Delta, a region in the broader Mississippi River Delta. The Mississippi River Delta region is one of the most socioeconomically disadvantaged areas of the United States. This region spans throughout eight states: Alabama, Arkansas, Illinois, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee. Measurements of disease burden within delta counties throughout these states are consistently 10% higher than those within non-Delta counties in the same state. Similarly, these measurements are also 20% higher than those seen in other parts of the United States (Gennuso et al., 2016).

At the heart of the Mississippi River Delta region is the Mississippi Delta, which consists of 18 counties: Bolivar, Carroll, Coahoma, Desoto, Holmes, Humphreys, Issaquena, Leflore, Panola, Quitman, Sharkey, Sunflower, Tallahatchie, Tate, Tunica, Warren, Washington, and Yazoo. Mississippi is consistently at the bottom of the health rankings between states, currently ranked as number 50 by the United Health Foundation through a score derived from measurements across five categories of health: behaviors, community and environment, policy, clinical care, and outcomes (United Health Foundation,

2019). The Mississippi Delta is home to a greater percentage of racial and ethnic minorities than the non-delta region of Mississippi, with 48% of the Delta population as minorities, versus 31% in non-delta counties (Green et al., 2015). Due to this great disparity between both, Delta and non-delta counties and Mississippi and the rest of the United States, it is imperative to try to combat this within the Mississippi Delta counties. The Delta has developed and refined innovative health models and practices in the face of these challenges, with many of these developments arising from the community level. Examples include the Community Health Center Movement, which began during the Civil Rights era, and included the development of community health centers to provide comprehensive primary care including dental, vision, and mental health services (Centellas, Willoughby, & Green 2019).

As said by the World Health Organization, “Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity” (World Health Organization, 1946). Food is a major component in health outcomes for individuals. The type of food consumed by individuals affects their overall health in multiple ways. It has been proven to directly affect an individual’s weight, blood pressure, blood sugar, and cholesterol levels, and can increase or decrease a person’s risk of developing chronic diseases such as Type 2 diabetes and cardiovascular disease. Due to the limited access to nutritious and affordable food, the health of people in the Mississippi Delta is suffering. According to the Mississippi Department of Health, in 2016, our state was ranked first in prevalence of diabetes, with over 300,000 adults living with the disease. This is

roughly 13.6% of the adult population. This number increases as you venture into the Delta, with 14.5% reporting having diabetes in Tallahatchie County.

The James C. Kennedy Wellness Center, another community-based effort, has tried to combat chronic illnesses and unhealthy living through a multitude of opportunities, including weight loss and management classes, Diabetes self-management education, and Cooking Matters classes. For the purpose of the research, the focus is on the Cooking Matters classes. The Cooking Matters curriculum was developed in 1993, and strives to build a world where healthy eating choices are available for all. These classes serve to improve the participants' cooking and shopping skills, as well as their ability to make healthier choices and substitutions such as lean meat, low sodium choices, and low-fat dairy products. They do so through practical education using professional-level curricula and instructional materials.

The Cooking Matters classes are structured and are held in locations throughout the country, but most of the studies focused in evaluation have occurred in urban regions. Because of this, there are some parts of the class that may not prove to be as effective in rural Mississippi, and there are certain skills that might be more helpful. Through this mixed methods evaluation, it is hoped that the classes could potentially be adjusted to help make them better suited for the Mississippi Delta and inform their use in other rural locations.

To obtain data, two main methods were used. The first was through analysis of survey data collected before and after the classes to assess the likelihood of individuals to perform certain behaviors and their confidence in their

cooking skills. Statistical analysis was then performed on this data to allow analysis of the changes in behaviors and attitudes. The second method involved two focus groups among participants following completion of the classes six or more months later.

Due to the high prevalence of food related diseases, such as Type 2 Diabetes and cardiovascular disease, adjusting the diets of individuals of the Delta is one beneficial measure to aid in the fight for a healthier state. Because of this, evaluation of the effectiveness of classes that encourage these adjustments will prove to be greatly beneficial for the populations and can be generalized even more broadly for populations with similar demographic characteristics and socioeconomic contexts.

Literature Review

While health is, without a doubt, a largely biological and physiological phenomenon, many people feel as though it is also a social problem, which is much of what I would like to explore through this project. William C. Cockerham's "Health Lifestyle Paradigm" nicely outlines the fact that some things can be left up to chance but not be entirely random (2005). He groups everything that is occurring in one's life as either a "life choice" or a "life chance". Life choices are affected heavily by our social and cultural circumstances but are also partially in our control. Life chances are not in our control; however, they are not like the lottery. They depend upon a person's social situation. He defines them as "The chances that people have in life because of their social circumstances." These social situations can be dictated by a number of factors. For example, socioeconomic class, gender, age, and race have all been found to have varying relationships with the prevalence and onset of diabetes mellitus (Link & Phelan, 1996) among other health outcomes.

Cockerham's Lifestyle Paradigm focuses heavily on the ideas of "habitus". Habitus is a set of dispositions that both guides and reflects an individual's health choices (Cockerham, 2005). It guides development of our attitudes about the world by way of two general pathways - one by socialization and a second through our social position. Social position is the route by which our class, neighborhood, and gender affect our access to resources and opportunities, also

known as our life chances (Hinote & Wasserman, 2017). Because of this, it can be concluded that much of our health is a result of not only biological influences, but also social influences, including socialization and our social interactions.

Another group of major challenges in the healthcare world seems to be understanding why urban and rural medicine differ so much, what the importance in this divergence is, and how these differences can be approached and implemented into the healthcare routine effectively. People in the middle to lower socioeconomic classes in urban areas are surviving very differently from those in rural areas; however, places are becoming more urban every day, so some also ask the question - “why does it matter?” It does matter, though, because many lives are being saved everyday by rural medicine, and right now, there are very rural areas that are in need of nurturing.

In “Rethinking Rural Health Ethics”, Simpson and McDonald discuss teaching ethics classes at a university, which is where she realized that these guidelines did not fit exactly with her rural upbringing, and that was okay, but it is important to be aware of this fact. Specifically, in this book, they discuss the importance of “confidentiality” and how that differs in rural areas due to the large community sense in more rural areas and how that must be balanced differently. While confidentiality may not be a major issue in the case of Cooking Matters, it does help to inform the realization that rural Cooking Matters classes might be more effective if tuned towards the rural context. For example, from the overall data report from Cooking Matters produced in 2013, it shows that a significant struggle faced by these classes across the board is encouraging the students to

continue the habits they learned in the classes (Share Our Strength, 2013); however, from the focus groups we led in Charleston, MS, to be discussed later, we saw that the students were very willing to make the changes; however, many of their problems in implementation came from the costs associated with the foods as well as adjusting things to their whole family, thus resulting in a more complicated mix of life choices and chances than we might generally expect. Referring back to Cockerham, we see that socialization variations between rural and urban areas can be important when exploring these differences. The strong community aspect of the south detailed by Simpson can further enforce this importance (Simpson & McDonald, 2017). Furthermore, eighty-nine percent of families that participated in the Cooking Matters classes nationally reported saving money when grocery shopping (Share Our Strength, 2013).

The Cooking Matters classes emphasize the importance in making healthy lifestyle changes, including a shift to low-sodium, lean meat, and whole grain choices, just to name a few. A shift to a low-sodium diet has been seen to lead to a decrease in blood pressure, as well as a change to lean meat (Graudal et al., 2017; Davies et al. 2009; Nowson et al., 2009). Switching to whole grain also had a large effect on blood pressure, with a systolic blood pressure being reduced by 6 mmHg (Tighe et al., 2010).

One major issue when it comes to chronic illnesses is obesity, and multiple studies have been conducted with women and children primarily to determine how best to lose weight and improve health in this way. It has been found that the best way to do so is through multiple interventions, such as

through implementation of both, nutritional changes and increased exercise (Fleming et al., 2014; Wadsworth & Daly, 2014). There have also been other studies performed, such as one demonstrating that there is a positive relationship between cooking classes of this type and increased beneficial nutritional behaviors (Apatu et al., 2016).

An important aspect of the Cooking Matters classes that I hope to observe in some way is its ability to carry over into the families of those involved. Not only do nutritional habits begin at young ages, the human body has been suspected to behave differently in adulthood due to the diets taken on in our youth (Gatto et al., 2017). It has been shown that programs such as these are effective in decreasing the obesity rates and increasing metabolic rates in youth. It has also been seen that simply being directly involved in the cooking of vegetables can have great effects on a child's opinions on these foods (Cunningham-Sabo & Lohse, 2013).

Community-level factors, such as food deserts as well as poor individual behaviors, like sedentary lifestyles, consuming large portion sizes, and eating high-calorie fast foods, can lead to poor health outcomes. All of these factors are prevalent in the South. One study observed a population in a rural South Carolina community that was experiencing these issues (Torrence et al., 2018). In this study, the Faithful Families Cooking and Eating Smart and Moving for Health intervention was created. This intervention taught nutrition and physical activity education components, as well as components to address the organizational barrier to nutrition and physical activity. The study found that there

was statistically significant change in perception of food security, confidence with physical activity, healthy eating, and cooking skills (Torrence et al., 2018).

Health promotion faces even more barriers in the Mississippi Delta. A case study conducted with African American men in the Mississippi Delta found that there were three overarching issues. They said that men do not talk about health, the issue goes beyond just healthcare, and there is a need for a strong individual to lead by example. Other notable findings were a lack of togetherness in the Delta and a lack of knowledge about the problems in the Delta. People outside of the Delta are not aware of the very specific needs of the communities within the Delta (Wang et al., 2017).

Based on the literature reviewed, it can be hypothesized that the classes will lead to a decrease in unhealthy behaviors, an increase in healthy behaviors, and an increase in overall confidence in cooking skills. The following research questions are to be approached.

1. How effective are the Cooking Matters classes in influencing lifestyle changes in the participants?
2. What practices have had the greatest effect on the participants and why?
3. Which practices are falling short, and how could this be corrected?
4. How could these findings be used to inform other rural areas throughout Mississippi and the United States?

Methods

The James C. Kennedy Wellness Center in Charleston, MS, offers a program called “Cooking Matters”. Cooking Matters was developed by *Share Our Strength* to help teach families to learn how to shop for and cook healthy foods. The classes were designed for people with low literacy and teach food preparation skills as well as nutrition knowledge to inform healthy food and beverage choices (Barnhart et al., 2019). In this program, participants partake in 2-hour classes each week for 6 weeks. One round of courses went from December to January, while another went from February to March. These courses were co-led by a volunteer chef and a nutrition educator.

Surveys

For the research, pre- and post- intervention surveys were conducted with the class participants. The pre-intervention surveys were given on the first day of class, and the post-intervention surveys were given on the last day of class. Following the surveys, data were managed in Red Cap software and later converted to an IBM SPSS Statistics dataset.

Demographic characteristics were analyzed using descriptive statistics. The rest of the data were analyzed through the nonparametric paired samples Wilcoxon test as well as through the paired sample t test. Pre-post differences were calculated and interpreted as the primary effect sizes. The Wilcoxon test

was chosen because of the small sample sizes and potential non-normal distribution, as well as the use of the pre- and post-surveys. Only results from participants who answered both, the pre- and post- surveys were used in the analysis. Using bootstrapping techniques, 95% confidence intervals were calculated as well. These values can be seen represented in Tables 2-8 in the findings chapter. Cronbach's alpha (α) scores were found for each scale to test for internal reliability.

The survey items were separated into seven categories based on the type of question being asked. These categories were: healthy food behaviors, healthy food frequencies, unhealthy food behaviors, negative perceptions of cooking, shopping behaviors, and cooking confidence. Response options ranged from 1 to 5. The specific questions for each category can be seen in Tables 2-8. Response choices to these questions varied. Some questions were coded, for example, as 0 = not at all to 5 = more than once a day for prevalence of behaviors or 0 = strongly disagree to 5 = strongly agree referring to the attitudes of the participants.

For each section a summative scale variable was created using the average of the other variables. These scales were then compared pre-post using the same statistics and a bar chart (Fig. 1).

It should be noted that one question, "How often do you worry that your food might run out before you get money to buy more?", was reverse coded to ensure that the trends and descriptive data of the scale were in the right conceptual order.

Discussion and understanding of the data observed through the surveys allows for further evaluation of the classes' effectiveness. This allows us to infer which teachings were the most effective and which changes were the most likely to be achieved by observing the means that had the greatest difference between the pre and post-results.

Focus Groups

Two focus groups were held on April 25, 2019 for previous participants in the classes to gather qualitative data to support our quantitative data. There were 20 total participants. The question guide was as follows:

1. Please tell us about your overall experience as a participant in the Cooking Matters (CM) class. How did you find out about the CM class?
2. What do you feel was the most important thing you learned in the class that you did not know before?
3. Did you find the group and teamwork aspects of the class helpful? Why or why not?
4. What cooking skills did you learn in the CM classes? What budgeting/grocery shopping skills did you learn about being able to purchase healthy food on a limited income?
5. *Hand out green/yellow cards.* On the green card, write things that you have continued to do following the CM class. On the yellow card, write what made incorporating/continuing these skills difficult.
6. Did you and/or your family make any significant lifestyle changes as a result of what you learned in CM?

7. How useful were the utensils you received at the end of the class? Do you use them a lot in meal preparation?
8. How well do you think the food available here at the Wellness Center helps reinforce what was learned in the CM course?
9. What would you change about the CM class in order to improve it for the future?
10. What additional information would you have liked to learn that could help you cook healthy meals for your family?
11. Would you like to participate in another CM class in the future?
12. How do you think we can recruit more people to participate in CM?

The focus groups were audio recorded, and notes were taken. The audio recordings were then transcribed, and the notes were condensed, as well as any flipchart notes or otherwise collected from the focus groups, such as the data collected on the yellow and green cards from question 5.

The data were then further analyzed to identify major themes as well as other notable data. Finally, the data from the focus groups and the data from the statistical analysis were compared and condensed to identify overall trends across both qualitative and quantitative data.

The information gathered through the focus groups can serve multiple purposes to further the research, such as showing which skills and teachings were perceived as most important to the participants, as well as receiving specific explanations for the patterns seen in the pre- and post-surveys. This came in the forms of both, explanations as to why certain things worked, as well

as reasons why other lessons did not stick as well. This data will help to further inform the broader usage of the results of the research.

Findings

In this chapter, I present the findings from analysis of both the statistical data and the focus groups. Through these data, I am attempting to determine which of the behaviors and skills taught had the greatest influence on the participants in the classes, as well as which had the least. Using the focus group data, I plan to try to further extrapolate why this is the case by identifying barriers and challenges. Through this information, I am hoping to be able to guide future development of the classes to make them as effective as possible for the people of the Delta.

This chapter is organized through the individual sections that the classes were divided into. The chapter begins with Table 1, which details the demographic characteristics of the classes, followed by a short discussion of the data represented in the table. Tables 2-8 show the data resulting from the statistical analysis. Following each of these tables, there is a discussion of the data seen in the tables as well as a discussion of the related information from the focus groups. Figure 1 compares the scales for each category. Table 9 summarizes the information gathered from the focus groups.

Table 1: Cooking Matters Demographics

Gender	N = 120 (f, %)
Female	106, (88.3%)
Male	14, (11.7%)
Age	N = 120
Under 18	1, (.8%)
18-29	8, (6.7%)
30-39	21, (17.5%)
40-49	25, (20.8%)
50-59	36, (30.0%)
60 and over	29, (24.2%)
Race*	N = 124
White	42, (33.9%)
Black or African American	77, (62.1%)
American Indian or Alaska Native	1, (.8%)
Hispanic or Latino	1, (.8%)**
Other	1, (.8%)
Highest level of education completed	N = 116
Less than high school degree	5, (4.3%)
High school degree or GED	33, (28.4%)
Some college, but have not graduated	27, (23.3%)
Two-year college degree	17, (14.7%)
Four-year college degree	34, (29.3%)

*Race was "check all that applied".

**Hispanic or Latino questionnaire item had an N = 119.

The majority of Cooking Matters participants were female (f = 106, 88.3%).

The age group with the largest representation was from 40-59 years old with a frequency of 61, accounting for 50.8% of the participants. The majority of the participants identified as black or African American (f = 77, 62.1%). The two most

prevalent highest education levels were high school (f = 33, 28.4%) and a four-year college degree (f = 34, 29.3%).

The social and demographic characteristics of individuals who completed the pre-survey only were compared to those who completed both the pre- and post-survey. From this comparison, the percent of individuals who completed from each age group, race, education level, and gender was able to be determined. Three-quarters of individuals who began the class carried through to completion. There was little significant difference seen between male completion (64.3% of the 14 participants completed) and female completion (75.5% of the 106 participants completed). Similarly, race did not appear to have a strong association with class completion. Approximately 76.2% of Caucasian individuals (n=42) who started the class completed it. Approximately 74% of African American individuals (n=77) who started the class completed it. The age group with the smallest percentage of completion was 18-29-year-olds, with 37.5% completed (n=8). The age group with the largest percentage of completion was 50-59-year-olds, with 83.3% completed (n=36).

Unlike the other categories, there was an potential association seen with educational attainment and class completion. There was a steady increase in class completion with higher educational attainment, with one outlier – who completed some college, but did not graduate, as seen in Table 2.

	Less than a high school degree	High school degree or GED	Some college	Two-year college degree	Four-year college degree
Completion	60.0%	63.6%	85.2%	64.7%	88.2%
Count	5	33	27	17	34

Healthy Food Behaviors

Table 3: Healthy food behaviors					
	Time 1 Mean (sd)	Time 2 Mean (sd)	Diff. [95% CI]	Paired t (p)	Wilcoxon (p)
How often do you eat fruit like apples, bananas, melon, etc.? N = 89	2.970 (1.123)	3.180 (1.040)	.210 [-.029, .456]	1.747 (.084)	-1.863 (.062)
How often do you eat green salad? N = 89	2.570 (.903)	2.820 (.899)	.250 [.051, .444]	2.500 (.014)	-2.419 (.016)
How often do you eat any kind of potatoes that aren't fried? N = 87	1.990 (.755)	2.130 (.775)	.140 [-.052, .328]	1.443 (.153)	-1.598 (.110)
How often do you eat refried beans, baked beans, pinto beans, black beans, or other cooked beans? (Do not count green beans or string beans.) N = 90	2.020 (.807)	2.070 (.872)	.050 [-.151, .240]	.451 (.653)	-.172 (.863)
How often do you eat other non-fried vegetables like carrots, broccoli, green beans, or other vegetables? N = 90	2.760 (1.053)	3.040 (.982)	.280 [.087, .491]	2.847 (.005)	-2.669 (.008)
How often do you drink 100% fruit juices like orange juice, apple juice, or grape juice? (Do not count punch, Kool-aid, sports drinks, or other fruit flavored drinks) N = 90	2.260 (1.268)	2.430 (1.152)	.170 [-.090, .445]	1.321 (.190)	-1.288 (.198)
How often do you drink bottle or glass of water? (Count tap, bottled, and sparkling water.) N = 90	4.520 (.838)	4.430 (.995)	-.090 [-.279, .101]	-.929 (.355)	-.949 (.343)
Healthy Food Behaviors Scale N = 85 (α=.576)	2.723 (.540)	2.864 (.480)	.141 [.026, .257]	2.432 (.017)	-2.811 (.005)

According to the findings shown in Table 2, the largest change was seen in the tendency to eat non-fried vegetables (Diff = .280, [.087, .491], $p = .005$). Other behaviors changed a fairly moderate amount, such as tendency to eat fruit (Diff = .210, [-.029, .456], $p = .084$) and salad (Diff = .250, [.051, .444], $p = .014$); however, even more notable is the one behavior that did not see an improvement – drinking water saw a slight decrease (Diff = -.090, [-.279, .101], $p = .355$).

From the focus groups, many improvements in healthy food behaviors were seen. On multiple occurrences, individuals shared their experiences trying new foods. The individuals reported that these new foods resulted in an impact on both the individuals in their families. The recipes were most effective as forms of foods that the participants normally eat, with pizzas, cornbread, desserts, and seasonings being some of the most notable. One individual recalled of going through the Cooking Matters classes with her nine-year-old son that, “a lot of the stuff we cooked, he actually would taste, even if he didn’t like it, he’d still try it, but some of the stuff he did like.” Another individual recalled that one of her children was displeased with a lot of the recipes, but with the cauliflower rice, specifically, things were different, “she had no clue, and I didn’t tell her until after she ate all of it, and she loved it”. One grandmother recalled the effect her new recipes had on her grandchildren saying that they initially refused her food; however, “they will try it, and if they don’t like it, they’ll send it home with me, but they’ll let it stay if they like it.”

The recipes could only go so far, though. One major issue seen by the individuals was the small number of recipes provided by them with one individual

saying “you know, eventually, you get tired of eating the same thing and we only had ‘X’ amount of recipes that we tried”. Another issue with the recipes was a lack of variety. For example, some of the participants were either going through the keto diet or just coming out of Whole 30, both of which are highly specialized. Because of this among other dietary restrictions, these participants were even further limited in what they saw as an already small repertoire of recipes.

Beyond the implementation of adjusted, healthier recipes is the use of new methods of cooking. Nine focus group participants reported changing their methods of cooking, including more steaming and baking as well as less frying, with one saying that by baking or broiling her ground beef she is able to “pull a lot more of that grease out”. Another individual noted making changes to their normal habits. They said, “I don’t usually fry, but if I do, I don’t use any flour.” On two other occasions, participants mentioned making the switch to an airfryer, rather than an oil fryer. As one participant noted, the classes also taught the individuals “to cook different than we have been at home. You don’t fry everything”. This comment was referring to the development of skills such as baking and broiling, as previously mentioned.

The participant’s eating habits were affected in a multitude of ways by the classes. One participant reported “I ate food I didn’t think I’d eat and tried very new things! I’m trying to cook healthier now. I don’t always, but I try.” Another participant reported similarly, “Things that I didn’t think I’d eat... I actually ate.”

Healthy Food Frequencies

Table 4: Healthy Food Frequencies					
	Time 1 Mean (sd)	Time 2 Mean (sd)	Diff. [95% CI]	Paired t (p)	Wilcoxon (p)
When you have milk, how often do you choose low-fat skim milk (skim or 1%)? N = 86	2.870 (1.540)	3.070 (1.629)	.200 [-.081, .476]	1.410 (.162)	-1.299 (.194)
When you eat dairy products like yogurt, cheese, cottage cheese, sour cream, etc., how often do you choose low fat or fat-free options? N = 88	3.030 (1.245)	3.310 (1.325)	.280 [.001, .545]	1.992 (.049)	-2.168 (.030)
When you eat grain products like bread, pasta, rice, etc., how often do you choose whole grain products? N = 88	3.160 (1.154)	3.600 (1.140)	.440 [.188, .698]	3.458 (.001)	-3.330 (.001)
How often do you choose low-sodium options when you buy easy-to-prepare, packaged foods like canned soups or vegetables, pre-packaged rice, frozen meals, etc.? N = 86	2.650 (1.186)	3.370 (1.179)	.720 [.452, .989]	5.339 (≤.001)	-4.758 (≤.001)
When you buy meat or protein foods, how often do you choose lean meat or low-fat proteins like poultry or seafood (not fried), 90% or above lean ground beef or beans? N = 89	3.510 (1.139)	3.960 (1.054)	.450 [.273, .626]	5.050 (≤.001)	-4.475 (≤.001)
When you eat at fast-food or sit-down restaurants, how often do you choose healthy foods? (Healthy foods include fruits, vegetables, whole grains, lean meats, low-fat or fat-free dairy, and water.) N = 83	3.140 (1.095)	3.430 (1.106)	.290 [.044, .534]	2.350 (.021)	-2.436 (.015)
Healthy Food Frequency Scale N = 84 (a=.676)	3.008 (.800)	3.383 (.963)	.375 [.221, .529]	4.851 (≤.001)	-4.513 (≤.001)

Under the “healthy food frequencies” category, it was seen that there was a substantial increase in the tendency of participants to choose low-sodium options (Diff = .720, [.452, .989], $p \leq .001$) as well as in the tendency to choose lean poultry, seafood, lean ground beef, or beans (Diff = .450, [.273, .626], $p \leq .001$). There is a fairly moderate increase in most of the other healthy food frequencies; however, it is very interesting that the upper limit of this is choosing whole grain pasta, rice, bread, etc. (Diff = .440, [.188, .698], $p = .001$).

Two changes in dietary norms were greatly adjusted for many of the focus group participants. One of these examples is a switch from ground beef to ground turkey. A participant reflected on the classes, saying “it was the first time I had used ground turkey, and it was delicious, and now I do ground turkey a lot.” Another participant emphasized this sentiment by discussing a time that she shared the information from the classes with some women at the grocery store. She told them “oh, yeah, y’all should try this”. The change to ground turkey was one of the specific cases that the individuals reported being able to implement fairly easily in their lives.

Another example of more successfully occurring changes is a decrease in salt intake. Individuals were able to learn to make their own seasonings and control the amount of salt inside. They were also able to realize how unnecessary salt was in a lot of situations. These dietary changes were seen markedly through the participants’ health. One reported “If I eat right, I can tell all the difference in the world. My knees don’t hurt and my feet don’t swell. It’s altogether different.” Another individual discussed a decrease in inflammation.

Unhealthy Food Behaviors

Table 5: Unhealthy food behaviors					
	Time 1 Mean (sd)	Time 2 Mean (sd)	Diff. [95% CI]	Paired t (p)	Wilcoxon (p)
How often do you eat french fries or other fried potatoes like home fries, hash browns, or tater tots? N = 90	2.160 (.820)	2.090 (.729)	-.070 [-.244, .110]	-.748 (.456)	-.736 (.462)
How often do you eat a meal from a fast-food or sit-down restaurant? (Consider breakfast, lunch, and dinner.) N = 90	2.400 (.958)	2.220 (.700)	-.180 [-.380, .025]	-1.745 (.084)	-1.724 (.085)
How often do you drink a can, bottle, or glass of regular soda or pop, sports drink, or energy drink? (Do not count diet or zero calorie drinks.) N = 87	2.400 (1.401)	2.260 (1.243)	-.140 [-.404, .128]	-1.1029 (.306)	-1.072 (.284)
Unhealthy Food Behaviors Scale N = 87 (a=.596)	2.330 (.834)	2.210 (.637)	-.120 [-.269, .024]	-1.667 (.099)	-1.194 (.233)

Within the “unhealthy food behaviors”, we see a decrease in all behaviors; however, we do not see a substantial decrease in any of them. The most substantial decrease was seen in people going to restaurants (Diff = $-.180$, [$-.380$, $.025$], $p = .084$); however, there was barely any change in how often individuals ate french fries or other fried potatoes (Diff = $-.070$, [$-.244$, $.110$], $p = .456$), which is interesting because of the relatively small increase in eating potatoes that are not fried seen in the healthy eating behaviors section (Diff = $.140$, [$-.052$, $.328$], $p = .153$).

One major change in unhealthy behaviors that was reported more in the focus groups but was not as clear in the statistical results was a decrease in soda intake. This was reported on four different occasions. One woman even reported that she has been slowly decreasing the amount of sugar in her family’s tea to try to decrease the amount of sugary drinks consumed in her house. Two individuals reported that they have stopped buying sodas altogether, even for their family members. “They have to go to the store themselves and go get their drink, but I don’t buy them,” one said. The main influence in this change was the large amount of sugar that they had been shown. One said it was “eye-opening”. Another said he took pictures of the pile of sugar that was shown in the class to carry home to show his wife because he was so surprised.

Negative Perceptions of Cooking

Table 6: Negative Perceptions of Cooking					
	Time 1 Mean (sd)	Time 2 Mean (sd)	Diff. [95% CI]	Paired t (p)	Wilcoxon (p)
Cooking takes too much time. N = 89	2.340 (1.157)	2.240 (1.077)	-.100 [-.357, .155]	-.785 (.435)	-1.242 (.214)
Cooking is frustrating. N = 89	2.170 (1.058)	2.040 (1.043)	-.130 [-.308, .061]	-1.330 (.187)	-1.354 (.176)
It is too much work to cook. N = 88	2.160 (1.071)	2.050 (.993)	-.110 [-.342, .115]	-.990 (.325)	-1.277 (.202)
Negative Perceptions of Cooking Scale N = 88 (a=.886)	2.220 (.991)	2.110 (.914)	-.110 [-.284, .072]	-1.186 (.239)	-1.1034 (.301)

Under the “negative perceptions of cooking” heading, changes were similar across all three questions. People seemed to feel that cooking was less

frustrating (Diff = $-.130$, [$-.308$, $.061$], $p = .187$); however, a difference of $.130$ is not exactly substantial. Responses to “Cooking takes too much time” (Diff = $-.100$, [$-.357$, $-.155$], $p = .435$) and “It is too much work to cook” (Diff = $-.110$, [$-.342$, $.115$], $p = .325$) changed similarly. The consistent change in the attitudes of the participants is notable, as well as the fact that all three decreased; however, it seems there could be more done to improve the way that the participants feel about cooking.

In the classes, time management skills were emphasized, and two people continued to struggle with these battles. One mom reported in the focus group that she “fell back into the bad routine of going to McDonald’s”. Due to her busy schedule, she faced this ongoing problem, which was similar to the behavior she described of herself prior to the class.

The cooking skills taught in the class were reportedly very valuable to the focus group participants. One of the frequently mentioned skills was the ability to cut things, whether this be dicing vegetables or cutting bell peppers, which was mentioned twice. This was not shared across all classes, though. One individual reported to the group that her daughter specifically was not able to learn many skills that she had entered the class hoping to. She reported that her daughter was not able to learn how to chop vegetables and ended up very disappointed and did not complete the class.

Shopping Behaviors

Table 7: Shopping Behaviors					
	Time 1 Mean (sd)	Time 2 Mean (sd)	Diff. [95% CI]	Paired t (p)	Wilcoxon (p)
How often do you compare prices before you buy food? N = 90	3.880 (1.198)	4.200 (1.192)	.320 [.067, .577]	2.513 (.014)	-2.426 (.015)
How often do you plan meals ahead of time? N = 88	3.090 (1.141)	3.490 (1.050)	.400 [.176, .619]	3.569 (.001)	-3.491 (\leq .001)
How often do you use a grocery list when you go grocery shopping? N = 87	3.550 (1.292)	3.690 (1.232)	.140 [-.101, .377]	1.146 (.255)	-1.073 (.283)
How often do you worry that your food might run out before you get money to buy more? N = 85*	3.505 (1.250)	3.635 (1.299)	.130 [-.177, .436]	.840 (.403)	-.907 (.365)
How often do you use the nutrition facts on food labels? N = 87	2.870 (1.301)	3.390 (1.155)	.520 [.281, .754]	4.351 (\leq .001)	-3.952 (\leq .001)
Shopping Behaviors Scale N = 79 (a=.584)	3.410 (.766)	3.680 (.756)	.270 [.109, .433]	3.335 (.001)	-3.141 (.002)

*This question was reverse coded to ensure that the trend of the scale was not skewed.

Shopping behaviors (Diff. = .270, [.109, .433], $p = .001$) overall were more affected than both the unhealthy food behaviors and the cooking attitudes. It was seen that many individuals had success applying many of the skills addressed in the classes; however, grocery list use (Diff. = .140, [-.101, .377], $p = .001$) and worry about running out of food before getting money to buy more (Diff. = .130, [-.177, .436], $p = .403$) were not significantly influenced.

One aspect of the class that appeared to be influential concerned the shopping skills that were taught. These skills included reading labels, budgeting,

and reading ingredients. Reading labels was mentioned 13 times by 10 different people. These people discussed how important this skill has been. This was also regarded by an individual as “eye-opening”. Another individual said she finds herself in the store looking at something saying “ooh, let me see what the label says”. This was followed by another individual saying “yes! You spend a lot of time in there reading labels.”

These label reading skills led to understanding the foods that individuals were buying on a much deeper level. They learned that if sugar is listed as the first 5 ingredients, it is a main ingredient. They also learned that “whole grain” on the packaging does not necessarily mean “whole grain” - further reading is needed to confirm or deny this claim.

The individuals also learned about budgeting their healthy eating. One component of the class was a shopping activity that allowed the participants to practice their budgeting skills. They practiced making a shopping list and shopping for these goods. One individual described that it was “amazing how much you’d buy with the money!” These skills were very helpful for the participants; however, some of the recommended healthier ingredients were very pricey, including the alternative flour and sugar.

Frequency of Eating Behaviors

Table 8: Frequency of Eating Behaviors					
	Time 1 Mean (sd)	Time 2 Mean (sd)	Diff. [95% CI]	Paired t (p)	Wilcoxon (p)
How often do you eat breakfast within two hours of waking up? N = 89	3.360 (1.359)	3.490 (1.391)	.130 [-.125, .395]	1.029 (.306)	-.959 (.337)
How often do you eat food from each food group every day? (Food groups include dairy, grains, fruits, vegetables, and protein.) N = 89	3.240 (1.056)	3.660 (.929)	.420 [.175, .679]	3.369 (.001)	-3.013 (.003)
How often do you make homemade meals from scratch using mainly basic whole ingredients like vegetables, raw meats, rice, etc.? N = 90	3.220 (1.234)	3.420 (1.199)	.200 [-.020, .420]	1.804 (.075)	-2.002 (.045)
How often do you adjust meals to include specific ingredients that are more budget-friendly, like on sale or in your refrigerator or pantry? N = 90	3.360 (1.074)	3.760 (.964)	.400 [.157, .643]	3.273 (.002)	-3.126 (.002)
How often do you adjust meals to be more healthy, like adding vegetables to a recipe, using whole grain ingredients, or baking instead of frying? N = 90	3.260 (1.127)	3.630 (1.075)	.370 [.148, .608]	3.266 (.002)	-3.175 (.001)
Eating Behaviors Scale N = 88 (a=.721)	3.280 (.827)	3.590 (.823)	.310 [.174, .435]	4.636 (≤.001)	-4.090 (≤.001)

The highest change was seen in individuals eating food from each food group every day (Diff. = .420, [.175, .679], $p = .001$), which would not be directly related to this assertion; however, the next two are frequency of adjusting meals to include more budget friendly ingredients (Diff. = .400, [.157, .643], $p = .002$)

as well as adjustments to make meals more healthy (Diff. = .370, [.148, .608], $p = .002$). The two that were seen to have very small influences on the participants, on the other hand, were “How often do you eat breakfast within two hours of waking up?” (Diff. = .130, [-.125, .395], $p = .306$) and “How often do you make homemade meals from scratch using mainly basic whole ingredients like vegetables, raw meats, rice, etc.?” (Diff. = .200, [-.020, .420], $p = .075$).

Six focus group participants reported a decrease in portion sizes and a redirected attention on food groups. Some of these individuals implemented this by buying smaller plates or pans or giving smaller servings. Participants also reported being able to balance their meals more by using different food groups in their meals and planning the meals by food groups. One individual bought a “my plate”. It is a plate designed to help you ration your portions of each food group and ensure that you get plenty of each one; however, she went on to say “I mostly fill it up with vegetables because I’m not really a meat eater.”

Cooking Confidence

Table 9: Cooking Confidence					
	Time 1 Mean (sd)	Time 2 Mean (sd)	Diff. [95% CI]	Paired t (p)	Wilcoxon (p)
How confident are you that you can use the same healthy ingredient in more than one meal? N = 90	4.210 (.977)	4.530 (.737)	.320 [.117, .528]	3.116 (.002)	-2.822 (.005)
How confident are you that you can choose the best-priced form of fruits and vegetables (fresh, frozen, or canned)? N = 89	4.070 (1.064)	4.560 (.690)	.490 [.288, .700]	4.767 (≤.001)	-4.166 (≤.001)
How confident are you that you can use basic cooking skills, like cutting fruits and vegetables, measuring out ingredients, or following a recipe? N = 89	4.360 (.956)	4.700 (.611)	.340 [.139, .535]	3.380 (.001)	-3.312 (.001)
How confident are you that you can buy healthy foods for your family on a budget? N = 89	4.120 (1.116)	4.610 (.633)	.490 [.285, .682]	4.834 (≤.001)	-4.276 (≤.001)
How confident are you that you can cook healthy foods for your family on a budget? N = 89	4.060 (1.181)	4.620 (.612)	.560 [.349, .775]	5.243 (≤.001)	-4.555 (≤.001)
How confident are you that you can help your family eat more healthily? N = 90	4.210 (1.086)	4.600 (.716)	.390 [.165, .612]	3.457 (.001)	-3.264 (≤.001)
Cooking Confidence Scale N = 86 (α=.856)	4.160 (.846)	4.610 (.514)	.450 [.319, .592]	6.643 (≤.001)	-6.076 (≤.001)

For the final category, “cooking confidence”, all of the changes were fairly substantial in magnitude, ranging from the lowest, “How confident are you that you can use the same healthy ingredient in more than one meal?” (Diff. = .320,

[.117, .528], $p = .002$), to the highest, “How confident are you that you can cook healthy foods for your family on a budget?” (Diff. = .560, [.349, .775], $p \leq .001$).

From the focus groups, it was seen that, while at times confidence increased due to improved skills and lessons learned, a lot of the time, confidence, and ability to implement changes were diminished by family members being unwilling to cooperate and try some of the changes. One individual reported pushback from his wife, saying that she “does not see the value in making the changes”. Another experienced similar trouble from her mother, saying “she will try it, and she will like it, but then say ‘now don’t cook no more of that!’”. Finally, a third participant reported her sons would not eat the foods that she cooked due to them being “raised on fast food”.

Figure 1: Scale Means, Pre vs Post

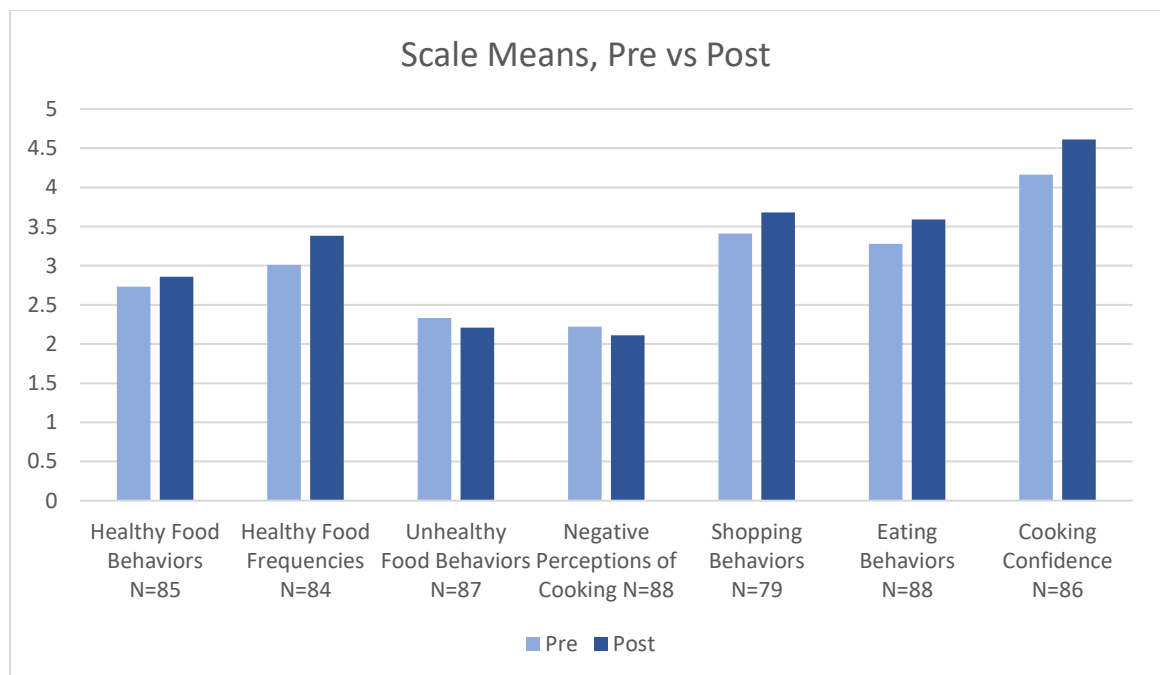


Table 10: Summary Table for Focus Groups	
Healthy Food Behaviors	Changed methods of cooking, ex. more steaming and baking, less frying, etc. (f = 9)
Healthy Food Frequencies	Substitutions and adjustments to normal meals were prominent. (f = 17)
Unhealthy Food Behaviors	Decreased soda or pop intake (f = 3)
Negative Perceptions of Cooking	Continued to struggle with time management. (f = 2) Cooking skills from CM classes have made cooking easier (f = 5)
Shopping Behaviors	Struggled with expensive alternative foods (f = 3) Learned to read labels (f = 13) Realized true contents of meals, ex. fat, grease, and lard (f = 7)
Eating Behaviors	Decreased portion sizes Redirected focus on food groups (f = 6)
Cooking Confidence	Struggled with pushback from loved ones (f = 5)

Two focus groups were performed. Total N = 20.

Discussion & Conclusion

Through this study, at the very least, partial answers to each of the following were discerned: “How effective are the Cooking Matters classes in causing lifestyle changes in the participants?”, “What practices have had the greatest effect on the participants and why?”, and “Which practices are falling short, and how could this be corrected?” From the data collected and analyzed regarding each topic, potential answers to the final research question, which regards further generalization of the findings, have been formed. It should be noted; however, that it is not feasible to claim that all of the issues faced by the James C. Kennedy Wellness Center’s Cooking Matters classes have been solved. Data have pointed us in the direction of potential improvements; however, there are some limitations to the work we have been able to do thus far.

From the data presented, it can be seen that there are parts of the teachings from Cooking Matters that are imperative for individuals in the Mississippi Delta, such as substituting unhealthy eating behaviors for healthy ones and building confidence, as well as parts that are not nearly as necessary or beneficial for this population, such as the emphasized importance of using alternative sugars and flour due to their lack of availability and/or affordability to

this population. This information can be used in the future to shape and personalize the classes, specifically for the James C. Kennedy Wellness Center, as well as for similar populations to that of Charleston, MS. On an individual basis, this information can also be used to present realistic changes that people struggling with their health can make to strive towards improvement. The changes in behaviors that have been seen to be the most implemented include switching to lean-meats, low sodium options, and the importance of reading labels when selecting foods. A few of the changes that were the least implemented include increased water and bean consumption as well as decreased fried potato consumption.

Healthy Food Behaviors

Drinking water was a very important skill that did not seem to be received as well by the participants of Cooking Matters. To help combat this issue, there are many structured plans that are often used to help people stay on track which could be presented to the class. These often take forms by making schedules. Also, when the participants receive their cooking utensils, it could be beneficial to include a water bottle in the pack. Another skill that was ill received was implementation of beans into the diets of the individuals. This lack of implementation is a challenge that is often faced. To acquire the nutrients that beans have to offer, many people choose to mask them using other foods. One example is using them in burgers along with ground beef.

Healthy Food Frequencies

As seen in Table 3, adjusting current behaviors slightly, rather than making drastic and sudden changes, showed to be the most effective way to implement new skills. This conclusion was supported by the great difference we saw in behaviors such as switching to whole grains, as well as low-sodium options. Furthermore, in the focus groups, participants stated that the recipes that they got the most use out of were those that substituted for things they ate often already – such as cauliflower crust pizza, cornbread, and seasonings. This information should be used in the future to emphasize the importance of starting small when making lifestyle changes. The individuals were more likely to continue the new behaviors when the changes did not lead to any major disruption in their current lifestyle. This could be largely due to the importance of socialization in the development of people’s health choices, as noted by Cockerham (2005) and the difficulty faced when modification of these behaviors occurs. In future classes, it would be beneficial to provide more substitute recipes and continue the emphasis on adjusting current behaviors.

Unhealthy Food Behaviors

When trying to stop unhealthy behaviors, there was a consistent decrease seen in Table 4 throughout all three behaviors; however, it was not nearly as large of a difference as seen when modifying behaviors to become healthier. There are many reasons this could be, including people being stuck in their ways, simply not wanting to make the change, and craving the unhealthy behaviors. These were not the main issues reported in the focus groups, though. On five occasions, the individuals in the classes reported that they struggled to

stop unhealthy behaviors due to push back from their loved ones. One individual reported that her son grew up eating mostly fast food, which has resulted in that being the main type of food that he enjoys. Another individual reported that her mother would be displeased with her meals that she cooked unless she included some kind of starch. Finally, we had a third individual whose family members insisted upon having sweet tea in the house, which made it hard for her to avoid sugary beverages, as recommended.

As previously discussed through Gatto's (2017) article in the literature review chapter, family behaviors and youth diets have been found to have lasting effects on an individual's body, as well as their eating habits. Furthermore, social interactions have substantial influences on the health choices made by individuals, as substantiated by Cockerham (2005). In the future, this pushback could be combatted by the Cooking Matters classes by involving the families more in the classes. This could take form through family classes, or simply by permitting the participants to bring a family member or other loved one to class with them once. This would allow loved ones to learn the information that the participant is trying to help convey in a more formal setting. Another way that the Cooking Matters classes can fight back against family opposition is by discussing potential ways to handle this in the classes. The family-oriented nature of the South has made approval of loved ones very important for those within the population, resulting in this having major effects on the people of Charleston, specifically.

Despite the one individual reporting the struggle with her family to cut back on sugary drinks, on four other occasions, focus group participants reported this being very influential for their families. Those who had success in implementation of this were commonly the ones in control of the grocery shopping. This importance of control relates directly back to Cockerham's Health Lifestyles Paradigm. Cockerham notes that "health lifestyles are not the uncoordinated behaviors of disconnected individuals, but are personal routines that merge into an aggregate from representative of specific groups" (Cockerham, 2005). These collective behaviors can further lead to an accumulation of unhealthy behaviors. For example, Hinote and Wasserman (2017) state that individuals who do not regularly brush their teeth are also less likely to wear a seatbelt. While these two behaviors seem unrelated, and they do not exhibit a causal relationship, they are related by an underlying disposition – health fatalism – which can be defined as "feelings of powerless or meaninglessness of one's own efforts, often accompanied by notions of fate or destiny" (Hinote & Wasserman, 2017). From this, the importance of control in individuals' lives can be even further emphasized to help avoid this health fatalism and encourage positive notions of fate and destiny.

Negative Perceptions of Cooking

Although in Table 5 there is a reported decrease in individuals who believed that "cooking takes too much time", this proved to be one of the most discussed topics within the focus groups. The individuals discussed in the findings who struggled most with this in the classes, such as the woman with the

two young kids, who often picked up fast food for convenience, could have benefited greatly from teachings geared specifically towards quick, healthy meals. Preparing meals for the whole week at the beginning of the week, for example, is one way that was taught to combat this; however, this is impractical for people much of the time because individuals grow tired of eating the same things repeatedly. Because of this, in addition to teaching meal preparation in bulk, it could be useful to teach quick recipes to the class participants, as well as teaching them skills to make cooking go faster, such as working on multitasking skills, so they are able to successfully make recipes in less time.

Shopping Behaviors

Individuals showed a great understanding of the importance of reading labels, as well as comparing prices of foods; however, in the classes they were also taught about some alternative sugars and flours, which turned out to be extremely expensive, which is a challenge commonly faced in places with limited food options. For this reason, it seems as though individuals would benefit more from learning skills to decrease the amount of sugar added to their foods or other, less expensive alternatives.

Frequency of Eating Behaviors

No focus group participants mentioned anything about breakfast, leading to the conclusion that it was not discussed heavily in the courses; however, breakfast is believed to have great positive effects for some individuals. There are many easy and quick breakfast options that could be discussed in the future in these courses, such as nuts, plain yogurt with berries, sausage, and eggs, just

to name a few. The importance of pushing breakfast should not be very heavily focused on; however, as there has been new research, which shows the benefits of fasting for both weight loss and improvements in inflammation and blood sugar control.

Other eating behaviors had a great effect on the participants, such as eating food from each food group every day and adjusting meals to include more budget friendly or healthy ingredients. This further exemplifies the benefits that the participants gained from the cooking and shopping skills taught in these classes. These skills were able to increase the participants' confidence in their abilities, and, thus, allowed them to be more thoughtful in the kitchen.

Cooking Confidence

The cooking skills in some of the classes were reportedly useful, as reported by five individuals; however, others did not get the same experience. While in the south, much of the time individuals spend time with their loved ones learning to cook, this is not true across the board. It is also often seen that individuals will learn unhealthy behaviors from their loved ones, ultimately exacerbating the problem even further. Because of this, individuals being taught skills such as cutting bell peppers and other vegetables could prove very helpful and assuring the occurrence should become a priority.

Cooking confidence increased substantially in all fields, which is both positive and negative. This is good because it is pleasing to see that the individuals did feel as though they learned a substantial amount and felt they could apply the skills in the future. It is challenging; however, because the

individuals were not able to do so. It can be seen through the drastic differences in the scales that, although the knowledge was conveyed, application was a large struggle. I hope that making implementation more feasible through some of the ways previously listed, the increase in confidence can be reflective of the influence the classes have on the participants' behaviors in the future.

Further Application

This study should be used to inform populations similar to that of Charleston, MS. The James C. Kennedy Wellness Center serves a broad population, and through the demographic characteristics of the Cooking Matters classes, it can be seen that the majority of the participants are African Americans between the ages of 40 and 59 years old. Much of the Mississippi Delta population is characterized as having lower levels of education and lower incomes. These data can be used to help inform service to populations similar to this, as well as disadvantaged people and places more generally.

Furthermore, the results can be used to inform beyond Cooking Matters into a more general sense of various populations. It can help to show individuals where to start when entering their weight loss journey, as well as show other cooking classes the barriers that individuals in rural communities face that are otherwise not considered or can be over looked.

The research conducted specifically pinpoints the significant strides towards healthy eating that accommodate adjusting behaviors that people already do. It has been shown that individuals are much less likely to implement new behaviors or cease behaviors in their daily lives; however, adjusting

behaviors allows the individuals to take small steps towards healthier life decisions. This is probably a result of the importance of early socialization of food and health behaviors, which is experienced very early in life. Furthermore, this information about the importance of early intervention in unhealthy behaviors could also serve as beneficial information for parents of children participating in interventions, such as Cooking Matters.

This research is also important simply because of the significance of researching these programmatic interventions across rural and urban areas in order to produce better results of future interventions. Furthermore, the Delta presents a rural location with a sizable African American population, which is an underrepresented population in research, leading to further importance of studies within these populations.

Limitations to our Research

One major limitation to our research is the small sample size used. I believe that due to our broad range of demographic characteristics, our findings can be indicative of the population; however, further, similar research would be useful to prove or disprove this idea. It would also be beneficial to be able to have a comparison group in further research.

It would be beneficial to point further research towards how the availability of fresh food also effects the individuals in this population. It would also be helpful to get more specific qualitative data, possibly from more focus groups or food diaries, about why some of the behaviors, specifically such as increased water intake and eating breakfast within two hours of waking up, were less

effective, since there was so little data collected with regards to these behaviors. Furthermore, statistical analysis can be continued in the future to include an evaluation of differences across demographic characteristics within the sample.

Another potential route to take with this study could be to evaluate opinions of the families to try to further explore the dynamic seen in that aspect of life, as well as the challenges faced within it. This could be done through surveys, for example, at the end of the cooking matters courses to see the families' perspectives on the skills learned by their loved one.

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