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### Nutritional Cooking Program with Girls Inc., Taunton, MA

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*Bridgewater State University*

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Nutritional Cooking Program with Girls Inc., Taunton, MA

Chantel Almanzar

Submitted in Partial Completion of the  
Requirements for Commonwealth Honors in Health and Kinesiology

Bridgewater State University

5/4/2022

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### **Abstract**

As a member of the Institutional Review Board-approved research team comprised of Dr. Maura Rosenthal, Dr. Angela Bailey, and Christina Elderbee, I led a six-week community-based health program that included cooking lessons for girls aged 10 to 13. I taught girls how to prepare healthful foods that they may cook with their family and friends at home. The larger project, Building Equity Through Collaboration with Girl's Inc., aims to study the outcomes of girls' participation in after school and summer camp programs in 2021 and 2022. One part of this research, which intends to learn more about girls' current and future interests in physical activity and health programming, was developed with my help. This cooking program can teach girls how to love themselves regardless of their circumstances and how to take care of their bodies to stay healthy. The relevance of this program is backed up by Bristol County's health statistics. In terms of health outcomes and variables, Bristol County is listed as one of the least healthy counties in Massachusetts. For example, the physical inactivity among adults in the county is 24% and 29% of adults suffer from obesity which unfortunately results in a huge health behavior challenge (County health rankings & Roadmaps, 2022).

*Keywords:* Cooking program, Nutrition, Girls Inc., Health, Obesity

## **Introduction**

Nutrition plays a huge role in a person's diet. Teaching children at a young age what a balanced meal is and looks like will provide them with the knowledge of how to take care of their bodies for the future. Eating healthily doesn't have to be boring; it should seem like a way of life that allows people to enjoy their favorite foods in moderation. People living in low-income communities have more limited access to healthy foods because they have so many fast-food places near them. According to The Food Trust, 2.8 million individuals in low-income areas of Massachusetts, including more than 700,000 children and 523,000 seniors, do not have access to grocery stores (Massachusetts Food Trust Program, 2020.) Chain and independent grocery stores with yearly food sales of \$2 million or more were included in this analysis (Massachusetts Food Trust Program, 2020). Fast-food restaurants, like McDonald's and Taco Bell, are so accessible and cheaper for parents to afford, making it a huge problem for themselves and for their children which can result in obesity.

Obesity is a serious chronic condition that is on the rise in the United States (Centers for Disease Control and Prevention, 2021). Obesity is widespread, dangerous, and toxic to many populations. This epidemic is putting a strain on American families, with negative effects for overall health, medical costs, productivity, and military readiness (Centers for Disease Control and Prevention, 2021). Obesity can cause type 2 diabetes, heart disease, and cancer (Centers for Disease Control and Prevention, 2021). A good diet and regular physical activity can help people achieve and maintain a healthy weight starting at a young age and continuing throughout their lives. In the United States, childhood and teenage obesity is a serious problem that puts their

health at danger. Obesity impacted 14.4 million children and adolescents aged 2 to 19 years old in 2017-2018, with a 19.3% prevalence rate. Obesity was identified in 13.4% of children aged 2 to 5, 20% of children aged 6 to 11, and 21.2% of adolescents aged 12 to 19 (Centers for Disease Control and Prevention, 2021). Obesity was also detected in 25.6% of Hispanic children, 24.2% of non-Hispanic Black children, 16.1% of non-Hispanic White children, and 8.7 percent of non-Hispanic Asian children (Centers for Disease Control and Prevention, 2021).

According to a survey of 432,302 children aged 2 to 19, the rate of BMI (body mass index) growth during the COVID-19 pandemic nearly doubled when compared to a pre-pandemic period (Centers for Disease Control and Prevention, 2021). By multiplying a person's weight in kilograms by their height in meters squared, the BMI is calculated (Centers for Disease Control and Prevention, 2022). Those who were overweight or obese, as well as children in elementary school, saw the most rapid growth. Children with COVID-19 have a lower risk of major disease than adults, but they are nonetheless at risk of life-threatening illness (Centers for Disease Control and Prevention, 2021). COVID-19 could have a harmful impact on children who are overweight. Obese patients were 3.1 times more likely to be admitted to the hospital and 1.4 times more likely to develop a serious illness that required invasive artificial breathing or resulted in death (Centers for Disease Control and Prevention, 2021).

### **BMI For Children and Teens**

Because BMI is age and sex specific, it is sometimes referred to as BMI-for-age in children and teenagers. The BMI classifications for children and adults are different. As children grow older, their body composition varies, and it differs between boys and girls. As a result, BMI levels in children and teenagers must be compared to those of the same age and gender (Centers for Disease Control and Prevention, 2022).

A BMI of 22.9 kg/m<sup>2</sup> would be appropriate for a 10-year-old boy of average height (56 inches) and weight (102 pounds). The child's BMI would be in the 95th percentile, putting him in the obese category. This means the child's BMI is higher than 95% of the reference population's 10-year-old males (Centers for Disease Control and Prevention, 2022). CDC Growth Charts are widely used in the United States to assess children's and teenagers' size and growth patterns. In addition, BMI in Massachusetts schools is used to assist school nurses in determining whether a child is at a healthy weight when compared to other children of the same age and gender. The parents or guardians of each student who are screened are informed of the results (School BMI Screenings, 2022) Based on expert committee recommendations, the following table provides the BMI-for-age weight status groups and percentiles: (Centers for Disease Control and Prevention, 2022).

<b>Weight Status Category</b>	<b>Percentile Range</b>
<b>Underweight</b>	Less than the 5th percentile
<b>Healthy Weight</b>	5th percentile to less than the 85th percentile
<b>Overweight</b>	85th to less than the 95th percentile
<b>Obesity</b>	95th percentile or greater

### **The Effects of Poverty on Health in the United States**

In the United States, around 11 million children are poor meaning that there is not enough money to live comfortably or normally in society. One out of every seven children live in

poverty, accounting for more than a third of all people in the United States. This figure should be unfathomable in one of the world's wealthiest countries, but child poverty has persisted for decades (President et al., 2021). The United States is consistently ranked among the worst in terms of child poverty rates (President et al., 2021). According to government statistics, 14.4% of children under the age of 18 in the United States lived in poverty in 2019. Over a quarter of the population was impoverished or in danger of becoming impoverished, defined as living on 150 percent of the official poverty threshold (President et al., 2021).

In practically every race category, children of color are more likely to be poor than White children. Children of color, Hispanics, and American Indian and Alaskan Natives are more likely to be poor (AIAN) (President et al., 2021). While the overall poverty rate for Asian American and Pacific Islander children has decreased, disaggregated data from past years shows that considerable ethnic inequalities remain, with Bangladeshi, Pakistani, Burmese, and Hmong children, for example, having significantly higher rates (President et al., 2021). Locally, according to social and economic variables, Bristol County in Massachusetts has 16% of children living in poverty and 29% of children living in single-parent households (County health rankings & roadmaps, 2022). As previously mentioned, 24% of residents in the Bristol County lack physical inactivity which contributes to 29% of adults suffering from obesity (County health rankings & roadmaps, 2022). This data shows that living in poverty plays a huge role in adults and children lives especially in the town of Taunton, Massachusetts. In Taunton, 14.2% of residents were living in poverty in 2019, with 10.9% of white non-Hispanic residents, 17.9% of Black residents, 31.9% of Hispanic or Latino residents, 28.8% of residents of other races, and 36.6% of residents of two or more races living in poverty (Taunton, 2022).



As the COVID-19 outbreak and related recession continue to plague the United States, children are bearing America's disordered system. Since April 2020, the percentage of children with at least one unemployed parent has remained consistently higher than at the height of the Great Recession (President et al., 2021). More than four out of every ten children live in a family that is struggling to make ends meet, and 7 to 11 million children live in families where they are unable to eat enough food owing to financial limitations (President et al., 2021). When the pandemic forced schools to convert to distance and virtual learning along with the loss of school breakfast or lunch, it increased barriers to great education for low-income children and forced their parents, especially mothers, to choose between caring for their children and working (President et al., 2021). If measures are not implemented such as insurance coverage and employment opportunities, low-income and marginalized people, as well as their children, will be left behind. Child poverty has risen significantly since the coronavirus pandemic, according to some estimates (President et al., 2021).

Poor children are overrepresented among children of color, Hispanics, and Asians. While Black children make up about 14% of all children in the United States, they make up more than a quarter of all children living in poverty. Poverty rates among children differ by age group, with the youngest children being the most vulnerable (President et al., 2021). Poverty affects 15.5% of children under the age of five, 14.9% of children aged six to eleven, and 12.9% of adolescents aged twelve to seventeen (President et al., 2021). These inequalities can be attributed to increased costs associated with younger children, such as childcare, as well as the fact that parents tend to earn less early in their careers while their children are young (President et al., 2021).

Depending on the family arrangement, the percentage of children in poverty varies substantially. More than a third of children in unmarried women's households are poor, compared to only 6.4 percent of children in married couples' households (President et al., 2021). Children from low-income families have worse health outcomes than other children, with even brief periods of poverty associated with higher rates of asthma, malnutrition, trauma, and other chronic diseases (President et al., 2021). To afford health care, millions of families are also forced to make enormous financial sacrifices. Low-income families pay roughly twice as much for out-of-pocket medical expenses in employee-sponsored health plans as other families (President et al., 2021).

While 70% of low-income children are covered by Medicaid or other government-sponsored insurance (defined as living at or below twice the official poverty threshold), roughly eight percent of children in the United States are uninsured (President et al., 2021). That number is more than 15% in states that have not chosen to expand Medicaid under the Affordable Care Act, such as Texas and Wyoming (ACA) (President et al., 2021). In addition, specifically in Massachusetts, 2.5 percent of residents are uninsured (Explore uninsured in Massachusetts, 2021). The federal government must ensure that all children, regardless of their family's income, have access to affordable, high-quality health care. This would not only improve the health and prospects of such children, but it would also relieve their parents of financial stress (President et al., 2021).

While the sad child poverty rate in America is the result of a complicated collection of economic and social systems, the solutions are rather simple. Policymakers must ensure that all children have access to the essentials of life—food, shelter, and health care—while also relieving the financial strains that parents face when raising children (President et al., 2021). Millions of

children living in poverty do not have the luxury of waiting decades for changes to take effect (President et al., 2021). As a result, the need for more immediate assistance must be backed by a long-term strategy to reform policies that promote inequality, obstruct economic mobility, and prolong marginalization. Policy limits based on criminal justice system involvement, immigration status, ability, and other factors ensure that initiatives to eliminate child poverty fail (President et al., 2021).

### **Bristol County**

Reduced physical activity has been linked to several diseases, including type 2 diabetes, cancer, stroke, hypertension, cardiovascular disease, and early death, all of which are unrelated to obesity (County Health Rankings & Roadmaps, 2022). Inactivity is responsible for 11% of all premature deaths in the United States, accounting for over 5.3 million of the 57 million fatalities globally in 2008 (County Health Rankings & Roadmaps, 2022). Physical inactivity is also linked to health-care costs for circulatory illnesses. Physical activity promotes sleep, cognition, bone, and musculoskeletal health, and lowers dementia chances. Physical inactivity is linked to not only individual behavior but also community factors such as recreational spending, infrastructure availability, and poverty (County Health Rankings & Roadmaps, 2022).

There are a few major data points in Bristol County that should be improved. There are 19% adult smokers, 29% adult obesity, 24% physical inactivity, and 24% excessive drinking, according to the health behaviors category under areas to examine (County Health Rankings & Roadmaps, 2022). According to the social and economic aspects, 86 percent of residents have completed high school, 64 percent have some college, 3.7 percent are unemployed, and 16 percent of children live in poverty (County Health Rankings & Roadmaps, 2022). Due to the

environment and conditions in which people live, most of these data elements have an impact on nutrition.

### **Literature Review**

It is critical to teach children that there are no "good" or "bad" meals, and that everyone can eat whatever they want if they maintain a healthy balance between vegetables, proteins, and carbohydrates. A nutritional source that helps children balance their meals is MyPlate. The United States Department of Agriculture (USDA) developed MyPlate, an easy-to-follow food guide, to assist parents in preparing healthful, balanced meals for their children (Gavin, 2018). The plate is separated into pieces for vegetables, fruits, grains, and protein-rich dishes. Just looking at MyPlate tells one that vegetables and fruits should take up half of the plate, while grains and protein meals should each take up a quarter (Gavin, 2018). One is reminded to include milk or another dairy food (like cheese or yogurt) the daily meal plan with a side of dairy (Gavin, 2018). Because of their living circumstances, for example living in low-income communities, many families are unable to purchase fresh fruits and vegetables or prepare healthy meals. People's physical and mental health are influenced by their surroundings. Because of cost constraints, low-income residents' access to fresh fruits, and vegetables, is more limited than people who live in wealthier communities.

Fast-food outlets abound in communities like Taunton. For example, from Bridgewater to Girls Inc. in Taunton, there are about six fast-food restaurants, including KFC and McDonalds, on route 44 in Taunton. This is the same road that parents take to pick up their daughters from Girls Inc, making it easier for them to buy fast food because it is a less expensive and faster way to feed their children. Although, National Center for Education Statistics states that 47% of Taunton elementary students qualify for free and reduced meals (ACS School District Profile, 2015). The poisonous loop of obesity and poverty has the potential to cause diseases such as diabetes and obesity, among other things. Finding ways to include interventions that assist

families in need and provide them with assistance in purchasing healthier foods such as fruits and vegetables is one way to create a positive change in these communities. Throughout this paper, I will be summarizing studies and interventions aimed to help increase healthy food consumption in low-income communities and among people of color.

### **Cooking Interventions with Adults and Children**

Studies on cooking interventions with families have been published. The goal is for the intervention to have a good influence at the end so that families can continue to practice them at home. Melissa D. Olfert et al. (2019) covers the iCook 4-H study's effects, which is based on data acquired through an explorative ripple effect mapping focus group. The goal of this research is to combat childhood obesity by establishing a lifestyle change in the places where children spend most of their time, such as schools and homes (Olfert et al., 2019).

A multistate team of researchers from Maine, Nebraska, South Dakota, Tennessee, and West Virginia led the iCook 4-H experiment, which lasted two years (Olfert et al., 2019). The purpose of this project was to have a cooking program that consisted of a 6-session curriculum over a 12-week period with a focus on families cooking, eating, and playing together, to prevent childhood obesity (Olfert et al., 2019). The goal of the ripple effect mapping was to assess the influence of the iCook 4-H program on youth-adult treatment dyads quickly after the two-year intervention by looking at changes in participants, as well as peer and community settings (Olfert et al., 2019). Through small-group discussions, the ripple effect structure allowed youth-adult therapy dyads to reflect on the program's outcomes and generate a visual map of qualitative feedback (Olfert et al., 2019).

**Table 4. Categories and Subcategories of Participant Perceptions With iCook Program**

Category	Subcategory	Prominent Themes
1. Improved health	1.1. Playing with peers and family through exercise leads to better health	1.1a. Decreased electronic use with increased physical activity 1.1b. More fit, healthier, sleeping better, and laughing more 1.1c. Decreased medical expenses owing to better health and increased activity 1.1d. Increased physical activity and being active, causing more energy
	1.2. Better disease management leading to improved overall health	1.2a. Cooking with more fruits and vegetables, less salt, and more spices affects health positively 1.2b. New cooking methods can positively influence disease management and condition
2. Increased community involvement	2.1. Increased community involvement with friends and peer groups	2.1a. Friends spend more time together 2.1b. Influence other friends to participate and try new things 2.1c. Teach friends communication skills
	2.2. Increased community involvement through organizational groups	2.2a. More communication at home can stop bullying, and schools benefit 2.2b. Support local businesses more, which improves local production 2.2c. Create more jobs by spending more time in the community 2.2d. Role models at the community center for the kids 2.2e. Volunteer more in the community
3. Increased knowledge	3.1. Increased knowledge by trying new things	3.1a. Try new recipes and different flavors 3.1b. Role model now in the community as people see me trying new exercises 3.1c. Increased friendships and encourage friends to learn new games to play
	3.2. Increased knowledge through education and new experiences	3.2a. More cultural awareness and acceptance by trying different cuisines 3.2b. Look at food labels more 3.2c. Prepare own meals 3.2d. Learned to cook independently
4. Increased communication	4.1. Increased communication during mealtimes	4.1a. More fun at the table sharing joys and concerns 4.1b. No electronics now while eating 4.1c. Talk at the table more

(continued)

**Table 4. (Continued)**

Category	Subcategory	Prominent Themes
4. Increased communication	4.1d. Use conversation starters during dinner and learn more about each other	4.2a. Family line of communication is open more 4.2b. Family now hears what is going on throughout day—can help if needed 4.2c. Learn what the family thinks is fun and play together more 4.2d. Enhanced social skills enhances self-esteem, and boosts confidence
	4.2. Increased communication among friends and family	
5. Changed motivation	5.1. Motivation for better health	5.1a. Make better eating choices because it will affect health 5.1b. Television does not matter and am motivated to get away from the television more 5.1c. Happier, and happiness is contagious (better mental health) 5.1d. Looking into the future to be healthier and cook better
6. Financial mindfulness	6.1. Shopping smarter	6.1a. Save money and can donate money to other causes 6.1b. Family finances improve because use of shopping lists saves money 6.1c. Financially mindful of budget and now know how to include fruits and vegetables
	6.2. Health costs	6.2a. Being healthier will decrease medical expenses and insurance costs
7. Increased appreciation for family	7.1. Family connections	7.1a. Parents learn from child and child learns from parents (connection) 7.1b. Improved family member harmony leading to decrease in stress
	7.2. Responsibilities	7.2a. Increased child dependence and trust leads to child cooking dinner (appreciation expressed) 7.2b. Taking better care of pets and animals now

After conducting a direct content analysis, the key topic of participant perceptions of iCook 4-H emerged as acquiring new skills together by trying new things, family, and community development (Olfert et al., 2019). There were seven main categories and thirteen subcategories in total (see table above). As a result of applying the ripple effect method, the participants identified an underlying theme: gaining new abilities together by trying new things, which leads to positive individual, family, and community development. The participants' health, community involvement, participant knowledge, communication, motivation, financial mindfulness, and family appreciation all improved because of iCook 4-H (Olfert et al., 2019). Additionally, these themes were frequently linked to obesity prevention programming. Increased

communication, particularly at mealtimes, is linked to healthier youth and more family value meaning the importance of spending more time with your loved ones. Increased motivation, knowledge, and financial resources encourage actions that can help prevent obesity (Olfert et al., 2019).

In comparison to the iCook 4-H article, Francine Overcash et al. (2018) created a similar study that is based on a vegetable-focused cooking skills and nutrition program that affects psychosocial measures, vegetable enjoyment, diversity, and home availability in parents and children (Overcash et al., 2018). Olfert et al.'s (2019) iCook 4-H program, and the program described in this article have some similarities when it comes to focusing on healthy eating and obesity prevention. The impacts of a vegetable cooking skills program are more focused on incorporating more vegetables in both parents and children but also learning how to cook together, whereas iCook 4-H describes the effects of healthy foods while making them with family and seeing how it improves social skills between families as well as improvements physically and mentally.

Researchers used flyers and emails to recruit parent-child pairs from eleven low-income family-serving facilities in the Minneapolis - St Paul metropolitan area, such as subsidized housing, schools, churches, and community centers, three of which were Spanish speaking (Overcash et al., 2018). The child had to be between the ages of 9 and 12, their parent had to be the primary food preparer in the household, the family had to be on public assistance, they had to have access to a phone, the family had to have participated in cooking matters for families in the previous three years, and the parent had to be able to read, speak, and understand English or Spanish if the site was only in Spanish (Overcash et al., 2018). The original six cooking matters



for families' sessions' learning objectives were updated to include vegetables, different ways to prepare vegetables, and including vegetables in meals and many dishes.

Furthermore, the six 2-hour cooking skills and nutrition education sessions followed a specific format, which included a professional chef demonstrating a vegetable-focused recipe, parent and child pairs preparing a recipe under the guidance of the chef and nutrition educator, a nutrition educator presenting a nutrition education lesson, and participants eating the meal they prepared together (Overcash et al., 2018). Families were given a grocery bag with all the ingredients necessary to prepare a supper at home. Between September 2014 and June 2016, a total of 90 cooking/nutrition instruction sessions were held across 11 different host sites, with 103 parent-child pairs involved in the study (Overcash et al., 2018).

As a result, this approach improved parents' and children's psychological characteristics, as well as their culinary confidence. Hands-on and demonstration participation increased exposure to cooking processes and provided opportunities for practice, resulting in increased familiarity, talents, and confidence (Overcash et al., 2018). The program's strategy may have resulted in an increase in the number of vegetables tried by parents and children, indicating greater vegetable diversity, as well as increased vegetable availability at home. The vegetables distributed at the end of class allowed participants to become acquainted with the produce, potentially increasing their likelihood of purchasing it in the future (Overcash et al., 2018).

### **Communities of Color**

Being a person of color in the United States, in addition to living in low-income regions, has a negative impact on one's health due to a lack of possibilities such as job opportunities, discrimination, and racism. People of color must work ten times as hard as non-colored people to provide for their families. Being a person of color is a daily challenge since racism is still a

major issue, and we must continue to advocate for equal rights and what we believe in until things change. Children of color with obesity and other underlying health concerns face a significant number of health-related issues such as diabetes, heart disease, stroke, and even some type of cancer (Mayo foundation, 2021). Obesity must be reduced by a shift in these communities.

The first article written by Taylor Jamerson et al. (2016), examines the cardiovascular disease risk factors of Black and non-Black students who are enrolled in Project Healthy Schools, a school-based wellness program (Jamerson et al., 2016). Project Healthy Schools is a community/university cooperation that delivers instruction on health and environmental change for middle school students, according to the method. This program, which has been implemented in 68 middle schools, has five objectives that will help to minimize cardiovascular risk factors and promote long-term health (Jamerson et al., 2016). The first goal is to consume more fruits and vegetables; the second goal is to consume fewer sugary foods and beverages; the third goal is to consume fewer fast foods and fatty foods; the fourth goal is to engage in daily physical activity; and the fifth goal is to spend less time in front of a screen (Jamerson et al., 2016).

Project Healthy Schools offers ten interactive lessons on healthy habits that are delivered during students' advising periods, assemblies, and special school activities (Jamerson et al., 2016). In addition, the program offers various after-school events, field days, and classroom competitions to encourage physical activity and healthy habits (Jamerson et al., 2016). School instructors, Project Healthy Schools staff members, or volunteers present the educational portion of the event. Furthermore, Project Healthy Schools staff members work with school administrators and food service providers to promote healthier lunch and vending machine

options by increasing fruit and vegetable availability, introducing whole grains, and substituting fatty and high-sugar food products with healthier alternatives (Jamerson et al., 2016).

Different patterns of cardiovascular disease risk were found in the analysis between Black and non-Black sixth grade students at baseline. Although Black students had lower physical fitness than non-Black students, non-Black students have higher lipid profiles (Jamerson et al., 2016). The average BMI of Black students was higher, and a substantial percentage of them were obese or overweight. The rate was two times higher in non-Hispanic White children, 2.5 times higher in Hispanic children, and three times higher in Asian, Pacific Islander, Native American, and multiracial children (Jamerson et al., 2016). When compared to other racial groups, Black students had the greatest rate of obesity by eighth grade. Black students demonstrated a higher proclivity for unhealthy habits than non-Black classmates. There are several factors that contribute to these findings, including the fact that almost 65 percent of Black students in the survey sample attended Detroit schools, which is a low-income district (Jamerson et al., 2016). As previously stated, living in poor socioeconomic communities can provide numerous hurdles to healthy behavior. Physical exercise and good eating might be hampered when there is a lack of access to nutritional, educational, and recreational resources (Jamerson et al., 2016).

Both Black and non-Black students' CVD (cardiovascular disease) risk profiles improved after the project healthy school's intervention. Both groups improved physiologically in the areas that needed the most development, for example, Black students had the lowest recovery heart rate values at baseline compared to non-Black students. Black students increased their recovery heart rate metrics significantly more than non-black students after the project healthy intervention (Jamerson et al., 2016). Overall, Black, and non-Black students increased their

physical activity, reduced their sedentary behaviors, and improved their eating habits. To summarize, these findings support the use of concepts such as the Project Healthy schools' program for the modification of CVD risk; the goal is to start with prevention in childhood and work toward reducing CVD in adulthood (Jamerson et al., 2016).

The second article written by L. E. Robinson et al. (2014) discussed a literature review on several databases that were used in this study to conduct systematic database searches for research publications published in English between January 1980 and March 2013 (Robinson et al., 2014). Many keywords were utilized to boost the yield of research studies on weight-related behaviors in pre-school and school-aged children. They manually evaluated the bibliographies of review articles and other relevant studies to aid in the identification of essential research within the review; they found a total of 12,270 publications, and the titles and abstracts were reviewed for relevance (Robinson et al., 2014).

All relevant studies' abstracts and methods were scrutinized to ensure that they met the inclusion and exclusion criteria (Robinson et al., 2014). Obesity and/or obesity prevention interventions that focused on healthy eating, physical activity, or both, second, randomized controlled trials, controlled clinical trials, comparative studies, or quasi-experimental studies conducted in the United States, third, studies targeted at African Americans, or results stratified by race/ethnicity, and finally, studies conducted in preschool/head start or school settings were all included (Robinson et al., 2014). They excluded studies that were only observational or cross-sectional; lacked inferential statistics to understand the effectiveness of the intervention; school-based programs with an after-school component; had fewer than 75 participants and fewer than 20% of African American participants; did not stratify data; or did not describe the intervention components (Robinson et al., 2014).

To summarize, the evidence reviewed supports the applicability of well-designed school-based interventions for promoting health-positive nutrition behaviors in African American children, despite the small number of studies, heterogeneity of primary outcome variables, and a scarcity of studies that included follow-up assessments. In children and adolescents, the interventions that were successful on physical activity and BMI outcomes are less obvious (Robinson et al., 2014). The findings suggest studies could potentially serve as a foundation for scalable interventions in African American communities should be given high priority (Robinson et al., 2014). Given the recognized importance of interventions in school settings as part of obesity prevention strategies and the higher-than-average risks of obesity in African American children, the findings suggest that studies that could potentially serve as a foundation for scalable interventions in African American communities should be given high priority (Robinson et al., 2014). Although this study did not consider after-school programs, it still provided useful information to consider when planning interventions for healthy eating programs.

### **Girls Inc.**

Girls incorporated is a non-profit youth organization that encourages girls to be "strong, smart, and bold" (Nicholson & Maschino, 2001). The organization's mission is to empower girls and contribute to a more equal society. It all began during the industrial revolution, when young women left their family farms to work in textile mills across the northeastern United States. Many young women would go to girls' clubs after work, and these clubs gradually evolved into locations where women could learn practical skills in a safe environment. In 1945, fourteen charter girls' clubs came together to form a national organization called Girls Clubs of America, which was renamed Girls Incorporated in 1990 (Nicholson & Maschino, 2001).

In addition, Girls Inc. programs touched over 740,000 girls and young women aged six to eighteen in 2000. Approximately a hundred affiliates, including YWCAs and community coalitions, offered programs to girls and young women in over 1,100 program locations (Nicholson & Maschino, 2001). Most of these programs take place in schools before and after school hours, and they cover topics including science, media critique, leadership, and substance abuse prevention. According to the 2000 annual survey, 70% of the program's participants are girls of color, with 48% being African American, 30% being Caucasian, and 15% being Latina. Around 75% come from families with annual incomes of \$25,000 or less, and 40% live with both parents (Nicholson & Maschino, 2001). Almost every Girls inc. affiliate welcomes lesbian, bisexual, transgendered, or questioning sexual preference girls and young women with disabilities (Nicholson & Maschino, 2001). In addition, Girls Inc. of Taunton is affected by diversity, equity, and inclusion in every way. To address the opportunity gaps and systematic disparities that Girls Inc. of Taunton girls confront, the organization has adopted processes that result in a more diverse staff base and a more inclusive atmosphere, which leads to a more equitable company and world. This specific focus will be expected and needed by current and potential partners, communities, employees, and the girls themselves (Girls Incorporated of Taunton, 2022).

### **Method**

I wanted to make a difference and design a project that would assist members of the community both physically and mentally, so I chose Girls Inc. for my honors thesis. Maura Rosenthal, my mentor, and I met during my first semester honors thesis. I was brought to her research team, which was working to increase equity by strengthening a collaboration between Bridgewater State University and Girls Inc., Taunton. Being added to the team benefited both my personal learning and the team's ethnic diversity. My project idea was approved, and the honor's coordinator requested that Maura Rosenthal make me an official member of her research team. I wanted to start by making a project that included both health practices and the physical environment. We then decided to meet with Jessica Johnstone Darling, the director of Girls Inc, to discuss my program ideas. I suggested two ideas that I thought would be successful: helping to clean up areas in Taunton such as parks and rivers or focusing on nutrition and conducting study on consuming foods that are beneficial to our mental and physical health.

After considering the options, Jessica Johnstone Darling, Executive Director of Girls Inc., Taunton, decided that focusing on nutrition was the best option, and that starting a cooking class would be a fantastic way to get started. We felt a cooking session with the girls would be a fantastic opportunity because they had never done it before. I began to visit Girls Inc on a regular basis to acquire a sense of what the organization was all about and to get to know the girls. Maura Rosenthal and I decided to conduct a focus group with the girls on December 10, 2021, before my winter break, in which we asked girls several nutrition-related questions (See appendix 10). This focus group served as a template for the second semester thesis. The responses to the questions aided me in determining how I wanted to create the second semester

cooking program. I wanted to know what their dietary interests were and if they included fruits and vegetables in their diet, so the questions were mostly nutritional in nature. I noted how diverse the responses to the questions were, which allowed me to learn more about the girls.

In addition, I spent my winter break vacation brainstorming six potential dishes for the cooking program. We decided that holding this program with the older girls would be best because they would be more aware of the program's overall aim and goal. The age group we chose to deal with was 10-13 years old, and courses would be held on Wednesdays, and I designed a flier for the program to distribute to the girls and their parents (See appendix 6 for flier). We distributed them to the age groups specified in the flier, and anyone who was interested may sign up and participate in the program. I had a recipe and developed lesson plans for six weeks. I applied for and received an Honor's research grant to help pay for the food and materials for the program.

Every Wednesday before the program, Maura Rosenthal and I would get together and go through the week's recipe as well as the lesson plan that would be based on the meal we prepared. I would also go shopping for the ingredients because Covid protocols prevented me from bringing any ingredients from home. Because nutrition is so crucial in children's lives, the goal of this program was to promote good eating habits and well-balanced meals in general. Providing the girls with a variety of meals demonstrated to them that they can eat whatever they want in moderation while maintaining a healthy balance of food groups. Although we considered preparing actual meals to cook with the girls, it would have taken up too much time because I only had an hour with them. After some discussion, Maura Rosenthal and I concluded that it would be better to create snacks because there are so many ways to combine healthy food groups into them.



Every week, the girls eagerly anticipated learning and creating something new. I made sure to bring in a poster that detailed the nutritional information for the meal as well as the health advantages. The posters would include photographs so that they could see what we were planning for the day. During the program, Christina Elderbee, an AmeriCorps VISTA who is working with BSU and Girls Inc. Taunton, was my assistant. Christina Elderbee was a huge help throughout the six weeks since she would assist me with the girls and was a helping hand through the cooking. I would offer them a fun activity sheet after I presented the poster so that they were learning while still having fun with the lesson (See appendix 2-5 for activity sheets). I'd have them wash their hands right after the activity sheet, and then we'd get started on the recipe. I chose dishes that were quick and uncomplicated because I didn't want them to have to spend too much time cooking; I wanted them to be able to cook at home alone or with the help of a parent or guardian. I made it a point to reflect on how each session went and see how the girls reacted at the end of each one. I made sure to return to the lesson plan page and write down how the day went before, during, and after the session in the notes section. (See appendix 7-9 for images of program).

I aimed to do something fun and creative on the last day of cooking class; I didn't have a lesson plan for that day, so we got right into the activity I had planned for the day. I decided to create a matching worksheet using the terms we learned over the course of the six weeks. I utilized words from each of the posters I created on the worksheet. If the girls were stuck on a word, they could glance at the posters. Following the activity, we began the recipe, which was fruit fondue, which the girls thoroughly liked preparing. They were able to have sweets while also using fruits in this dish, which was a terrific example of a healthy balance. We presented all the girls aprons as a token of their completion of the six-week program at the end of the session.

Even though they were unhappy that it was coming to an end, they all had a great time and learned a lot.

### **Conclusion**

It was an honor and a learning experience for me to be able to plan and lead a project with Girls Incorporated. Even if it was just for a short time, my purpose was to teach and have an influence on these young ladies. My goal was to demonstrate to them that there are no "good" or "bad" foods because we all require the same nutrients. Teaching girls how to appreciate themselves and be true to themselves at an early age will help them develop positive mindsets. The girls at Girls Inc. Taunton enjoyed every minute of the cooking program, and I was able to form bonds with them and learn more about them each week I was there. The girls were so mature and positive about everything even if some of them didn't like things, they would learn how to make the snacks and try them.

In addition, Girls Inc. staff share their input on the cooking program, Christina Elderbee, AmeriCorps Member serving with Campus Compact VISTA at Bridgewater State University and Girls inc. Taunton says "The girls would ask about the cooking program every week! They always looked forward to it, no matter what was being made that day. We would even hear many of the younger girls express how excited they were to do the cooking program with Chantel when they were old enough." Danielle Driscoll, Program Director says, "Not only did Chantel teach the girls simple recipes they could replicate at home, but she also taught them about the nutrition of the foods they were putting into their bodies and what it meant to have a healthy, balanced diet." I received a lot of positive comments and the staff liked how this program impacted the girls in so many ways. This experience has inspired me to continue having a positive impact on communities because knowing that I was able to help and give back is such a wonderful feeling.

### Appendix

Figure 1 shows the lesson plans I developed for each week, Figures 2-5 show activity worksheets I did with the girls as part of the lesson of the day, Figure 6 shows the flier I created before the program began, figures 7-9 show me presenting the lesson of the day to the girls and lastly, figure 10 shows the focus group questions I created for the girls.

**Figure 1.**

<b><u>Week 1 March 2nd: Avocado Toast</u></b>			
<b>Lesson plan</b>	<b>Materials needed</b>	<b>Learning objectives</b>	<b>Activites</b>
<ul style="list-style-type: none"> <li>➤ 4:00-4:15pm: Fun fact sheet</li> <li>➤ 4:15-4:30 pm: Avocado word search</li> <li>➤ 4:30-5:00 pm: Make Avocado toasts</li> </ul>	<ul style="list-style-type: none"> <li>❖ Avocados</li> <li>❖ Wheat bread</li> <li>❖ Tomatoes</li> <li>❖ Peppers</li> <li>❖ Onions</li> </ul>	<ul style="list-style-type: none"> <li>❖ Learn how to cut an avocado</li> <li>❖ Learn how to prepare your own avocado toast</li> <li>❖ Learn the health benefits of eating avocados</li> </ul>	<ul style="list-style-type: none"> <li>❖ Fun fact sheet about avocados: <a href="https://www.medicalnewstoday.com/articles/270406#tips">https://www.medicalnewstoday.com/articles/270406#tips</a></li> <li>❖ Avocado word search: <a href="https://puzzlesoplay.com/wp-content/uploads/2021/01/avocado-word-search-puzzle-file.pdf">https://puzzlesoplay.com/wp-content/uploads/2021/01/avocado-word-search-puzzle-file.pdf</a></li> </ul>
<p><b>Notes: The girls really enjoyed learning about Avocados as well as eating it. For some girls, it was their first time trying avocado toast which was a great experience. They all said they would try it again at home with their families. They also learned about the four different types of saturated fats and learned that monounsaturated fat is in avocado.</b></p>			

<b><u>Week 3 March 16th: Tuna wraps</u></b>			
<b>Lesson plan</b>	<b>Materials needed</b>	<b>Learning objectives</b>	<b>Activities</b>
<ul style="list-style-type: none"> <li>❖ 4:00pm-4:15pm: lesson on protein and tuna</li> <li>❖ 4:15pm-4:30pm: Activity worksheet</li> <li>❖ 4:30pm-5:00pm: Tuna wraps</li> </ul>	<ul style="list-style-type: none"> <li>❖ Canned tuna</li> <li>❖ Diced onions</li> <li>❖ Low fat mayo</li> <li>❖ Lettuce wraps</li> </ul>	<ul style="list-style-type: none"> <li>❖ Learn about the importance of protein</li> <li>❖ Learn about the health benefits of tuna</li> <li>❖ Learn how to prepare a tuna wrap</li> </ul>	<ul style="list-style-type: none"> <li>❖ Poster board</li> <li>❖ Protein food group activity: <a href="file:///Users/chantelalmanzar/Downloads/protein-food-group-worksheet.pdf">file:///Users/chantelalmanzar/Downloads/protein-food-group-worksheet.pdf</a></li> </ul>
<p><b>Notes: Some of the girls were not too thrilled about trying tuna because of the smell or they simply didn't like it. They all made the effort to make the tuna lettuce wraps and give it a try. In the end some girls liked it, and some didn't.</b></p>			

<b><u>Week 4: March 23rd: Pizza Bagels</u></b>			
<b>Lesson plan</b>	<b>Materials Needed</b>	<b>Learning objectives</b>	<b>Activities</b>
<ul style="list-style-type: none"> <li>❖ 4:00pm-4:15pm-lesson plan on carbohydrates</li> <li>❖ 4:15pm-4:30pm-Activity worksheet</li> </ul>	<ul style="list-style-type: none"> <li>❖ Whole wheat bagels</li> <li>❖ Turkey pepperoni</li> <li>❖ Pizza cheese</li> </ul>	<ul style="list-style-type: none"> <li>❖ Learn about the importance of carbohydrates</li> <li>❖ Learn how to</li> </ul>	<ul style="list-style-type: none"> <li>❖ Poster board presentation</li> <li>❖ MyPlate coloring worksheet</li> </ul>

❖ 4:30pm-5:00pm- Pizza bagels	❖ Veggies  ❖ Pizza sauce	prepare pizza bagels	
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**Notes: The girls loved making the pizza bagels, some of them already make them at home with their parents so they were excited to make them again. They all made their own kind of bagels, there was cheese, pepperoni, and some with pepper and onion toppings. It was great seeing all of the girls enjoying the process of making them.**

**Week 5: March 30: Oatmeal Cookies**

Lesson plan	Materials needed	Learning objectives	Activities
<ul style="list-style-type: none"> <li>❖ 4:00pm-4:15pm-lesson plan on Fiber</li> <li>❖ 4:15pm-4:30pm-Ingredient set up</li> <li>❖ 4:30pm-5:00pm-Oatmeal cookie prep</li> </ul>	Oatmeal cookie recipe: <a href="https://www.wellplated.com/healthy-oatmeal-cookies/">https://www.wellplated.com/healthy-oatmeal-cookies/</a>	<ul style="list-style-type: none"> <li>❖ Learn about the importance of fiber</li> <li>❖ Learn how to prepare oatmeal cookies</li> </ul>	<ul style="list-style-type: none"> <li>❖ Poster board presentation</li> </ul>

**Notes: The girls were extremely excited to make oatmeal cookies, they all had a job to do, and they were able to work together as a team. They did a great job preparing everything and communicating through the whole process. The cookies turned out delicious.**

Figure 2.

**FOURTH GRADE • LESSON 3**

### Calcium in Foods

Instructions: Write your favorite dairy foods or drinks in the "name of food" column. Look at the Calcium Content of Foods worksheet or nutrition label and write down the amount of calcium in the food. Add the amount of calcium and write in the "total" box. Finally, color in the bone to the total amount of calcium in your favorite foods! Does it total 1300 mg?

Name of Food	Calcium Content
peppers	20
cheese	210
beans	50
quark	300

TOTAL

1300 mg 840  
 1200 mg 20  
 1000 mg 300  
 800 mg 160  
 600 mg 160  
 400 mg  
 200 mg 160  
 0 mg 140

-4-

Figure 3.

3/3/22, 12:54 PM MyPlate\_Misc\_01.jpg (196x216)

MyPlate.gov

A'Jahnei Handford

[https://myplate.gov/learn/grade-school/4th-5th/2020/12/MyPlate\\_Misc\\_01.jpg](https://myplate.gov/learn/grade-school/4th-5th/2020/12/MyPlate_Misc_01.jpg)

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Figure 4.

Name Makayla

Food Worksheets  
**Protein Food Group**

Look at the pictures of food below. Circle all the foods that are part of the protein food group.

Write the names of the protein food group items you circled.

chicken Nuts  
ham bacon

Food Worksheets | © Copyright AllKidNetwork.com | www.allkidnetwork.com

Figure 5

Name Claudia

**Matching**

Write the letter of the correct match next to each problem.

1. <u>B</u>	Avocados	builds, maintains, and replaces the tissues in your body.
2. <u>C</u>	Healthy fats	A source of vitamins C, E, K, and B6
3. <u>A</u>	Protein	support skin health, enhances the absorption of fat-soluble vitamins, minerals, and other nutrients, and even helps support I
4. <u>A</u>	Tuna	These are also called starches. Starches include grain products, such as bread, crackers, pasta, and rice.
5. <u>J</u>	Simple Carbs	does not dissolve in water. It helps with constipation.
6. <u>d</u>	Complex carbs	can help reduce bad cholesterol levels in your blood which can lower your risk of heart disease and stroke.
7. <u>F</u>	Soluble fiber	It is rich in protein, low in fat and calories and is an excellent source of the essential omega-3 fatty acids which help to
8. <u>F</u>	Insoluble fiber	a mineral most often associated with healthy bones and teeth
9. <u>h</u>	monounsaturated fats	dissolves in water. It helps lower cholesterol and improve blood sugar control.
10. <u>I</u>	calcium	these are also called simple sugars. They're found in refined sugars, like the white sugar you see in a sugar bowl. You'll al

https://www.ck12.org/curriculum-connector-your-own-workbook-up-worksheet.php



Figure 6.



*student, will lead a six-week cooking program for Girls Inc.*

*Girls between the ages of 10 and 12 will be able to learn how to prepare healthy foods that they may create with their families and friends at home!*

**COOKING PROGRAM DATES:**  
FEBRUARY 9  
FEBRUARY 16  
FEBRUARY 23  
MARCH 2  
MARCH 9  
MARCH 16  
MARCH 23  
MARCH 30

Figure 7.



Figure 8.

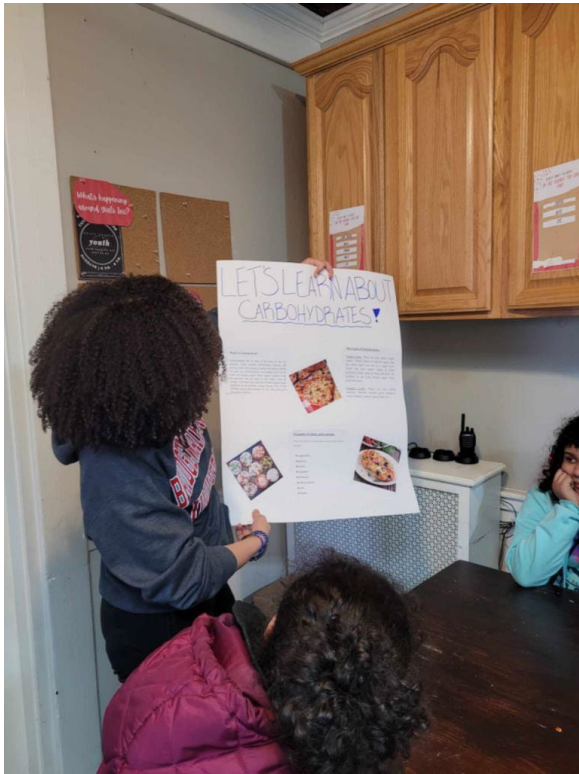


Figure 9.



Figure 10.

**Focus Group questions**

Girls interested:

Paige, allana, amaya G, Older sister and younger sister, alli, samara, layla, skyla and jadya

9 girls (10-12 years)

1. When you think of health, what specific words come to mind?

- a. Fruits and vegetables
- b. Soup
- c. Hospital
- d. Broccoli
- e. Salad
- f. Potato salad
- g. The red cross/nurses
- h. Medicine
- i. Staying active
- j. Green beans
- k. Being healthy: making sure you keep your body hydrated
- l. carrots

2. What type of meals do your parents or caregiver make at home?

- a. Chicken and broccoli
- b. Salmon
- c. Rice and eggs
- d. Fish, chicken
- e. Bowl of broccoli
- f. Baked macaroni and cheese

3. Do you eat fruits everyday, most days, or rarely?

- a. Most days-1
- b. Everyday-6
- c. sometimes-1

4. Do you eat vegetables everyday, most days, or rarely?

- a. most days- 3
- b. Sometimes- 1
- c. Everyday-1

5. What is your favorite snack?

- a. Oreos
- b. Carrots and ranch
- c. Cereal without milk
- d. Cucumbers
- e. Fudge, pickle, & sour cream
- f. Fried pickles
- g. Apples and nutella

6. Do you help your parents or caregiver make meals at home?

- a. 8 girls

7. What is your favorite meal of the day? (breakfast, lunch, or dinner)

- a. Breakfast-1
- b. Lunch-1
- c. dinner-5

8. What did you learn about health or physical activity when the BSU students were present?

- a. Learned about emotions
- b. Foods that are healthy
- c. Good sugar and bad sugar
- d. Activity about what foods were good or bad (choosing sides)
- e. Made smoothies

9. What is a meal you always wanted to try or make?

- a. Fudge
- b. Pasta
- c. Rice

- d. Baked mac and cheese
- e. Lasagna
- f. Spaghetti and noodles
- g. Fried chicken
- h. Tacos
- i. Fried/popcorn shrimp
- j. Spaghetti and shrimp
- k. Crab
- l. Shepherd's pie

10. What are your thoughts on having a cooking class?

- a. The best
- b. Fun experience
- c. Good idea- have a the younger girls try the older girls foods
- d. A good experience for the girls to learn

11. Where do you usually eat dinner on the couch or table?

- a. Table-5
- b. Couch-1
- c. Neither

12. What is a special dish your family makes for the holidays?

- a. Peanut butter and chocolate dessert
- b. Cheesecake
- c. Fried mac and cheese
- d. Rice
- e. Pies
- f. Lasagna

13. What is your nationality?

- a. Cape verde
- b. German
- c. Puerto rican

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