

A Childhood Obesity Prevention Project:
Implementation of the KidsFit Obesity Program Among School-aged Scouts to Increase
Knowledge and Behaviors Related to Nutrition and Exercise: Girl Scouts
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Abstract

Childhood obesity is a global epidemic that predisposes children to a lifetime of medical conditions, social problems, and increased medical costs. KidsFit is an established obesity prevention program developed by Robert Wood Johnson Barnabas Health to prevent childhood obesity. The purpose of this DNP project was to implement the KidsFit program in a social setting involving a troop of Girl Scouts aged 8-11 years old. This project evaluated the effectiveness of the KidsFit program, a standardized education program, at increasing Girl Scouts knowledge and healthy behaviors related to nutrition and exercise. The Girl Scouts attended a one-hour weekly meeting for six weeks where they learned about nutrition, reading food labels, portion sizes, healthier choices, and the importance of physical activity. Success of the program was determined by pre and posttest questionnaires. The findings of this project demonstrated that children's health knowledge, health behaviors and physical activity increased after the implementation of the KidsFit program. Expanding the use of obesity prevention programs to small group community settings such as Girl Scouts will help more children benefit from the programs with peer and community support. This project can be the beginning steps to the potential expansion of this standardized childhood obesity prevention program with generalization for children at a local, county, state, and national levels.

Keywords: Childhood obesity prevention program, obesity prevention with Girl Scouts, KidsFit program, social influence, obesity prevention with peers, nutrition, childhood obesity, KidsFit and Scouts, community obesity prevention program

Introduction

Childhood obesity is a preventable condition that frequently leads to adult obesity as well as several medical conditions that may be prevented with proper nutrition and exercise. Obesity is one of the most common chronic diseases of childhood, and the number of children affected continues to increase despite continued assessment and evaluation of at-risk groups. Obese children are developing diseases and health problems previously observed only in adults. More children are being diagnosed with diabetes, hypertension and heart disease at an earlier age resulting in complications that lead to a shorter adult life. This public health issue needs to be addressed starting in childhood.

Modifying behavior early in childhood and educating children on the benefits of healthy foods and exercising is the first step in preventing childhood obesity. Girls between the ages of 8 and 11 are particularly vulnerable to developing unhealthy eating habits. As girls begin puberty; they experience many physical changes including rapid growth, and weight gain. During this transition, girls often develop body dissatisfaction and weight concerns, which is often associated with low self-esteem and abnormal eating habits (Makinen, et al, 2012).

This transition is an emotional and stressful time during which girls rely on their girlfriends for advice and comfort. Friends they have known for a short period of time, their best friends, and their Girl Scout troop, are where they look to and up to for guidance and nutritional health. KidsFit is a 10-session curriculum-based obesity prevention program that provides children and their families the ability to discover the nutritional benefits of different food groups and the benefits of physical exercise (RWJBarnbas Health, 2019). Maintaining good nutrition and overall health helps girls remain confident in who they are and how they look as they enter adolescence. By implementing KidsFit within a Girl Scout troop with girls between the ages of

8 and 11, girls are provided with the tools and guidance to maintain physical and nutritional health that will carry into adulthood. This relationship between the Girl Scouts and KidsFit is an investment in health promotion, community outreach and overall wellness that will benefit girls from different ethnicities and socioeconomic status.

Background & Significance

Obesity is a worldwide, non-communicable chronic disease that should be treated with the same amount of enthusiasm, persistence and dedication as other chronic diseases. Childhood obesity is a multi-causal chronic disease that has both short- and long-term consequences. In the short term, obese children may experience emotional and social consequences such as body dissatisfaction, depression, disordered eating behaviors, discrimination and weight-based teasing. Long term consequences result from an energy imbalance that leads to the development of excess adipose tissue as well as structural abnormalities, psychological effects and functional impairments (The Obesity Society, 2018). The disease increases the risk of developing lifelong health problems such as asthma, type 2 diabetes, high cholesterol, high blood pressure, early coronary heart disease, congestive heart failure and more (The Obesity Society, 2018). These children are also at a higher risk of having other chronic health conditions that will affect their physical health such as sleep apnea, bone, and joint problems (Center for Disease Control and Prevention [CDC], 2018). The percentage of children and adolescents affected by obesity has more than tripled since the 1970's, and data from 2015-2016 shows that nearly 1 in 5 school age children have obesity (CDC, 2018). Although obesity rates have plateaued in the United States between 2003 and 2014, the rates of childhood obesity remain high (The State of Obesity, 2019). According to national trends, 18.5% of youth between the ages of 2 to 19 are obese. The rate varies but the rate of obesity increases as age increases (The State of Obesity, 2019). For

children and adolescents aged 2 to 19 years, from 2015-2016, the prevalence of obesity was 18.5%, affecting about 13.7 million children and adolescents. It was 13.9% among 2-to-5-year old's, 18.4% among 6 to 11-year old's and 20% among 12 to 19-year olds. Even though boys are more likely to have obesity than girls; all children with obesity are more likely to be bullied and teased, suffer from social isolation, depression, and low self-esteem (Harding, 2010). In 2015-2016, 19.1% of boys ages 2 to 19 had obesity and 17.8% of girls ages 2 to 19 had obesity. Between 2013-2014 and 2015-2016, the obesity rate of boys increased 11% while the percent of girls with obesity increased by 4% (The State of Obesity, 2019).

Body Mass Index (BMI)

Overweight is defined as a body mass index (BMI) at or above the 85th percentile and below the 95th percentile for children and teens of the same age and gender, while obesity is defined as a BMI at or above the 95th percentile (CDC, 2018). The BMI is calculated by dividing a person's weight in kilograms by the square of height in meters. A child's weight status is determined using a specific percentile for BMI rather than the BMI categories used for adults because a child's body composition varies as they age, as well as between boys and girls. BMI does not measure body fat directly, but it is correlated with more direct measures of body fat (CDC, 2018). The CDC recommends professionals use BMI percentile because it takes into consideration that young people are still growing and grow at different rates depending on their age and gender (CDC, 2018).

Risk Factors

There are several factors that increase the chance that a child will be obese. Parental obesity is the best indicator for childhood obesity with the risk being higher if

both parents are obese. The cause of excess weight gain in children is similar to those in adults, including factors such as genetics and a person's behavior. Eating high calorie, low nutrient foods and beverages, not getting enough physical activity and too much screen time are all behaviors that influence excess weight gain (CDC, 2016). Too little exercise and too many calories consumed between food and drinks are the main cause of childhood obesity. While genetic and hormonal factors may contribute as well, the main factor is food choices.

Consequences of Obesity

While there is a difference in sex hormones between girls and boys, they are equally affected by overweight and obesity, even during puberty. Psychiatric and psychosocial comorbidities are more common in obese girls, and they suffer more often with eating disorders such as binge eating. Girls as young as 5 years old have shown concern about their weight and body dissatisfaction (Harriger & Thompson, 2012). Body dissatisfaction is linked to higher levels of unhealthy eating behaviors, less physical activity, and less fruit and vegetable consumption (Harriger & Thompson, 2012). These behaviors carry into adolescence and are associated with stigmatization, and negative psychological consequences.

Childhood obesity may lead to social discrimination, low self-esteem, and other health consequences that carry into adulthood. Not only are there increased costs associated with childhood obesity, but how a child views themselves has emotional effects. The social stigma that accompanies being overweight can be as damaging to a child as the physical disease (Healthy Children, 2017). Children who are obese are more likely to have low self-esteem as well as feelings of shame about their body. These feelings can lead to poorer academic performance, name calling, teasing, and bullying (Healthy Children, 2017). They may lose friends and face difficulty in making new acquaintances. Social isolation or feeling excluded

creates loneliness and feelings of being an outcast. After time, they may become sad and depressed; driving them to find emotional comfort in food, and the cycle does not end. People who feel lonely or socially isolated tend to be depressed, have more health issues and may have shorter lifespans (Healthy Children, 2017).

Childhood obesity is also a cause of school absenteeism. According to a meta-analysis completed, children with overweight and obesity had a 27 to 54% higher chance of being absent from school than their normal weight peers (An et al., 2017). Obese children are absent more than average weight children, which then hinders their learning, causes parents to miss work and is costly to the school systems. In addition, children who are obese at ten years old and remain obese into adulthood will incur elevated direct medical cost beyond their normal weight peers over a lifetime. Medical costs average \$19,000 per obese child, compared to a child who remains at normal weight as an adult (Levitt et al., 2016). When considering the percentage of obese fifth graders in the United States, this results in more than \$25 billion in added lifetime medical costs in this particular age cohort alone (Levitt et al., 2016).

Preventing and reversing childhood obesity has substantial health and economic benefits. It is more challenging for adults to lose the excess weight once they are obese; therefore, prevention of childhood obesity into adulthood is of great importance. While behavioral changes and lifestyle modification are the primary tools for reducing obesity, children are not equipped to make these informed choices about what is healthy to consume and what is not. Prevention of childhood obesity through nutritional counseling, and emphasis on daily physical activity is the key to success in addition to providing better chances to reduce long term complications (Pandita et al., 2016).

Needs Assessment

Global

Obesity and being overweight is the fifth leading global risk factor for mortality (World Health Organization [WHO], 2020). Childhood obesity is a serious public health challenge that is global and affecting mainly low and middle-income countries. In 2016, over 41 million children under the age of five were overweight. At this rate, if the current trends continue, by 2025, 70 million children will be overweight or obese globally. Diseases such as diabetes and cardiovascular disease that obese children are developing at a younger age than normal weight peers can be prevented. The same root cause for obesity exists globally, an increase in energy dense foods that are high in fat and sugar but low in vitamins and a decrease in the amount of physical activity performed. At least 2.6 million people die each year as a result of being overweight or obese (WHO, 2020).

National

Childhood obesity impacts the child, their family, and the nation. There are at least four major categories of economic impact resulting from the obesity epidemic including direct medical cost, productivity costs, transportation costs and human capital costs. The financial amount spent on diagnosis and treatment of the conditions associated with obesity is likely to increase with rising obesity levels. Many health care costs associated with obesity cause a change in employer-sponsored health insurance which in turn means less cash wages (Hammond & Levine, 2010). Obesity also contributes to productivity loss due to obese people being less productive while at work as well as absenteeism. In addition, obesity may lead to an increase in disability payments and disability insurance premiums, which represents higher fiscal costs to the federal government. An increase in body weight means more fuel and larger vehicles are

needed to transport the same number of commuters and travelers producing a greater spending on fuel (Hammond & Levine, 2010). In addition, between 2007- 2008, 5.7 million men and 16.5 million women who were eligible for military service exceeded the weight standards to serve in the Army (Cawley & Maclean, 2012). The most common reason soldiers are medically disqualified is due to obesity. Due to the rising number of overweight youths, the military is not going to be able to maintain its effectiveness (Myers, 2018).

State

Childhood obesity is a public health priority in New Jersey and therefore a ten-year plan was put in effect in 2008 known as The Shaping NJ Obesity Prevention Strategies. This plan was carried out over ten years and involved health care, childcare, schools, communities and workplaces (Office of Nutrition and Fitness, 2013). The plan included objectives such as standardizing the number of minutes of health, physical education and safety education per week in grades 1-12. Schools incorporated healthier meal options for students and encouraged students to decrease the amount of time spend on the computer and in front of a television. Hospitals were encouraged to become breastfeeding friendly to promote and encourage breast feeding in infancy (Kitchenman, 2014). Some of the changes had significant results. In New Jersey, obesity rates declined among 2 to 4-year olds enrolled in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) from 2010-2016; the rate of obesity dropped from 18.9% to 15%. However, the current obesity rate among 10 to 17-year olds has increased slightly from 14.8% in 2016 to 15% in 2018. The adult obesity rate has decreased to 25.7%, which is a significant improvement being that the rate of obesity in adults has been steadily increasing since 1995 (Robert Wood Johnson Foundation, 2019). This demonstrates that making little changes over time does improve health, but more is needed.

Local

This Doctor of Nursing Practice (DNP) project was implemented within a Girl Scout Troop in a town within Union County, New Jersey. Obesity is identified as one of the key areas for improvement by the North Jersey Health Collaborative for this county. In 2012, 24.5% of adults, 19.3% of low-income children, as well as 25.4% of adult males were obese in Union county (North Jersey Health Collaborative, 2019). In 2016, The North Jersey health collaborative created a plan to reduce obesity of children birth to 5 years with a focus on low income residents. Their plan involved educating parents and caregivers in traditional and non-traditional settings and helping to increase access to health foods and physical activity (North Jersey Health Collaborative, 2019). While instituting a plan for young children is important, emphasis must also be placed on older children who are transitioning to adulthood and faced with the independence of choosing their own meals and snacks. School aged children and young adolescents will benefit from an educational program to help understand how to make better choices and learn the benefits of a healthier lifestyle.

Problem Statement

Childhood obesity is an ongoing issue that needs to be addressed in childhood to prevent health issues as the child grows into adulthood. Friendships are important to children and they learn best in a social setting with their peers. Instituting an obesity prevention program to a Girl Scout troop as part of their curriculum encourages girls to make healthier food choices and increase the amount of physical activity they partake in.

Clinical Question

Is the KidsFit obesity prevention program effective in increasing knowledge and behaviors relating to nutrition and exercise in Girl Scouts between the ages of 8 and 11 over a six-week period?

Aims & Objectives

The primary aim of this DNP project was to evaluate if the KidsFit Obesity prevention program was effective in increasing knowledge and behaviors relating to nutrition and exercise in Scouts between the ages of 8 and 11. Through increased awareness of proper nutrition and positive health behavior changes, participants would be able to improve their overall health status.

The objectives required to achieve these aims were as follows:

- Girl Scout Troop members' health knowledge will improve after participation in the KidsFit program as evidenced by the "Nutrition and Physical Activity Pre & Post Test"
- Girl Scout Troop members' health behaviors will increase after participation in the KidsFit program as evidence by the "Food Frequency and Lifestyle Habits Questionnaire" and daily steps recorded will increase as evidence by the "Fitness Tracker Log".
- Inform best practices for the use of structured childhood obesity prevention programs in the community for health promotion at the end of the project.

Review of Literature

A comprehensive literature search from 2009-2019 using CINAHL, PubMed, and Google Scholar databases was conducted using the following key words: “childhood obesity prevention programs with peers” “childhood obesity prevention program settings.” These key words were used in combinations to include one theoretical keyword, (i.e., obesity) one behavioral keyword (prevention) and word referring to peers (i.e., peers, peer influence, school) and one age group identifier (i.e., children and adolescents). The initial search through PubMed using the “childhood obesity prevention programs” yielded 2,012 results. Changing the publication dates to only view articles for the past ten years and only “humans” as a filter, decreased the search to 1,421 results. Adding “settings’ into the search field brought up 150 results. Adding “with peers” narrowed the results to 6 articles. When searching CINAHL with the phrase “childhood obesity prevention programs” and “peers” 33 results were found. This review was completed to find relevant empirical research for the use of obesity prevention programs that are successful when implemented within a social setting of peer relationships. Google scholar was used to with the phrase “Girl Scouts and obesity prevention program” since 2015, which yielded 997 results. The search was focused on systematic reviews as well as reviews of obesity prevention programs and the effectiveness of programs based on identified outcome measures (Appendix A).

Preventing and reversing childhood obesity has substantial health and economic benefits. It is more challenging for adults to lose the excess weight once they are obese; therefore, prevention of childhood obesity is of great importance. While behavioral changes and lifestyle modification are the primary tools for reducing obesity, children are not equipped to make these informed choices about what is healthy and what is not. Prevention of childhood obesity through

nutritional counseling, and emphasis on daily physical activity is the key to success in addition to providing better chances to reduce long term complications (Pandita et al., 2016).

Childhood Obesity Prevention Programs

Primary care practices play a crucial role in identifying childhood obesity. In many pediatric primary care practices, if a child appears to be gaining weight or falls into the overweight or obese category, the family is educated on the benefits of more exercise, portion control and healthier snacks. There are no set guidelines to follow or instructions on how to transition their child to a different dietary lifestyle. Providers have indicated that they have limited time and a lack of resources preventing them from effectively treating childhood overweight and obesity. In addition, most have low levels of comfort and confidence in bringing up the issue with families (Silberberg et al., 2012). Most pediatric primary care physicians feel childhood obesity needs attention; however, they do not have the tools to enforce it. 71% of physicians spoke about eating habits and physical activity, but only 19% gave parents tools to help them make changes (Holt et al., 2012). While health care providers may have difficulty determining what intervention to refer patients to, reports have demonstrated that increasing physical activity alone does not help reduce a child's weight. Primary care providers have a limited time with patients and cannot be the only source of intervention families rely on to help prevent childhood obesity. Introducing obesity prevention programs to social and afterschool activity programs will enable more children to learn how to eat healthfully and provide primary care physicians with a suggestion tool of how to help their patients who are at risk of being overweight or obese.

Family based obesity treatment programs that include behavior modification, nutrition education and physical activity have been considered optimal in pediatric obesity treatment

(Taylor et al., 2016). Programs exist in school, primary care, childcare, and community settings. Results from a systematic review and meta-analysis on childhood obesity programs, found that most childhood obesity prevention studies (83%) have been school based and the interventions implemented in schools that included home involvement had the most favorable results. Fifty percent of community-based studies reported significant effects, 40% of childcare based studies, and 33% of primary care-based studies reported favorable results. None of the home-based studies reported statistically significant results (Wang et al., 2015). This demonstrates that the most successful programs are implemented in the school setting as well as community settings where children are among their peers.

Per the CDC (2018), schools are an optimal setting for preventing childhood obesity because much of a child's day is spent in this setting. A comprehensive approach involving nutrition and physical activity in school, while involving parents and other community members, is the ideal approach to enhance the health and wellbeing of students. By incorporating programs into group settings such as schools, students are not singled out based on their weight status and may then avoid being embarrassed or bullied (CDC, 2018). Research suggests that participants who enrolled in a weight loss program with friends were more successful maintaining their weight and were more likely to maintain their weight after the program ended (American Psychological Association, 2019). While studies demonstrate that a school setting is ideal, the fundamental goal of every instructor is to create a conducive learning environment (Williams, 2018). School based nutrition and health education may vary across schools and regions. Instructing students in a small group method can encourage each child to engage in the lesson and possibly learn better. Incorporating an obesity prevention program into a Girl Scout

curriculum provides a smaller group instruction in which all girls would have the support of each other and learn how to eat healthy.

Nutritional Intervention

Obesity prevention programs focus on providing nutritional education to students and their families. All programs stress the importance of consuming fruits and vegetables, as well as low fat and nonfat dairy foods, lower sugar, and limiting sweets. Different nutritional strategies have been followed in prevention programs encouraging the consumption of fruit and vegetables.

The 5-2-1-0 campaign was implemented in a primary care practice for 60 patients with a BMI equal to or greater than the 85th percentile. The primary care provider provided one on one education to patients and parents using the 5-2-1-0 campaign. There was no difference in BMI or blood pressure, but there was an increase in the amount of fruits and vegetable consumed and there was a decrease in the number of hours spent watching television each week (Jester et al., 2018). This project also determined that counseling parents and their children about healthy behavior did not affect their physical health, however, it did determine that when parents are counseled on healthy eating and then offer healthier options at home, children are more likely to follow healthy behaviors (Jester et al., 2018).

The same 5-2-1-0 program was implemented in two elementary schools over the course of a school year rather than one-on-one instruction as previously done in a primary care setting. This study was implemented by nursing students and the school nurse during school hours. As with the primary care setting, students BMI did not change, but the number of servings of fruits and vegetable increased, juice consumption decreased, and physical activity increased (Tucker & Lanningham-Foster, 2015).

The Dietary Approach to Stop Hypertension (DASH) diet was implemented over an 8-week period through 29 different schools in Pittsburgh. The goal was to see a decrease in BMI, and while there was a change in eating, exercise habits, and the consumption of healthier foods, the program was not considered effective because a decrease in BMI was not seen (Manger et al., 2011).

The Traffic Light Diet was implemented with 64 students in an afterschool program. The students learned about healthy eating and increasing physical activity. The children and their group leaders discussed the importance of reducing the intake of red foods such as sweets, snacks and desserts and the importance of consuming at least 4 green foods (fruits and vegetables) for every red food (sweets and chips). They also learned about the importance of physical activity and participated in organized activities during each meeting. The program was considered successful because students did increase their fruit and vegetable consumption and decrease sweets consumption (Nabors et al., 2015).

Following state guidelines for nutritional education and exercise in the school setting is not always enough. A school district in Mississippi where obesity is high, developed a randomized control trial to see if additional education would be more beneficial for students. Students in the control group followed the state guidelines, which included didactic nutrition education, health information incorporated into academic lessons, and weekly physical education classes. The intervention group followed the same program but also received monthly family events including nutrition and physical activities during the academic year. Results indicated that the duration was too short to notice a significant change in BMI ($P=0.12$) but there was a decrease in percentage of body fat ($P=0.02$), more physical activity ($P=0.04$) and the parents also

had a significant improvement in dietary habits ($p=0.04$). The control schools BMI increased 5% (Greening et al., 2011).

Involving families has also shown to be beneficial. The Growing Healthy Kids (GHK) program was implemented in Carrboro North Carolina, between the years of 2008 and 2010. Low income families were provided weekly gardening sessions, a 7-week cooking and nutrition workshop, and social events for parents and children. Three gardens were open, and staff were present for families to practice specific gardening skills. Results of the pre- and post-program survey concluded that children who participated in the GHK program had an increased availability of fruits and vegetables at home, the number of fruits children consumed increased 28%, and the amount of vegetables consumed increased 33% (Castro et al., 2013).

The duration of most educational programs is too short to see a change in BMI; however, they all indicate that at the conclusion of the program or even during it, there is an increase in the amount of fruits and vegetables consumed and a decrease in the amount of juice and soda. The particular diet taught is of less importance than the emphasis on healthier choices including fruits and vegetables, as well as portion control that lead to healthier eating and obesity prevention.

KidsFit

KidsFit is a wellness program that began as an intervention for pediatric obesity treatment and then transitioned into a prevention program for children and their families. It is no longer a weight loss program, and BMI is never measured. The program has transitioned into an education program used to provide nutrition lessons that will change behavior (RWJBarnabas Health, 2019). The nutritional guidance is based on the MyPlate plan, suggested by the United States Department of Agriculture (2020). The lessons provide steps to balancing energy intake and output, recipes that can be made in the classroom and at home, making better choices in the

fast food environment, and recognizing how the media impacts our food choices. The program is developed to help children think about their food choices and realize nutrition is something that they should consider daily.

KidsFit has partnered with schools in Newark New Jersey where the program has been integrated into health and physical education curriculum for grades Pre-K-8. In the 2016-2017 school year, there was an improvement in all program goals. Based on the food frequency questionnaire, there was a 14% increase in those reading the nutrition facts label and an 11% increase in students avoiding drinking soda. There was a 5% increase in fruit as well as vegetable consumption and a 3% increase in those meeting daily exercise requirements (RWJBarnabas Health, 2019).

Physical Activity Involvement

All obesity prevention programs incorporate the need for physical activity into their curriculum and most show a significant improvement post implementation. The VITAL program determined it was most effective to focus on both dietary and physical activity than on dietary behavior alone. Therefore, they included games and physical activity during their lessons and 77% of parents agreed it was a good program to promote physical activity (Manger et al., 2012). Students in Mississippi followed their states standard health curriculum including physical education classes and noted improvement in two of three fitness tests ($P < 0.0001$, $P < 0.0001$) (Greening et al., 2011). In a program known as MEND (mind, exercise, nutrition, do it!) kids enjoyed the program when they were able to be interactive and they had fun doing the exercise, activities, sports and games (Watson et al., 2016). When reviewing the Healthy Lifestyles Program, a school-based obesity prevention program, students suggested incorporating more activities to help it be more successful (Lloyd et al., 2011). In addition, when reviewing

programs, interviewers determined that when children were with their friends and peers, they had more energy, and modeled each other, therefore these programs were more successful (Salvy et al., 2011). Physical activity is an important factor to help improve health. While most prevention programs primary focus is on nutrition, children enjoy the exercise and physical activity more when they are being active with friends and their peers.

Impact of Social Relationships

Peer acceptance as well as friendships are important as children grow into adolescence. Experiencing positive peer relationships and friendships help children develop a positive self-image, social competence and academic achievement. These relationships also act as a buffer against the negative impact of family troubles and potential bullying from other students. Children who feel good about themselves are less likely to give into peer pressure and are more likely to make better choices (Aburdene Derhally, 2016). During middle childhood, 9 to 11-year-old children form stronger friendships and peer relationships. They also experience more peer pressure and are very aware of their body as puberty approaches. This is a key time when body image and eating problems start. Having a solid group of friends at this difficult time in childhood helps children deal with those hardships that everyone faces. Children with a good set of friends have higher self-esteem, act more social, can cope with life stressors and transitions, and are also less victimized by peers (Aburdene Derhally, 2016). Youth are also more physically active when in the company of friends, while lonely children who are isolated from peers report the least amount of physical activity (Salvy et al., 2012).

Girl Scouts

The Girl Scouts have a long history of encouraging girls to work as a team, learn to become a leader and help each other succeed. Girls team up and develop strong relationships,

inspire each other and learn to be leaders (Girl Scouts, 2019). Troops are not only established in towns, but homeless shelters and shelters for at-risk women and children as well. Girls from these troops find refuge in the friendships they build despite life's hardships and uncertainties. Girl Scouts provide a sense of security, as well as lessons on leadership and bullying (gsblog, 2019). Including lessons on nutrition, exercise and obesity prevention along with these other life lessons, will help provide the girls with the skills to lead a healthy life. In addition to caring for themselves, Girl Scouts will help other members of the community as well. Being a member of Girl Scouts encourages service to community beyond service to self. This is an opportunity to spread the benefits of good health to all members of their community.

Children mimic peer behaviors; by implementing an obesity program for children in a group setting such as Girl Scouts, positive behaviors and changes in habits are more effective in these groups. Implementing KidsFit, an obesity prevention program, among a group of Girl Scouts helped the girls support each other, lead a healthier lifestyle, and hopefully share their knowledge with friends.

Theoretical Framework

The theoretical framework of this DNP project was based on the Social Cognitive Theory (Appendix C), which suggests that learning occurs in a social context with a dynamic and reciprocal interaction of the person, environment, and behavior (Mohamad & Zuhrah Che Ab Razab, 2018). According to the social learning theory, psychologist Albert Bandura proposed that behavior is learned by modeling things observed in the environment (Cherry, 2019). Bandura's Social Cognitive Theory (SCT) stresses the importance of observational learning, imitation and modeling. The theory integrates a continuous interaction between behaviors, personal factors including cognition, and the environment referred to as a reciprocal causation

model. In the reciprocal causation model, behavior refers to things like complexity, duration, and skills. Environment is comprised of the situation, roles, models and relationships. Person is comprised mainly of cognition but also other personal factors such as self-efficacy, motives and personality (Mohamad & Zuhrah Che Ab Raza, 2018). Children are more likely to imitate people who they perceive as related to themselves and then receive a response for that behavior - either reward or punishment. If they are rewarded, children are then more likely to continue performing that behavior (Cherry, 2019). Bandura described in the famous Bobo doll experiment that children observe the people around them behaving in various ways and these models provide examples of behaviors to observe and imitate (Bandura et al., 1961).

Integration of the Social Cognitive Theory in the DNP Project

Initiating an obesity prevention program among a group of peers would be beneficial in teaching girls how to live a healthier lifestyle that includes nutrition and exercise habits. A meta-analysis of school-based childhood obesity prevention programs showed that the most successful and significant programs were those that targeted children less than 10 years old and that were based on a behavioral theory (Hung et al., 2011). This DNP project involved a troop of Girl Scouts who participated in the KidsFit program, which has been framed within the Social Cognitive Theory (Appendix D). The SCT includes a behavioral capacity, which was seen with improvements in knowledge and skills. The KidsFit program provides knowledge that helps participants to identify the benefits of adopting healthy behaviors. The KidsFit program incorporates a Health Behavior Assessment (Appendix E) and a Knowledge Exam (Appendix F) to examine the participants' health behaviors and then later to assess the effectiveness of the program.

Baseline knowledge and baseline health behaviors were assessed using pre-intervention questionnaires. A reassessment of this knowledge and behaviors was examined with a post intervention questionnaire at completion of the project to assess how much knowledge was gained and how many behaviors improved. Participants were encouraged to set goals at each session. This can be something as simple as setting a goal to eat one more fruit or vegetable the following day. Positive reinforcement at each session, as well as prizes during some curriculum activities encouraged positive behaviors. Self-efficacy was created by building skills in small incremental steps through short term goal attainment, which is the basis of the KidsFit curriculum. The environment refers to more than the type of home a child lives in, but also the availability and accessibility of food. Children live in a range of environments, and not all of them are conducive to healthy eating and physical activity. In order to assist participants in having the ability to make healthier choices at home, parents received a handout at the end of each lesson. These handouts supplied recipes and suggestions for healthy snacks for home and school. They gave tips and suggestions that included low-cost ingredients and tips of how to create a recipe on a budget. This helped families who struggle financially provide healthy options for their child.

Methodology

This DNP Project was an obesity prevention project implementing the KidsFit program to a Girl Scout troop. It was a pilot intervention. A pre and posttest design was used to evaluate if the KidsFit Obesity Prevention Program was effective in increasing knowledge and behaviors relating to nutrition and exercise in Girl Scouts between the ages of 8 and 11.

Setting

The implementation took place at the recreation center in a town located in Union County, New Jersey. Within this town, 92.9% of adults are High School graduates, and 43.2% are college graduates. The median household income is \$100,575. 92.5% of the residents are white, 14.1% are Hispanic or Latino, 4.4% are Asian, and 1.4% are Black or African American (United States Census Bureau, 2019). 79.4% of the residents speak English, 8.9% speak Spanish and 3.8% speak Portuguese (Neighborhood Scout, 2020). Permission to implement the project within the recreation center was obtained from the recreation center director (Appendix G). The recreation center had several rooms and gyms where different activities are carried out. The troop met in a room where tables and chairs are provided to enhance the learning environment.

Study population

The participants were girls aged 8-11 years old who were members of Girl Scouts. Eleven Girl Scouts participated in the study. Stakeholders, such as parents and the troop leaders were also involved in this project. While the parents were not present for the meetings, they were occasionally given handouts that included information on a topic learned, as well as healthy recipes. The troop leader was present during the meetings and gained knowledge regarding healthy lifestyle behaviors. This knowledge was beneficial to the troop because the leader could continue practicing the behaviors at meetings after the project was complete.

Participant Recruitment

The DNP student was a Girl Scout Troop Leader for several years in the town and was familiar with the structure of Girl Scout meetings and goals. She presented a Troop Leader with the flyer for potential participation in the research project (Appendix H). When the troop leader notified the DNP student of her interest in participating in the study, the DNP student set up an

informational meeting with the troop leader, Scouts, and parents of the Scouts before the start of the study to explain the project and answer any questions or concerns they had. At this introductory meeting, the parents and Scouts were explained the details of the study. They were informed that the Girl Scouts must participate in the entire study for the full six weeks to earn the activity patch, and they must stay for the full hour meeting. The troop leader chose the intervention meetings to be in lieu of the troops scheduled meetings and it was at the troop leader's discretion if she wanted to hold additional troop meetings during the time frame of the study. The troop leader attended the six meetings run by the DNP student, so parents felt comfortable leaving their children at the meetings for the study.

Subject Screening

- **Inclusion Criteria**

- The participants had to be girls aged 8-11 years old who were currently Girl Scouts in the town.
- They had to understand and speak English to participate.
- The Girl Scout Leader had to agree to participate
- Participants had to be able to attend and participate in regular troop meetings to participate in the study.
- If a child was in a wheelchair or had a physical disability but was able to participate in regular Girl Scout meetings, then he/she will be able to participate in the activities of this study. Pedometer readings will not be evaluated for any participant in a wheelchair.

- **Exclusion Criteria**

- Participants outside the age range of 8-11 were not eligible to participate.

- Children who were not currently in the Girls Scout Troop could not participate.
- Scouts could not participate if their Troop Leader did not agree to participate
- Scouts with an existing condition that prohibits them from participating in their normal Girl Scout meetings were not able to participate

Consent Process

After obtaining the IRB approval from the Rutgers University, the DNP student met with the parents to explain the purpose of the project. The parents were given the opportunity to read the consent forms, ask questions, and sign the Parental Consent (Appendix I). After the parents agreed to for their child to participate, they were asked to sign an Adult Consent (Appendix J) and complete the Demographic Questionnaire (Appendix K). The Demographic Questionnaire inquired about the child's age, grade, family income, nationality, food allergies as well as any learning disabilities the child had. The DNP student then explained the project to the children in easy to understand words and read the Document of Assent (Appendix L) to them. The Assent Form was written in simple terminology at a 3rd – 5th grade level, however, the DNP student read the contents of the Assent Form out loud to the children during the informational meeting. The Girl Scouts were asked to each write her name or sign the Document of Assent if they agreed to voluntarily participate in the program.

Risks and Benefits to Subjects

There were minimal potential risks to the participants. The potential minimal risks that participants may have encountered included minor physical injuries that were unforeseen but may have occurred from program activities. These minor injuries included, but were not limited to, accidental paper cuts from handling paper or doing a craft, falling when performing physical activity and accidental contact with furniture or other children during exercise activities. Rules

and behavior guidelines were discussed with the Girl Scouts during the first meeting to help minimize these risks. Some activities included simple recipe making and participants were encouraged to try the snack. There was a risk that the participants would not enjoy the new food item. When food is involved, there was always a risk of the participants being allergic to a food item or choking. However, care was taken regarding allergies based on the information gathered from parents about their child's allergy. In addition, the DNP Student was certified in Cardiopulmonary Resuscitation (CPR) (Appendix M) and Pediatric Advanced Life Support (PALS) (Appendix N).

Another possible risk was developing a stigma if the participants family did not eat a lot of fruits and vegetables or could not afford to buy them. During the study, participants only discussed what they ate the day before to help them learn about food groups, their family's finances were not discussed.

There was also a risk that an inadvertent loss of confidentiality may have occurred, but all steps to keep the data confidential were taken. There was no personal information discussed during the sessions except the children wrote down what they ate the day before. It was acceptable if they choose to discuss their daily foods eaten outside of the group, as this was not confidential information.

Psychological harm was also rare but included participants' believing they were participating in this study due to their weight or current eating habits. This project's goal was to increase knowledge and healthy eating behaviors to prevent the development of obesity and its associated health consequences (RWJBarnabas Health, 2019). The participants were not weighed at any time before or during this project. They could also have felt disappointed that they did not achieve the most steps as determined by their Pedometer/ Fitness Tracking Log.

Socially, participants may have missed out on other events that may have occur while they attend meetings each week and they may have felt the meetings were a waste of time.

Minimizing Risks

To avoid possible risk of food allergy reactions, parents were required to write down any food allergies on the Demographic Form prior to the start of the KidsFit program. If there was any report of food allergies, the DNP student would have ensured that these food items were not present during the meetings. Rules were discussed and enforced at the beginning of every meeting to ensure proper behavior to avoid any possible physical harm. To protect the children from psychological harm that may have resulted from preexisting weight concerns, the DNP student did not discuss participant's weight and at no time was the participant's weight measured.

To help minimize the risk of loss of confidentiality, the documents that identified the participants number for all work completed remained on the DNP students password and fingerprint locked computer. All the Consents, Assent Forms, and Demographic Questionnaires that had identifiable information as well as the documents with non-identifiable information were kept in a locked safe in the DNP students home until completion of the study. Upon completion of the study, all questionnaires, documents collected during the study, Consent, Assent and Demographic Forms were personally driven by the DNP Student to the Primary Investigator's office at Rutgers University. These forms were kept in a locked cabinet in the Primary Investigator's locked office within the Rutgers Newark School of Nursing. The word file that contained the names and numbers assigned to the participants were transferred to an encrypted USB drive. The USB was also personally driven by the DNP Student to the Primary Investigator's office to store in her locked office with all the other documents. All the documents

on the encrypted USB could only be opened with a password, which was only known by the Primary Investigator and DNP student. Unauthorized users did not have access. In addition, the files were deleted from the DNP Student's personal computer. All the documents delivered to the Primary Investigator's office as well as the USB drive remained in the Primary Investigator's office for six years as per the Institutional Review Board guidelines. After this time, the documents were shredded, and the USB was destroyed with a hammer by the Primary Investigator. The pieces were then discarded.

Compensation/Incentives

There was no cost for participants to take part in this study. As an incentive, participants were given a pedometer at the beginning of the study that they were allowed to keep as an encouragement to engage in daily physical activity. As part of the KidsFit curriculum, there were some group challenges and activities during certain meetings. Winners of these activities received prizes such as water bottles, balls, and jump ropes. Participants also received a badge for their Girl Scout uniform at the completion of the program. The badge was a nutrition and fitness badge to display on their uniform symbolizing completion of the activity. All the Girl Scouts completed the study, but if any did not, they would not have received a badge.

Study Intervention

This project incorporated an obesity prevention program to increase knowledge and behaviors related to nutrition and physical activity. The KidsFit curriculum was a ten-week program that presented a new lesson each week (Appendix O). Permission to use the program with the Girl Scouts was granted from the KidsFit program coordinator (Appendix P). This ten-week program was agreed to be condensed into six weeks for this DNP Project due to time limitations (Appendix Q). The teacher instruction guide included various activities that were

applicable to each week's topic. The curriculum offered flexibility for the teacher to include the activities that are applicable and most interesting to the participants. Therefore, the teacher was able to choose to include all the activities, but it was not mandatory. For example, there were multiple hands-on activities that were suggested for each topic, however the teacher could decide to only do one. The curriculum had two weeks dedicated to each similar topic, so similar topics were condensed into the same week to prevent repetition and due to time constraints. This curriculum was made for school base learning, where classroom time can range from 25 minutes to more than 1 hour. It was not desirable to institute the program in a larger than a traditional classroom setting to ensure the students all received adequate attention.

Each session began with the participants completing the Daily Food Log (Appendix R) followed by instructional procedure and an independent activity that enhanced the lesson. The Daily Food Log was completed to help educate the participants on the different food groups and what food groups their food choices belonged in. The objective behind this activity was to teach the children about nutrition and encourage them to eat well balanced meals from all food groups daily. Each lesson had a planned outline for the DNP Student to follow (Appendix S-BB). The instructional lessons were enhanced by individual and group activities, providing the troop members with opportunities to practice healthy behaviors. The DNP Student explained how each activity tied in with the lesson introduced to ensure understanding. At the end of each meeting, the DNP Student asked questions to assess the participants knowledge, comprehension, and application of the presented information that day. The participants took their work home to share with their parents as well as any handouts specifically created for parents in the curriculum (Appendix CC). These handouts provided nutritional information as well as healthy recipe options that parents could incorporate in their daily meal preparations to help provide healthy

options for their children (Appendix DD). The only daily task the participants were asked to complete at home was to record the number of steps on their pedometers at the end of each day on a Pedometer/Fitness Tracking Log that was created by the DNP Student (Appendix EE).

During the first meeting, participants completed the Nutrition and Physical Activity Pre-Test (Appendix F) as well as the Food Frequency and Lifestyle Habits Questionnaire (Appendix E). Both of these questionnaires were created by the RWJBarnabas Health Team. The DNP Student read aloud each question and answers to ensure the children had a clear idea of which answer they wished to circle. At the first meeting, each participant was also given a pedometer to help count the number of steps they completed each day.

Completing these assessments provided the DNP Student with a baseline understanding of what the children already knew and what their food and lifestyle habits were before beginning the program. The children's scores were not discussed among the group to prevent any child from feeling inferior to any other child due to a test score. The participants also completed the Daily Food Log, which was used to learn about the different food groups. This first session combined the "New Beginnings" lesson and "Energy Balance" lesson. Participants completed fun activities to learn how food fuels the body and how we can balance what we eat with activity. The participants received their pedometers at the end of the first meeting and were encouraged to document their steps at the end of each day while participating in this study.

During the second meeting, the "MyPlate: Fruits and Vegetables" and the "MyPlate: Grains and Protein" lessons were discussed. The participants handed in their Pedometer/Fitness Tracking Logs for the past week and then complete their Daily Food Log. We discussed the 5 food groups as well as what counts as a serving of fruits and vegetables. They completed activities that focused on grains and proteins and how all the food groups fit into MyPlate.

The third meeting focused on dairy and bone health, “MyPlate: Dairy” and “Dairy and Bone Health”. The Girl Scouts handed in the Pedometer/Fitness Tracking Logs, we reviewed their Daily Food Logs, and made a smoothie for all participants to try. This entailed discussing the role of each ingredient and how it related to bone health.

The fourth meeting also entailed collecting the Pedometer/Fitness Tracking Log, and time was spent discussing food labels and how to identify a serving size, calories, fat, salt and sugar. This lesson on “Food Label Investigation” taught the participants how to read a food label and interpret what each part of the label meant.

The fifth meeting covered “Sugar and Breakfast Cereals” and “Fast Food and Fats” to discuss sugar, breakfast foods, as well as fast food and fats. They turned in their Pedometer/Fitness Tracking Logs, reviewed the Daily Food Log, and the participants discovered how much sugar is in a food or beverage and how to select foods that contain less sugar. They also learned how to choose healthier options from the menu at fast food restaurants and how to identify unhealthy, fatty foods.

During the sixth and last meeting “Healthy Habits for Life”, participants described how they changed their eating habits because of KidsFit, and we reviewed the principles of making healthy choices, including exercise. They turned in their final Pedometer/Fitness Tracking Logs. The participants retook the Nutrition and Physical Activity Post Test, as well as the Food Frequency and Lifestyle Habits Questionnaire. These helped determine the success of the program in educating and increasing behaviors that lead to improved health. The participants also reviewed and signed the Live Long and Strong Contract (Appendix FF).

Outcomes to be Measured

Four outcome measures were used in this project. First the demographic questionnaire, developed by the DNP student, was used to collect information on the Girl Scouts age, grade, nationality and family income.

The second measure, the “Food Frequency and Lifestyle Habits Questionnaire” (Appendix E) was an eighteen-question multiple choice survey, that assessed the Girl Scouts daily lifestyle behaviors. This questionnaire was created by RWJBarnabas Health. The first fifteen questions measured how often a habit occurred relating to nutrition; and the remaining three questions answer if the participant spent an hour or more exercising, and hour or more walking and an hour or more on screens. The answers were rated as “never, rarely (1 time a month), sometimes (1-2 days), most days (4-6 days), and Every day.” The last three questions had a Yes, and No response.

The third measure, the “Nutrition and Physical Activity Pre & Post Test”, (Appendix F) was a twenty-question test created by RWJBarnabas Health KidsFit Team. These questions determined how much the participants understood regarding nutrition knowledge such as reading food labels, how many food groups are in MyPlate, and how our bodies respond to physical activity and different foods. The twenty questions were worth 5 points each, and the score ranged from 0-100.

The fourth measure was daily steps recorded on the Pedometer/Fitness Tracking Log. Since the program questionnaires primarily focus was on healthy dietary behaviors, the use of pedometers was added to evaluate if there was an increase in daily physical activity (number of steps) over the course of a six-week period. Each participant was given a pedometer and asked

to record the number of steps they performed at the end of the day on a paper chart (Pedometer/Fitness Tracking Log) created by the DNP student.

Research Staff Training

The DNP Student received training from RWJBarnabas KidsFit Program Coordinators to ensure she understand how to correctly implement the KidsFit program and follow the teaching guide. She attended an eight-hour training class that discussed how the program was developed and what the KidsFit Program had achieved thus far. The class was for any adult who wished to use the program for educational purposes. The program was designed so anyone can implement and easily follow the instructor's manual, without needing a health degree to implement the program. During the KidsFit curriculum training, the KidsFit coordinators used the time to ensure that the DNP Student understood the concepts of the program. The KidsFit Coordinator demonstrated different ways that they would involve the children into some of the activities. The DNP Student was provided with samples of lesson activities by the instructors. The DNP Student did not complete any assessments, nor were there any required by the program coordinators. The KidsFit coordinators suggested condensing the program into six weeks for the Girl Scouts study. They encouraged two lessons to be combined and completed within an hour. The DNP Student and team member worked together in condensing the program into the six-week timeline combining similar topics.

Project Timeline

The timeline of this project included presenting this project to the project Chair in spring 2019, submission of the project proposal to the IRB in spring 2019, IRB approval in Fall 2019, and implementation of the project in Fall 2019 for six consecutive weeks. At the completion of the study, data was analyzed through the Fall of 2019. The DNP student was scheduled to

present her findings at the 2020 National Association of Pediatric Nurse Practitioners (NAPNAP) conference in the spring of 2020, however this event was cancelled due to the pandemic Covid 19 virus. The DNP project will be presented in the Spring of 2020 to Rutgers University Staff and students. It is also anticipated to publish the findings of this project in one of the peer reviewed journals.

Resources

Resources required were tables and chairs for the participants to sit at, which were provided by the recreation center. Additional resources included the KidsFit workbook for the participant as well as the curriculum guide for the DNP Student to follow. The cost of the KidsFit curriculum has been graciously provided free of charge by the RWJBarnabas Health KidsFit team. In addition, a childhood obesity prevention scholarship was provided by the National Association of Pediatric Nurse Practitioners (NAPNAP) for \$1000 to help offset the costs. The DNP student purchased 11 fitness trackers for each of the participants with scholarship monies. A Pedometer/Fitness Tracker Log was provided for each child to record the number of steps their tracker displayed at the end of each day. Other necessary supplies included an easel pad, easel stand, pencils, markers, paper to print handouts, blender, food and measuring cups. In addition, prizes were purchased as incentive for winning individual or group challenges. These prizes consisted of water bottles, jump ropes, different types of sporting balls, and other items that encourage healthy behaviors. Nutritious snacks were provided at each meeting and the ingredients for a smoothie and other activities were supplied when required for the curriculum. Any additional costs were covered by the DNP student. The fitness trackers cost a total of \$646.20 (\$336 specifically for the Girl Scout Troop), the supplies including patches cost

\$92.82, prizes cost \$120.64, the paper handouts to the children cost \$30 and the food cost an average of \$40 to \$50 each session (\$240-\$300).

Data Analysis

Demographic Survey

The Demographic Questionnaire was analyzed as part of descriptive statistics. The Girl Scouts nationality, age and family income was described.

Behavioral Questionnaire

The Food Frequency and Lifestyle Habits Questionnaire was analyzed through descriptive statistics. There was no correct answer on the behavioral questionnaire, and therefore, each response was recorded, as appropriate to the specific question. Using descriptive statistics, the aggregate mean of each response was determined with “5” as the highest frequency of participant reported healthy behaviors and “1” as the lowest measure of healthy behaviors. An increase in the aggregate mean behavioral score from pre-test to the post-test determined the effectiveness of the program.

In order to create a numeric score for this assessment tool, a numeric rating was assigned to the answers. Questions 1-8 on the questionnaire queried positive behaviors such as eating breakfast, drinking low fat or fat free milk, drinking water, eating fruits, vegetables, eating lunch, reading nutrition labels and eating home prepared meals. For these questions, rating was assigned as: everyday= 5, most days=4, sometimes=3, rarely=2, and never=1. Questions 9-15 asked about negative behaviors such as drinking soda, juice, whole milk, eating fast food, fried foods, sweets and chips. For these questions, rating was assigned as: everyday=1, most days=2, sometimes=3, rarely=4, and never=5. Question 16 and 17 assessed if the participant spent an hour or more exercising or walking. For these two questions, yes=5 and no=1. Question 18 asked about spending one hour or more on screens (television, tablet, computer). For this

question, yes=1, no=5. A score of 5 indicated they had very healthy behaviors and a score of 1 indicated unhealthy behaviors. Each Girl Scouts individual score was determined based on an average of the 18 questions and then the groups mean score was an aggregate of the individual scores.

Knowledge Test

The Nutrition and Physical Activity Pre & Post Test consisted of 20 questions. Each question was worth 5 points and therefore, the test was graded on a scale of 0-100%. Using descriptive statistics, the aggregate mean score of the pre-tests was compared to the aggregate mean of the post tests. An increase in the post test aggregate mean score compared to the pretest aggregate mean score determined the effectiveness of the program.

Pedometer Tracking Log

Descriptive statistics were used to calculate the aggregate mean number of steps completed during the first week compared to that completed during the last week of the program. To assess physical activity, daily steps were recorded on a Fitness Tracking Log during the entire 6-week time frame of the study. The Girl Scouts were each given a pedometer at the first meeting and were asked to write down their daily number of steps each night. The logs were collected at each meeting but only the first week's logs and last week's log were compared. Each Girl Scout's steps were added up for the week and then a mean score was determined for the group. An increase in the aggregate mean number of steps completed during the first week compared to the aggregate mean number of steps completed during the last week determined the effectiveness of the program.

Data Security

At the beginning of the project implementation phase, all participants were assigned a number. The names and identifying numbers for participants were documented in a word document that was stored on the DNP student's password and fingerprint locked computer. The Parental Consent, Adult Consent, Assent Form and Demographic Questionnaires were the only documents that had identifying information on them. All handouts, test questionnaires, and food logs utilized in the program only contained the participant's assigned project number for confidentiality. The excel file was secured in the DNP students' password and fingerprint locked personal computer. By assigning each participant with a number, all handouts, tests, and questionnaires did not contain any personal identifying information. All the Consents, Assents, and Demographic paperwork that had identifiable information, as well as the documents with non-identifiable information were kept in a locked safe in the DNP students' residence until completion of the study.

Upon completion of the study, all questionnaires, documents collected during the study, Consent, Assent, and Demographic Forms were personally driven by the DNP student to the Primary Investigator's office at Rutgers University. These forms were kept in a locked cabinet in the Primary Investigator's locked office within the Rutgers Newark School of Nursing. The excel file that contained the names and numbers assigned to the participants was transferred to an encrypted USB drive with a protected password. The USB was also personally driven by the DNP student to the Primary Investigator's office and stored in her locked office with all the other documents. All the documents on the encrypted USB could only be opened with a password only known to the Primary Investigator and DNP student. In addition, the files were deleted from the DNP Students personal computer. All the documents delivered to the Primary Investigators

office as well as the USB drive remained in the Primary Investigators office for six years as per the Institutional Review Board guidelines. After this time, the documents were shredded, and the USB was destroyed with a hammer by the Primary Investigator. The broken and damaged pieces were then discarded.

Results

Demographic Data

Based off the demographic questionnaire completed by the Girl Scout's parents, all 11 of the girls in the troop were 9 years old and in the fourth grade as of September 2019. Four of the Girls were white, non-Hispanic; 6 were Hispanic; and one was Portuguese (Appendix KK). The family income of the girls ranged from less than \$39,999 to more than \$125,000 (Appendix JJ).

Health Knowledge

Prior to the implementation of the KidsFit program, the ranges of Nutrition and Physical Activity test scores was 50% through 85%. The mean health knowledge score before the KidsFit program was implemented was 71%. The post intervention test scores ranged from 60% to 100% with a mean score of 88%. This showed an 23.9% increase in participants knowledge regarding health nutrition and physical fitness. (Appendix HH)

Health Behaviors

To assess everyday health behaviors, the Girl Scouts completed a Food Frequency and Lifestyle Habits Questionnaire. The participants' mean score prior to the implementation of KidsFit program was 3.2, which increased to 3.4 after the program was implemented. (Appendix II)

Physical Activity (Daily Steps)

The Girl Scouts had an average of 33,487 steps the first week, and their daily steps increased to an average of 40,832 steps by the last week. (Appendix JJ). This indicated that physical activity did increase by 21.9 % during the course of the study.

Discussion

The Girl Scouts mean knowledge score increased from a baseline of 71% to a post implementation aggregate score of 88% after implementation of the KidsFit program. This is a 23.9% increase. When educating children on a new set of skills or knowledge, repetition provides the practice that enables them to master the new information. It also helps improve speed, confidence and strengthens the connections in the brain that help children learn (The Nemours Foundation, 2019). In addition, the most effective way for children to learn is to engage the visual, auditory, kinesthetic and tactile pathways to the brain. This produces a multisensory connection to the concepts and skills being taught and helps children retain new information (The Nemours Foundation, 2019). The DNP student did try and repeat important lessons and ask the Girl Scouts questions about topics they learned although it was not possible to reiterate all the important facts each lesson due to time constraints. Health knowledge improved after the intervention; however, it is unclear if the condensing of lessons into the shorter period of time prohibited the Girl Scouts from learning more, or if more repetition was needed to help the Scouts recall the knowledge more. Based on the results and participation with the program, the DNP student would recommend a lengthier meeting time if the program is completed in the six weeks to ensure adequate time for review each week or extending the program to the originally recommended ten weeks.

Similarly, the Girl Scouts health behaviors mean score did improve from a baseline of 3.2 to a post intervention score of 3.4 based on the “Food Frequency and Lifestyle Habits Questionnaire”. It is not surprising to see a minimal change because changing behavior is one of the hardest things to achieve. Children cannot be forced to change their behavior, but the environment can be changed in a way that children will be more motivated to change. Healthy snacks were supplied at the meetings, but unless parents were encouraging a change and purchased different snacks to have at home, lifelong change is unlikely from a few meetings. In addition, it may have been too short of a duration to observe significant changes.

The KidsFit program asked the Girl Scouts to recall a previous day’s meal, but it did not incorporate more behavior modification techniques into the program. For example, the program did not ask the children to set weekly goals, there was no accountability for their behavioral changes at each meeting, nor did it require feedback and reinforcement for positive changes. The DNP student did acknowledge and announce to the group of Girl Scouts when one of the Girls brought the smoothie from the previous week to drink. The DNP student also gave positive reinforcement to another student who asked the serving size of a snack after a previous lesson involving serving sizes. Reinforcing these positive behaviors follow the Social Learning Theory in that the Girl Scouts would witness a positive response for a peer’s behaviors and therefore want to mimic that same behavior. It is possible that there was not enough intervention time to see a change in other Girl Scouts or perhaps more intervention is needed involving the parents of the Girl Scouts to ensure changes are capable at home as well. Consistency is the key to making behavior modification effective and behavior modification is about modifying the environment in a way to create an incentive to change a behavior.

The weekly recorded steps on the pedometers increased from an average of 33,487 to 40,832 steps by the end of the study. This was an 21.9 % increase. While one lesson focused on the importance of physical activity to help balance the number of calories consumed, the participants were not required to set goals each week to engage in more activity. Some girls were self-motivated and enjoyed trying to reach a self-set goal of daily steps, others had no interest in accruing more steps then previously done. One mother reported that her daughter ran laps around the gym one evening in an effort to achieve more steps. Self-motivation can only come from within, but there are some ways to help nurture it as well. Focusing on solutions to problems, encouraging persistence, learning to accept failure and celebrating achievements may help improve a child's success (Enright, 2015). Setting a goal of a total number of steps and rewarding the Girl Scout who reached the goal may have helped encourage others to get more physical activity.

Limitations

Limitations did include a small sample size (n=11) and the self-reporting nature of the behavioral questionnaire could have bias in the responses. Despite the fact that behaviors are difficult to change, barriers did exist in the program that need to be reviewed in order for it to be more successful. The girls did learn from the education portion of the program but were not as successful in changing behaviors. The average age of the girls was nine, and they still rely on their parents or guardians to prepare meals and purchase the food they eat. This might have prevented the children from making changes even if desired, unless the parents are willing to make the changes for the household. Involving the parents more in the program may have helped facilitate more changes at home.

Another barrier was time; the DNP Student found it difficult at times to keep all 11 Girl Scouts attention on the desired task or lesson. The Girl Scouts often wanted to tell the DNP student stories or talk to each other. Some lessons required more time than others and additional time would have been beneficial to help enhance and reiterate each topic.

The pedometers were not part of the KidsFit curriculum and were added as an additional tool to assess daily activity. The Girl Scouts handed in their weekly steps, but there was no concrete way to know how long each girl wore it, or if they fabricated numbers. This is another limitation in assessing how daily activity changed. In addition, three girls did not hand in their final weekly log or first log, and therefore were not included in the data for the number of steps accumulated. The habit questionnaire may not have been completed with total accuracy as well. As the DNP student was reading each question out loud to ensure all the students understood and could answer, some Girl Scouts, although instructed not to, went ahead and completed it on their own. They may not have understood the question completely or were not paying attention to what they were answering.

Implications

Clinical Practice

Pediatric providers are the first line in identifying and providing guidance in the treatment of childhood obesity, yet most are not comfortable addressing obesity management on their own. They lack the time and resources as well as confidence in their knowledge of behavioral management skills and counseling techniques to promote these discussions (Rhee et al., 2018). Despite the recognition of obesity as a critical economic and public health issue, health care providers continue to search for the most effective way to address the issue. The findings of this DNP project support previous research that identified a community-based effort

of promoting healthy eating and increased physical activity effective in preventing childhood obesity (Manger et al., 2012). Most obesity prevention programs in the past have been limited to school settings. This project demonstrated the success of a community-based program in a social setting among children of different socioeconomic settings and genders. This impacts clinical care by encouraging health care providers to continue advocating for and encouraging the use of existing obesity prevention programs in different settings. Providers can collaborate with local policy makers to fund and develop low cost programs in their offices or community settings. This enables providers to not only identify children at risk for obesity, but to provide and follow up with an action plan to change and prevent unhealthy lifestyle behaviors and prevent long term health complications.

This DNP project also demonstrated the effectiveness of the Social Cognitive Theory as an effective model for behavioral change. The Social Cognitive Theory is the basis of the KidsFit program, and focuses on the environment, behavioral, and cognitive factors to affect change. This provides additional evidence-based practice that the KidsFit program, with its focus on both dietary and physical activity can be used or recommended by providers. It also supports the findings of other successful obesity prevention programs that focus on dietary and physical activity changes to help modify behaviors. It demonstrates that educating children in the target population aged 8 to 11 years old is beneficial in promoting healthy behaviors to combat excessive weight gain. Preventing unhealthy behaviors from developing in younger children is more effective than attempting to change an ingrained lifestyle behavior later in life. Therefore, it is recommended that providers recommend at risk children or children with obesity to participate in a program such as KidsFit to help combat obesity when the problem first becomes evident.

Healthcare Policy

Childhood obesity is a worldwide problem that requires more intervention from the government at the federal, state, and local levels to achieve a healthier society. The findings of this DNP Project, implementing an obesity prevention program among a Girl Scout troop, impacts health policies related to education and community involvement. According to psychologist Albert Bandura (1961), behavior change is dependent on an individual's environment. The effectiveness of this DNP project depended on having a supportive social environment and the opportunity to practice healthy behaviors. Children spend a majority of their time in school and community settings. These are optimal locations to incorporate healthcare policies that can become part of a child's daily routine and eliminate modifiable risk factors for obesity such as nutrition and physical activity. Changing the types of food offered in the school's cafeteria is the first step to changing dietary behaviors. Eliminating "junk" food and sugary beverages from the cafeteria and replacing them with fresh fruit and water would prevent many children from consuming unnecessary calories or sugar. This would encourage children to choose healthy options, which would then set an example to other children. Eating healthy, whether once or twice a day at school would create a behavior change that can alter eating habits in the home environment as well. Similarly, engaging children in daily physical activity in the school setting, not only encourages team participation, but the development of an activity habit that can continue to provide positive benefits as children grow into adulthood.

The United States Department of Agriculture's (USDA) school nutrition program works with schools to provide nutritionally balanced meals to children each day. By participating in the School Nutrition Programs, schools serving meals or milk that comply with requirements can receive financial assistance. By only supplying schools with nutritious meals and snacks,

300,000 kids who would be eligible for free or reduced-price meals would not only have access to meals, but healthy and nutritious foods as well (Herzog & Sullivan, 2019).

New Jersey mandates at least 150 minutes of health, safety and physical education per week in all grades. The state does not require the use of a specific curricula for physical education, and substitution with other activities is allowed. This translates into 150 minutes of some form of health and safety education each week. That does not guarantee 150 minutes of exercise. The CDC recommends 60 minutes of moderate to vigorous activity per day for kids. The Board of Education must reexamine school policies that specify the amount of physical activity children partake in. Establishing set guidelines for daily physical education is the only way to ensure every child is receiving the recommended 60 minutes of daily vigorous activity.

Overall, the findings of this DNP project emphasize the importance of health policies that support structured childhood obesity prevention programs in communities, environmental modifications that create opportunities for healthy nutrition and behaviors, and reduction of obesity-related behaviors to improve population health.

Quality/Safety

Quality healthcare means engaging and involving patients and families in their medical care, so they are empowered to take ownership in preventative care and in the treatment of diagnosed conditions. It involves minimizing risks and harm, and providing care the patient needs in an affordable, safe and effective manner. Preventative care does not only entail preventing illness or disease, but it also involves counseling to prevent health problems. Obesity is a medical condition that can be prevented with the proper education and guidance on how to provide and choose healthy meals and snacks. The management of obesity in adults is difficult and often unsuccessful, especially when its due to poor behaviors rather than a known organic

etiopathogenesis. Early prevention is more successful than treatment at later stages, and the KidsFit program is a resource that providers can use as a prevention guide against childhood obesity. It provides families with a safe and effective way to aid in their child's care and ensure they are receiving a good quality nutritional guidance and education.

Education

The importance of nutrition education in the training of health care professionals as well as in the continuing education of practicing clinicians is not a high priority. While nutrition is a large determinant in some of the leading causes of death in the United States, many health care providers are not adequately trained to address lifestyle recommendations that include nutrition and physical activity. Being able to educate families and children is a crucial component in any prevention program. While we expect medical providers to educate families on the importance of nutrition, medical schools in the United States only offer 19.6 hours of nutrition education across four years of medical education and only 27 percent of U.S. medical schools actually offer students the recommended 25 hours of nutritional training. Therefore, upon graduation, less than 14 percent of physicians believe they are adequately trained in nutritional counseling (American Medical Association, 2015).

One of the essentials of a baccalaureate education for nursing practice includes promoting healthy conditions and behaviors to improve populating health. Some baccalaureate nursing programs require a nutrition course while others incorporate nutritional concepts throughout clinical nursing courses (Kris-Etherton et al., 2014). Either way, health care professionals are not adequately trained to educate and follow up on nutritional counseling and behavior modification practices to include physical activity.

There are nutrition competencies for all health care professionals and if updated and aligned across disciplines to provide a standardized nutrition message to patients, then health care teams can achieve a new paradigm for improving interdisciplinary, team-based health care with more nutritional benefits (Kris-Etherton, et al., 2014). The KidsFit program combined the different components; diet, physical activity and parental involvement that make an obesity prevention program successful. It addresses diet and choosing healthy options, stresses the importance of reading food labels and how to balance meals. It encourages physical activity, and a lesson on energy balance explains the importance of exercise to burn excess calories. It also involves the parents of children by providing recipe options as well as snacking tips and parent education. The KidsFit program was also created so non-medical providers can learn about the program and implement it any setting. This enables the use of the program in more than just medical centers, but community and school settings as well.

Economic

Investing in an effective obesity prevention program would be more cost effective than the annual costs associated with obesity and its complications. While preventative care is not always more cost effective than treatment, if one considers all the comorbidities associated with obesity, prevention most likely is more cost effective than treatment. Treating obesity and obesity-related conditions costs billions of dollars each year. In 2005, the United States spend \$190 billion on obesity related health care expenses. Researchers have estimated that by 2030, if obesity continues to rise, the obesity related medical costs alone could rise from \$48 to \$66 billion a year in the United States alone (Harvard T.H. Chan, 2019). While some small steps are being taken to help treat obesity, larger initiatives should be taken by local and national governmental, health and nonprofit organizations food companies and advertisers to make

healthy weights the norm rather than the exception. If one practice alone purchases the program for \$500, they can use the KidsFit program for all their patients whom they identify as at risk, or whose family simply wants to learn how to lead a healthier lifestyle. One team member from the practice can be responsible for implementing the program for the 10 weeks span a few times a year. Insurance companies can be petitioned to cover the cost of patients participating and the office can make a profit as well. By transitioning care to a higher quality of health, we need to transition more care towards prevention rather than treatment.

Girl Scouts of America

Recommending that the Girl Scouts of America institute the KidsFit program into each level of Girl Scouts, would ensure every Girl Scout in America can learn the benefits and tools necessary to live a healthy and normal weight life. In 2013, there were over 3.2 million Girl Scouts: 2.3 million girl members and 890,000 adult members in the United States (Girl Scouts, 2019). The Girl Scout memberships are divided into five age groups. Daisies (5 to 6), Brownies (6 to 8), Junior Girl Scouts (8 to 11), Cadette Girl Scouts (11 to 14), and Senior Girl Scouts (14 to 17). During each level, girls earn patches based on lessons and activities they do as a group. If each level of the Girl Scouts received age appropriate nutrition education and healthy behavior modification techniques, the rate of obesity should decrease dramatically. Building on basic foundations and repetitive lessons would increase their knowledge and constantly reinforce the benefits of a healthy lifestyle. Based on the Social Learning Theory, teaching the girls in their Girl Scout troop, will enhance knowledge and behaviors more than when learning on their own. Modeling healthy eating will encourage other Girl Scouts to do the same. Encouraging all Girl Scout troops to serve healthy snacks at meetings and using positive reinforcement as well as modeling is a cost effective and definitive way to ensure more scouts receive obesity prevention

education.

Sustainability and Future Scholarship

The DNP student will meet with the troop leader and Scouts to share the results of the study once the data analysis and project is complete. The troop leader will be provided with a summary of the results to share with the parents of the troop members as well. The troop leader verbalized interest in incorporating the KidsFit curriculum into her younger daughters' troop as well, on an age appropriate level. The Girl Scout troop that participated in the study has since taught a Brownie Troop (younger Girl Scouts) the knowledge they learned and how to make healthy choices. They used the knowledge they gained from the DNP student and as a group educated the younger troop. This was done without the assistance of the DNP student and as part of a badge they were working on earning as well as a way to pay it forward and help another group of girls.

Any troop leader may attend the KidsFit training session offered by RWJBarnabas Health and incorporate the program within their troop. Girl Scouts of America can purchase the KidsFit Program and offer it to any troop nationwide who wanted to incorporate it within their troop. Program coordinators from the RWJBarnabas KidsFit team will receive the results from this DNP project, which will not contain any identifying information. The DNP student will work with the RWJBarnabas KidsFit team in the future to determine other community settings that can benefit from the use of the KidsFit program. The DNP student will also write to the Girl Scouts of America informing them of the project and the benefits of implementing it into each level of the Girl Scouts. In addition, as the trained instructor, the DNP student can recommend to her future employment practice the implantation of the KidsFit program that she can develop and build into that practice. She can use what she learned from teaching the Girl Scouts and modify

it to work better with groups of patients. The DNP student would like to work with the KidsFit team to help improve the curriculum to better achieve behavior modification and increase knowledge. She would plan to help create a program that provides guidance for other instructors to better educate children and tie in behavior modification techniques to help achieve more favorable results.

Conclusion

The KidsFit Program was successful at improving knowledge and behaviors related to health when instituted with a Junior Girl Scout troop. Although behaviors did not change as much as the Girl Scouts knowledge did, there was still improvement, which is the first step-in long-term success. In addition, continued reinforcement by the Troop leader at future meetings can help create more positive changes. The KidsFit program is new and there is room to make improvements. Policies still have to be adjusted to enhance the amount of physical activity in schools and improve the access to healthy foods while at school. Changing and creating policies take years to develop, so having access to other resources now is critical to helping create a change. Having a successful program available to pediatricians, endocrinologists, schools and group programs, is the first step to helping more children lead healthier lives. Involving the Girl Scout of America with the KidsFit program will provide millions of girls the knowledge and tools they need to battle the development of obesity. Modifying behavior early in childhood and educating children on the benefits of healthy foods and exercising is the first step in preventing childhood obesity.

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Appendix A

Table of Evidence

Article Number	Author	Evidence Type	Sample Size, Setting	Finding that help EBP question	Observable Measures	Limitations	Evidence Level, Quality
1	Jester et al., 2018	Quasi-Experimental	60 pediatric patients between 2-17 years old with a BMI equal to or greater than the 85 th percentile for their sex and age. Done in Pediatric primary care practice in Georgetown, DE	Pediatrician provided one-on-one education to patients and parents on healthy lifestyle using the 5-2-1-0 campaign. There was no control group No significant change in BMI or blood pressure There was an improvement in healthy dietary and physical activity measures	Data for BMI, blood pressure, and behavioral measures collected before intervention and at 1- and 2-months after intervention. Behavioral measures included self-reported amount of fruits and vegetables consumed in a day, number of hours spent watching television each week, number of hours for physical activity each week,	Participants were recruited based on convenience sampling and limited to one site. potentially creates selection bias. Most participants were of Hispanic ethnicity, which may limit the generalizability of results Lack of a control group to compare results	II/B

				Behavioral measures continued to improve 2 months after the intervention. Most participants self-reported that they met their goals 2 months after intervention.	number of sugary drinks consumed each day, whether personal or parental goal was met.	Limited timeframe which did not allow enough time to assess the difference in BMI or blood pressure, or if healthy behaviors were maintained over time.	
2	Castro et al., 2013	Pilot study, quasi-experimental	60 families in a low-income community (Orange County, North Carolina) with at least one child aged 6 years or younger (120 children total). The project took place in	Implementation of Growing Healthy Kids program to prevent childhood obesity among low-income families. This program provides access to information about proper nutrition and healthy eating while allowing families to participate in growing	Pre- and post-program changes in 3 variables: 1) BMI classification – of the baseline data, 36 children had a BMI classification of obese or overweight. Of 23 children classified as obese, 3 ($p < 0.05$) had achieved BMI classification of	Lack of control group for comparison Nonrandomized sampling limits generalizability of findings Need for a longitudinal study design with larger sample size to provide stronger evidence	II/B

			<p>three different community gardens in Carrboro, North Carolina (an elementary school, a community park, and land owned by a utility company)</p> <p>fresh vegetables. Program includes weekly gardening sessions, cooking and nutrition workshops, and social activities.</p> <p>Use of community gardens increases access to nutritious foods in low-income communities.</p> <p>When individuals participate in a community garden, they consume more fruits and vegetables.</p> <p>Local communities can be mobilized to take action for childhood obesity prevention.</p>	<p>overweight at post-program. Of 13 children with baseline classification of overweight, 3 ($p<0.03$) had achieved BMI classification of normal. Children with normal BMI at the beginning, remained normal BMI post-program.</p> <p>2) Number of fruits and vegetables available in the home: There was an increase in number of fruits available to children in homes over the program period increasing from 1.75 to 4.3, 146% percentage increase ($p<0.001$). Increase in</p>	<p>Lack of a standardized measure to assess fruit and vegetable intake</p> <p>Need for replication of this program in other communities to test feasibility in communities with different characteristics</p>	
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				Community leaders and all residents have the ability to partner, collaborate, expand and enrich childhood obesity prevention initiatives/policies.	number of vegetables from 3.5 to 4.3, 123% increase ($p<0.001$) after program. 3) number of fruits and vegetables children consumed each day: increase in fruit from 3.2 to 7.8, 28% increase ($p<0.001$). Increase in vegetable from 2.1 to 2.8, by 33% ($p<0.001$).		
3	Manger et al., 2011	Quasi-Experimental	697 first grade children in Pittsburgh from different schools. 29 schools participated in this study, using the school	The VITAL program was implemented in the 14 intervention schools while the curriculum of the other 15 control schools remained unchanged. The VITAL program included 8 different	To examine the impact of the program on participants, measures included: 1) BMI: decrease in BMI was not significant. However, in the control group 43 children were initially classed as	This is a pilot program in the town of Pittsburgh – the program needs to be implemented in other settings and schools to determine	II/B

			as the setting. 14 schools were used as the intervention group, and 15 schools as controls.	weekly lessons that included games and physical activity to teach young children healthy eating and appropriately physical activity. The VITAL program also provided received age-appropriate reading material, simple exercise equipment, and pedometers. Teachers received a curriculum guide, a DVD that describe VITAL, and a booklet containing information about healthy eating, appropriate physical activity, and dietary	obese, which decreased to 29 at the end (32%). In the intervention group, of the 54 participants considered obese, 20 moved to a lower category at the end of the study (37%) 2) parents-reported questionnaires requesting their observation on the effectiveness of the VITAL in changing eating and exercise habits: Parent observed increase in consumption of healthier foods from 60% pre-implementation to 80% after. Parent	the effectiveness.	
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				<p>approach to stop hypertension (DASH) diet. Parents were shown the DVD during parent-teacher meetings to understand the program better.</p> <p>One of the most effective ways of combating childhood obesity is prevention in young children, since changing ingrained lifestyle habits in older children and adults is often extremely difficult.</p> <p>Young children are more anxious to learn and participate</p>	<p>observed increase in exercise frequency from 56% to 76% after the program</p> <p>3) Teachers and parents' evaluation of the VITAL program: 80% of teachers at the school rated the program as good to excellent in promoting good nutrition, and 77% rated it good to excellent as promoting physical activity. 78% of parents reported that the VITAL program was good or excellent in influencing lifestyle of their children and were pleased to have this program in</p>		
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				in healthy lifestyle. A review of intervention programs concluded that it would be most effective to focus on both dietary and physical activity than on dietary behavior alone.	the curriculum		
4	Nabors et al., 2015	Quasi-Experimental	Total of 64 children: School #1 had 17 students in intervention and 6 students in control group. School #2 had 29 children in intervention group, 12 in	Intervention group selected to participate in the program, while the control group selected other after school groups, such as science club and yearbook club. Intervention group received weekly sessions at both schools focusing on	Parents completed surveys to determine their satisfaction with the program and assess whether they were receiving and using health recipes. Pre- and post-intervention questionnaires assessing fruit consumption, vegetable	Samples of convenience Comparison groups were not matched groups Non-compliance with survey completion at end of the program Curriculum and level of engagement in	II/C

			control group	<p>red and green light foods and the importance of exercise. Goal setting was completed with a coach at both schools focusing on one personal healthy eating and exercise goal per week. Parents received handouts with information and recipes. Parents were satisfied with the program.</p> <p>Young children are able to learn about healthy eating behaviors in a short period of time. Reported understanding and identifying</p>	<p>consumption, chips and fries consumes, sweets consumption, and number of days exercised in the past week.</p>	<p>physical activity was different between schools</p> <p>Limited to two communities – need to implement existing prevention programs in other settings to promote health knowledge to young children</p>	
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				<p>foods considered “red light” versus “green light”.</p> <p>Increased in exercise post-intervention. Increase in fruit and vegetable consumption post-intervention. Strong significance for a decrease in sweets consumption post-intervention.</p> <p>Motivational interviewing is successful only if children are overweight.</p>			
5	Greening et al., 2011	Randomized Control	Total of 450 students aged 6 to 10-years-old.	The intervention school received an 8-month intervention program: monthly family	Data was collected and compared pre- and post-intervention: height, weight,	Duration of intervention was too short to notice significant differences in BMI	I/B

			<p>Two schools (randomly selected one as control, other one as intervention) with comparable demographic data in Mississippi</p>	<p>events that included nutrition and physical activities/contests, changes to the school's food service including replacing deep frying equipment with baking ovens.</p> <p>The control school followed the state's standard health curriculum: didactic nutrition education, health information incorporated into academic lessons, and weekly physical education classes.</p> <p>Intervention group had decline in percentage body fat ($P=0.02$), reported</p>	<p>waist circumference, percentage body fat, performance on three fitness tests, nutrition knowledge, and self-report physical activity.</p> <p>Parents nutritional knowledge was also assessed using 17-item Child Dietary Fat Questionnaire pre- and post-intervention.</p>	<p>($P=0.12$) and weight circumference (0.92).</p> <p>Lack of appropriate fitness and biological markers for measuring childhood obesity</p>	
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				<p>more physical activities (P=0.04), improvement in dietary fat intake (P<0.00005), improvement in two of three fitness tests (P<0.0001, P<0.0001). Control group stayed the same or declined in all categories.</p> <p>Parents of the intervention group also had significant improvement in dietary habits (P=0.04).</p>			
6	Tucker & Lanningham-Foster, 2015	Meta-analysis	Two elementary schools (A&B) 72 children A=50	<p>Nursing students were trained in the 5-2-1-0 curriculum</p> <p>Study ran from</p>	Baseline and end of year data collected on BMI percentile, healthy habits and	Strategies of teaching were different because of a rotation of nursing	I/B

			<p>B=22 students</p> <p>September - April, delivered in classroom by the school nurse with weekly on site 1:1 coaching delivered by senior nursing students on child PA levels and health behavior change.</p> <p>Changes in BMI and Healthy Habits Survey items from baseline to end of the year evaluated. P values < .05 were considered significant.</p> <p>School A: 19 fourth graders and 31 fifth graders mean age 9.8. BMI did not change significantly, but the</p>	<p>PA. BMI calculated based on CDC growth charts. Students answered questions from healthy habits survey (Let's Go 5-2-1-0) that addressed nutrition, screen time, PA and family eating patterns. Step Watch Activity Monitor was worn</p>	<p>student halfway through semester at one program.</p> <p>They could only count the activity tracker activity if worn from 7a-10pm</p>	
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				<p>number of servings of fruit and vegetables increase from baseline to end of the year, fruit juice consumption decreased, whole milk intake decreased, active play increased.</p> <p>School B: 22 fourth graders, mean age 9.5. Fruits and vegetable consumed increased PA level increased.</p> <p>Neither demonstrated significant decrease in beverage consumption.</p>			
7	Watson, et al., 2016	Semi-structured interviews	14 children (8 males,	MEND (mind, exercise,	Participants were interviewed	It was a small self-selected	III/B

			<p>6 female) between 11 and 14 years old</p> <p>nutrition. Do it!) is the UK's largest childhood obesity program</p> <p>Children enjoyed the program when they were able to be interactive and participate in individual feedback.</p> <p>Program is a community-based program for kids 7-13, it's a 12-week program that met twice a week for 1-2 hours. A family member is required to attend</p> <p>Unhealthy lifestyle behavior peak during adolescents.</p> <p>Fun was the most</p>	<p>a year after completing one the MEND obesity program. They were interviewed in the post treatment maintenance period where most behavior changes are seen.</p>	<p>subgroup of participants, so all participants views were not taking into account</p> <p>The actual amount of weight loss and lifestyle changes were not a focus</p>	
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				common theme among students-- fun was experienced through active doing (exercise, activities, sports, games)			
8	Lloyd et al., 2011	Pilot implementation	<p>Pilot 1 8-11-year old (119 children from three age groups) 8-9 9-10 10-11</p> <p>Pilot 2 77 children aged 9-10</p>	<p>Describes development of Healthy Lifestyles Program (HELP), a school-based intervention to prevent obesity in children.</p> <p>In first phase of pilot study 9-10-year olds were most receptive and implement changes then older or younger children</p>	<p>Height, weight, waist circumference, % body fat, physical activity and food intake as well as Screen time, and viewing habits were evaluated</p> <p>Intervention focuses on reduction of the consumption of sweetened fizzy drinks, increase in the proportion</p>	Was a better explanation of the basis of creating a successful program but does not discuss implementing program in large scale trail.	I/A

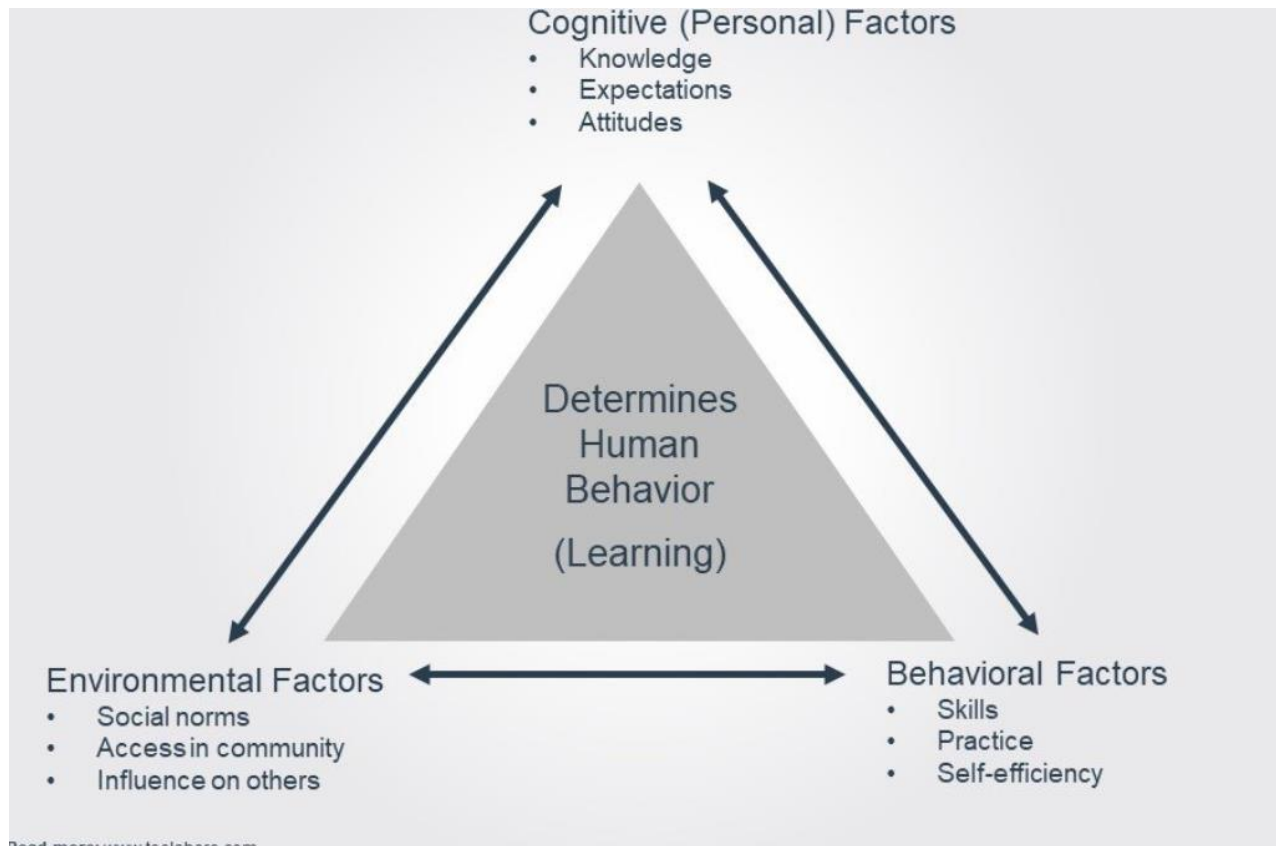
				<p>Good for us to demonstrate use of social cognitive theory</p> <p>Pilot 1: positive behavior changes Suggested more activities for kids</p> <p>Pilot 2 Improved self-esteem and more lifestyle changes made</p>	<p>of healthy snacks consumed and reduction of TV viewing and other screen-based activities to improve and increase physical activity</p> <p>Intervention mapping was used to plan a school-based obesity prevention program.</p> <p>HAPA model was used to provide framework for implementation. It is consistent with behavior changes including social cognitive theory and control theory.</p>		
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9	Salvy et al., 2012	Systematic review	Social facilitation of eating and activities	<p>Peers and friends impact eating and physical activity.</p> <p>Presence of peers and friends increases children's energy intake, and modeling is main reason that accounts for the effects of peer influence on healthful eating.</p> <p>Having peers to play with facilitates physical activity in children while being alone deter physical activity</p>	Social facilitation, impression management and modeling in addition to normative framework	Not many studies discuss how peers influence youths eating and physical activity	III/A
10	RWJBarnabas Health, 2019	Quasi experiment	In the 2016-2017 school	Preprogram knowledge was 64%, post	14% increase in reading nutrition	Not sure how many students or how	II/A

			year, KidsFit was implemented in Newark school system	program knowledge was 80%	label, 11% increase in avoiding soda, 6% decrease drinking juice, 5% increase in daily fruit consumption, 5% increase in daily vegetable consumption, 5% increase in choosing low fat/fat free milk, 3% increase in meeting daily exercise requirements	many schools were involved in this study.	
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Appendix C

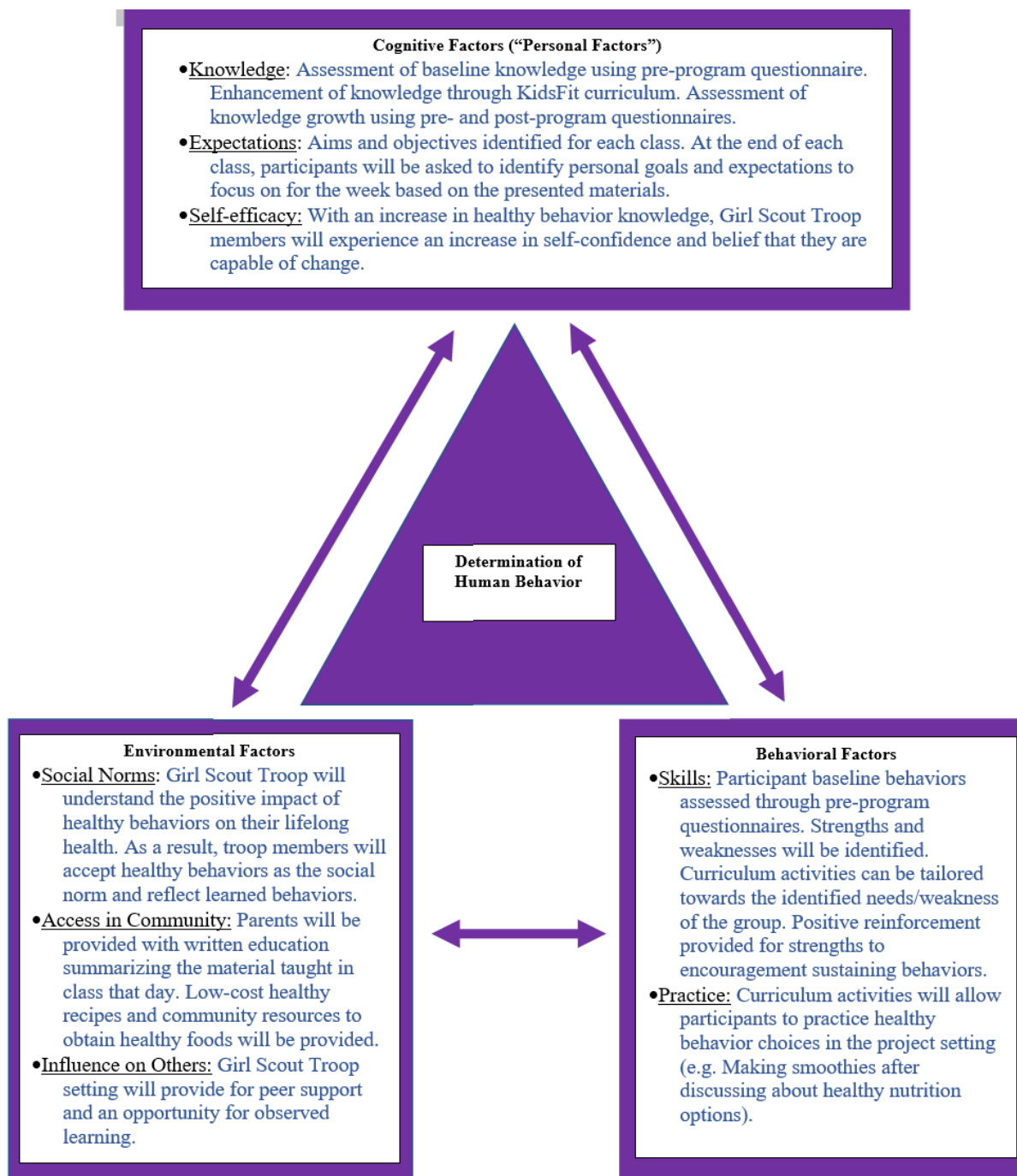
Social Cognitive Theory



Janse, B. (2018). Social Learning Theory. Retrieved March 24, 2019 from ToolsHero: <https://www.toolshero.com/psychology/social-learning-theory/>

Appendix D

Social Cognitive Theory with KidsFit



Appendix E**Food Frequency and Lifestyle Habits Questionnaire**

Name: _____ Date: _____

Food Frequency and Lifestyle Habits Questionnaire

Finish the sentence by checking the appropriate circle

1. I eat breakfast <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	5. I eat vegetables besides corn or potatoes <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never
2. I drink low-fat or fat-free milk <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	6. I eat lunch <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never
3. I drink water <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	7. I read nutrition labels <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never
4. I eat fruit <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	8. I eat home prepared meals <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never

Name: _____ Date: _____

Food Frequency and Lifestyle Habits Questionnaire (continued)

Finish the sentence by checking the appropriate circle

9. I drink soda <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	14. I eat sweets (candy,cookies,cakes) <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never
10. I drink juice <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	15. I eat chips <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never
11. I drink whole milk <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	16. I spend an hour or more exercising or organized sports <input type="radio"/> Yes <input type="radio"/> No
12. I eat at restaurants or fast food <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	17. I spend an hour or more Walking or doing chores <input type="radio"/> Yes <input type="radio"/> No
13. I eat fried foods <input type="radio"/> Everyday <input type="radio"/> Most days (4-6 days) <input type="radio"/> Sometimes (1-2 days) <input type="radio"/> Rarely (1 time a month) <input type="radio"/> Never	18. I spend 1 hour or more per day on Screens which includes watching TV, on the phone, computer or playing video games <input type="radio"/> Yes <input type="radio"/> No

 Approval Date: 9/30

Appendix F

Nutrition and Physical Activity Pre & Post Test

Name: _____ Date: _____

Nutrition and Physical Activity Pre & Post Test:

Please circle your answer

1. How many food groups are in MyPlate?
a. 4 b. 5 c. 6
2. To have a healthy weight, one must eat right and be physically active
a. True b. False
3. How many minutes of physical activity should you try to get each day to be healthy?
a. 10 minutes
b. 60 minutes
c. 120 minutes
4. How much of your plate should be filled with fruits and vegetables at each meal?
a. 1 piece of broccoli
b. Half your plate
c. Enough to fill you up
5. Eating dairy helps strengthen which part of your body?
a. Muscles and eyes
b. Skin and hair
c. Bones and teeth
6. Which of the foods below are high in fat?
a. Cheeseburger, french fries, whole milk
b. Grilled chicken, turkey 1% milk
c. Soda, candy, gum
7. What information is NOT given on a Nutrition Facts Label?
a. Calories
b. Serving size
c. How to prepare the food
8. Fruit juice is a healthy beverage and should be consumed at every meal
a. True b. False
9. A good source of plant protein is
a. Beans, nuts, seeds
b. Pretzels and chips
c. Carrots and bread
10. Which of these foods is a healthy snack that is low in fat, salt, and calories?
a. Chips
b. Fruit roll ups
c. Popcorn without butter
11. Which of the following is considered a healthy breakfast?
a. Pop tart
b. Scrambled eggs & whole grain toast
c. Lucky Charms cereal with whole milk
12. The healthiest food to eat when you go to a restaurant is
a. Fried chicken and biscuits
b. Cheeseburger and french fries
c. Grilled chicken sandwich with apples
d. Pepperoni pizza with soda
13. What is an example of a food or drink that can weaken our bones?
a. Calories b. Soda c. Low-fat milk
14. What is an example of one serving of fruit?
a. One piece of lettuce on a burger
b. A strawberry pop tart
c. One small apple
15. Fast foods such as hamburgers, chicken nuggets, & pizza contain too much
a. Sugar
b. Salt and fat
c. Vitamin A
d. Fiber
16. Skipping meals is part of a healthy diet
a. True b. False
17. Our bodies need _____ for energy
a. Water b. Exercise c. Calories
18. What is the most amount of sugar we should have a day?
a. 100g b. 5g c. 24g
19. Which food fits into both the grains group and the dairy group?
a. Burger
b. Chicken and rice
c. Macaroni and cheese
20. I use energy when I
a. Breathe and sleep
b. Run and jump
c. All of the above

Appendix G

Site Agreement

Date: February 17, 2019

Re: Letter of Cooperation for [REDACTED]

Dear Ms. Jennifer Olas,

This letter confirms that that I, as an authorized representative of [REDACTED] allow DNP Student, Co-Investigator Jennifer Olas and team member Tiffany Meng access to conduct study related activities at the listed site(s), as discussed with the Co-Investigator and briefly outlined below, and which may commence when the DNP Student provides evidence of IRB approval for the proposed project.

- Research Site(s): [REDACTED]
- Funding Agency: RWJBarnabas Health will provide the KidsFit curriculum. The National Association for Pediatric Nurse Practitioners provided a \$1000 grant.
- Study Purpose: The purpose of this study is to evaluate the effectiveness of Implementing the KidsFit obesity prevention program to a troop of girl scouts ages 9-11 to increase Knowledge and Behaviors related to Nutrition and Exercise.
- Study Activities: Consent will be obtained from parents. Assent will be obtained from Children. Children will be educated on the benefits of nutritious foods and physical activity weekly for 6 weeks. Pre- and post-questionnaire will be given to children at the start of the program and at the end of the program. The girls will receive a badge at completion of the project.
- Subject Enrollment: The participants must be members of Girl Scouts and between the ages of 9-11 years old.
- Site(s) Support: Access to troop members as participants and assistance in distributing permission forms and questionnaires to parents of troop members will be assisted by the troop leader. The recreation center will provide space for meetings.
- Data Management: Participants will be identified by a number. The amount of steps/physical activity from their trackers will be collected weekly. Demographic data will be completed by the parents, and questionnaires completed by participants. Data will be entered in a password protected Microsoft word, excel, and SPSS analysis file.
- Other: Fitness tracking devices will be provided to each participant so the researcher can identify if there was an increase in activity as the study progressed. This data will be collected weekly.
- Anticipated End Date: The program will be instituted in the fall of 2019 and anticipated conclusion date in Fall Of 2019.

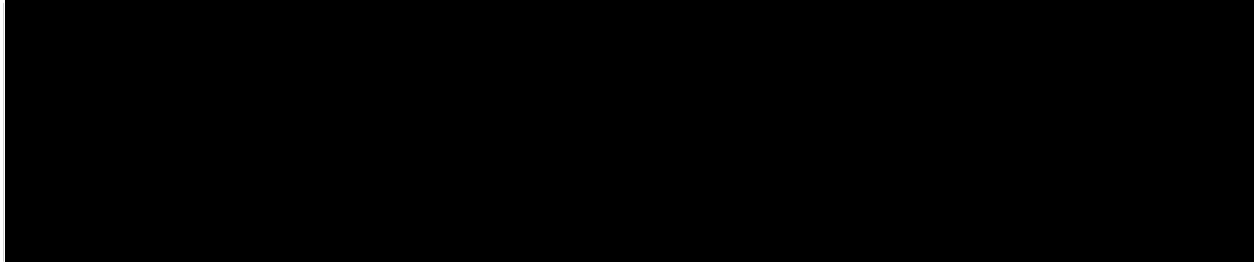
We understand that this site's participation will only take place during the study's active IRB approval period. All study related activities must cease if IRB approval expires or is suspended. I understand that any activities involving Personal Private Information or Protected Health Information may require compliance with HIPAA Laws and Rutgers Policy.


Our organization agrees to the terms and conditions stated above. If we have any concerns related to this project, we will contact the Principal Investigator. For concerns regarding IRB policy or human subject welfare, we may also contact the Rutgers IRB (see orra.rutgers.edu/hssp).

A CHILDHOOD OBESITY PREVENTION PROJECT: IMPLEMENTATION OF THE KIDSFIT PROGRAM AMONG A GIRL SCOUT TROOP TO INCREASE KNOWLEDGE AND BEHAVIORS RELATED TO NUTRITION AND EXERCISE

[REDACTED]
Approval Date: 9/30

Regards,




Approval Date: 9/30

Appendix H

Recruitment Flyer



RUTGERS
School of Nursing

A Childhood Obesity Prevention Project: Implementation of the KidsFit Program among School-aged Scouts to Increase Health Knowledge and Behaviors Related to Nutrition and Exercise

Purpose: This research study is being done to examine the effectiveness of a childhood obesity prevention program to increase children's knowledge and behaviors related to nutrition and physical activity.

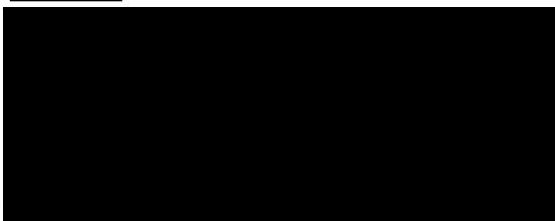
Description: The KidsFit childhood obesity prevention program, established by RWJBarnabas Health, will be implemented among school-aged Scouts to examine its effectiveness to increase health knowledge and behaviors. The program will consist of classroom instruction and enhanced by engaging age-appropriate activities.

Benefits: The benefits of taking part in this research study may be improved health knowledge and lifestyle behaviors. Participants may choose to consume more fruits and vegetables and engage in more physical activity. Participants will gain social support and encouragement from their peers as they learn healthy behaviors together. However, it is possible that he may not receive any direct benefit from taking part in this research study.

Participants: All Girl/Cub Scout Troop members within the ages of 8 to 11 years old (rising Third to Fifth graders in September 2019) are eligible to participate in this research.

Cost: There is no monetary cost to participate in this research study.

Locations:



Time/Date: This research project will begin in early fall 2019. The meeting will take approximately 45 minutes to 1 hour every week, for 6 weeks total.

For more information, questions, or comments, please contact:

Girl Scouts: Jennifer Olas MSN, RN-BC at [REDACTED]

Cub Scouts: Tiffany Meng BSN, RN at [REDACTED]

[REDACTED] Approval Date: 9/30/19

Appendix I

Parental Consent



Rutgers, The State University of New Jersey
65 Bergen Street-Room 1126
Newark, NJ 07107-3001

www.nursing.rutgers.edu
Phone: (973) 972-4307
Fax: (973) 972-8947

PARENTAL PERMISSION TO PERMIT CHILD TO TAKE PART IN RESEARCH

TITLE OF STUDY: A Childhood Obesity Prevention Project: Implementation of the KidsFit Program Among School-aged Scouts to Increase Knowledge and Behaviors related to Nutrition and Exercise.

Principal Investigator: Dr. Ganga Mahat, EdD, RNBC

Co-Investigators: Jennifer Olas RN-BC, MSN, Pediatric Nurse Practitioner, Doctor of Nursing Practice (DNP) student; Tiffany Meng RN, BSN, Pediatric Nurse Practitioner, DNP student

Team Member: Kimberly Sacoto, Undergraduate Nursing student

STUDY SUMMARY: This consent form is part of an informed consent process for a Doctor of Nursing Practice (DNP) Project and it will provide information that will help you decide whether you want your child to take part in this research study. It is your choice for her to take part or not. The purpose of this study is to determine if the KidsFit program is effective in increasing health knowledge and behaviors among Scouts age 8-11 years old. If your child takes part in the study, he/she will be asked to participate in a group discussion based on the KidsFit obesity prevention curriculum. He/She will be asked to recall what he/she ate the day before meetings and learn how food works within our bodies. His/her time in the study will take six weeks. He/she will attend meetings for one hour each week. Possible harms or burdens of taking part in the study may be a loss of time, and any harm that occurs with a group of children in one location such as tripping, falling off a chair, paper cuts or being accidentally bumped into by another child. There is also the potential risk of your child thinking they are participating in this program because of their weight. The possible benefits of taking part may be improved health, and an increase in fruit and vegetable consumption as well as physical activity. There is also a chance that the participants will not receive any benefits from taking part in this study. Your child's alternative to taking part in the research study is not to take part in it.

The information in this consent form will provide more details about the research study and what will be asked of your child if you permit him/her to take part in it. If you have any questions now or during the study, you should feel free to ask them and should expect to be given answers you completely understand. After all of your questions have been answered and you wish your child to take part in the study, you will be asked to sign this permission form. You are not giving up any of your child's legal rights by permitting him/her to take part in this study or by signing this parental permission form.

Who is conducting this research study?

Dr. Ganga Mahat is the Principal Investigator of this research study. Jennifer Olas and Tiffany Meng are the Co-Investigators. Jennifer and Tiffany are a doctorate students at Rutgers, The State University of New Jersey, School of Nursing. The Co-Investigators have the overall responsibility for the conduct of the study. Jennifer will primarily be working with the Girl Scout Troop; while Tiffany will primarily be working with the Cub Scout Troop. However, there are often other individuals who are part of the research team. Kimberly Sacoto is a team member and Undergraduate Nursing student; she may be helping with meetings and data analysis.

Dr. Ganga Mahat, EdD, RNBC may be reached at [REDACTED]

Jennifer Olas MSN, RN may be reached at [REDACTED]

Tiffany Meng BSN, RN may be reached at [REDACTED]

The Co-Investigators or another member of the study team will also be asked to sign this informed consent. You will be given a copy of the signed consent form to keep.

Rutgers, The State University of New Jersey

[REDACTED]
Approval Date: 9/30

Why is this study being done?

This research study is being done because it is a requirement for the Co-Investigators, Jennifer Olas and Tiffany Meng, to complete a DNP Project for their DNP degree. Therefore, this particular study is being done to see if the KidsFit program will help increase children's knowledge and behaviors on topics related to nutrition and physical activity. We hope to identify a program that is beneficial in teaching children proper nutrition and exercise habits to help prevent childhood obesity. It is being done with a Girl Scout and Cub Scout troop to see if implementing this program is successful among a small group of peers.

Who may take part in this study and who may not?

Scouts between the ages of 8 and 11 are allowed to take part in this study if their Troop Leader agrees for the troop to participate. The troop member must understand and speak English to participate and be able to participate in their regular Scout Meetings. If a child has an existing condition, or disability, but is able to regularly attend Scout meetings, then there are no anticipated difficulties preventing their participation in the study. If a child is in a wheelchair or has a physical disability but is able to participate in regular Scout meetings, then he/she will be able to participate in the activities of this study. Pedometer readings will not be evaluated for any participant in a wheelchair. Pedometer readings will not affect the overall results of the research, as this is an added outcome measure. However, the child will still be able to receive the education and participate in the other activities. If the child's existing psychological/physical condition becomes too overwhelming for the child to participate in the research meetings, they can decline to participate or end participation at any time.

Inclusion Criteria

- The participants will be girls and boys aged 8-11 years old who are currently a member in Girl Scouts or Cub Scouts.
- They must understand and speak English to participate.
- The Troop Leader must agree to participate.
- The participant must be able to attend and participate in regular troop meetings to participate in the study.
- If a child is in a wheelchair or has a physical disability but is able to participate in regular Scout meetings, then he/she will be able to participate in the activities of this study. Pedometer readings will not be evaluated for any participant in a wheelchair.

Exclusion Criteria

- Participants outside the range of 8-11 will not be eligible to participate.
- Children who are not currently in the Girls Scout or Cub Scout Troop cannot participate.
- Scouts cannot participate if their Troop Leader does not agree to participate.
- Scouts with an existing condition that prohibits them from participating in their normal Scout meetings will not be able to participate.

Why has my child been asked to take part in this study?

Your child is being asked to participate in this research because they are a member of either the Girl Scouts or Cub Scouts and are between 8 and 11 years old. This is the recommended age to institute an obesity prevention program.

How long will the study take and how many subjects will take part?

The study will take six consecutive weeks and we will meet once a week for an hour each meeting. One Girl Scout troop has been asked to participate and up to 20 girls may participate. One Cub Scout troop has been asked to participate and up to 20 boys may participate. The KidsFit curriculum was created to use in the classroom setting, therefore, it is not desirable to institute the program in a larger than a traditional classroom setting to ensure the students all receive adequate attention.

What will my child be asked to do if he/she takes part in this study?

Your child will be asked to attend the six meetings. During the first meeting, he/she will be asked to complete a Nutrition and Physical Activity Test and Food Frequency and Lifestyle Habits Questionnaire so we can determine what he/she already knows about nutrition and get a baseline assessment of his/her nutrition behaviors. During each subsequent meeting, he/she will be asked to listen to the lesson that covers a different health topic each week. He/She will participate in the activities and occasionally try a new healthy snack. Your child will be given a pedometer (which is hers to keep after the study is over) and is encouraged to wear the tracker every day and document the reading each night. Your child will be given a calendar each week to document her accrued steps at the end of each day. He/She will be asked to complete the same Nutrition and Physical Activity Test and Food Frequency and Lifestyle Habits Questionnaire at the end of the study to assess how much knowledge was gained and how many health behaviors have changed.

Summary of what to expect each week:

During the first meeting, participants will complete the Nutrition and Physical Activity Pre-Test as well as the Food Frequency and Lifestyle Habits Questionnaire. Based on the demographic form that inquires about learning disabilities, the participants will be broken up into two small groups. Those who struggle completing the questionnaire on their own will be grouped together so these students as well as the others are unaware, they are being given more help. The Co-Investigator and team member will each lead a group and will read aloud each question and answers to each group. This will ensure the children have a clear idea of which answer they wish to circle. At this first meeting, each participant will also be given a pedometer to help count the number of steps they complete each day. Completing these assessments provide the Co-Investigator with a baseline understanding of what the children already know and what their food and lifestyle habits are before beginning the program. The children's scores will not be discussed among the group to prevent any child from feeling inferior to any other child due to a test score. The participants will also complete the Daily Food Log, which will be used to learn about the different food groups. This session combines the "New Beginnings" lesson and "Energy Balance" lesson. Participants will complete fun activities to learn how food fuels the body and how we can balance what we eat with activity. The participants will receive their pedometers at the end of the first meeting and are encouraged to document their steps at the end of each day while participating in this study.

During the second meeting, the "MyPlate: Fruits and Vegetables" and the "MyPlate: Grains and Protein" lessons will be discussed. The participants will hand in their fitness logs for the past week and then complete their Daily Food Log. We will discuss the 5 food groups as well as what counts as a serving of fruits and vegetables. They will complete activities that focus on grains and proteins and how all the food groups fit into MyPlate.

The third meeting will focus on dairy and bone health, "MyPlate: Dairy" and "Dairy and Bone Health". They will hand in the fitness logs, we will review their food logs, and will make a smoothie for all participants to try. This entails discussing the role of each ingredient and how it relates to bone health.

The fourth meeting will also entail collecting the fitness log, and time will be spent discussing food labels and how to identify a serving size, calories, fat, salt and sugar. This lesson on "Food Label Investigation" teaches the participants how to read a food label and interpret what each part of the label means.

The fifth meeting will cover "Sugar and Breakfast Cereals" and "Fast Food and Fats" to discuss sugar, breakfast foods, as well as fast food and fats. They will turn in their fitness logs, review the food log, and the participants will discover how much sugar is in a food or beverage and how to select foods that contain less sugar. They will also learn how to choose healthier options from the menu at fast food restaurants and how to identify unhealthy, fatty foods.

During the sixth and last meeting “Healthy Habits for Life”, participants will describe how they have changed their eating habits because of KidsFit and will review the principles of making healthy choices, including exercise. They will turn in their fitness logs. The participants will break back into groups and retake the Nutrition and Physical Activity Post Test, as well as the Food Frequency and Lifestyle Habits Questionnaire. These will help determine the success of the program in educating and increasing behaviors that lead to improved health.

What happens if my child has a learning disability and needs help taking the Nutrition Test and Habits Questionnaire?

Parents will be asked to complete a Demographic Survey, Allergy and Learning Questionnaire before the study begins. This Questionnaire asks about your Child's age, grade, family income and ethnicity. It also asks about food allergies and learning disabilities, as well as how we can help your child if they need extra help learning. Based on this demographic form that inquires about learning disabilities, participants will be broken up into two small groups. Those who struggle completing the questionnaire on their own will be grouped together so these students as well as the others are unaware they are being given more help. The Co-Investigator and team member will each lead a group and will read aloud each question and the answers to each group. This will ensure the children have a clear idea of which answer they wish to circle.

What are the risks and/or discomforts my child might experience by taking part in this study?

There will be minimal potential risks to the participants. The potential minimal risks that participants may encounter include minor physical injuries that are unforeseen but may occur from program activities. These minor injuries may include, but are not limited to, accidental paper cuts from handling paper or doing a craft, falling when performing physical activity and accidental contact with furniture or other children during exercise activities. Rules and behavior guidelines will be discussed with the Scouts during the first meeting to help minimize these risks. Some activities include simple recipe making and participants are encouraged to try the snack. There is a risk that the participants will not enjoy the new food item. When food is involved, there is always a risk of the participants being allergic to a food item or choking. However, care will be taken regarding allergies based on the information gathered from parents about child's allergy. In addition, the Co-Investigator, Jennifer, is certified in Cardiopulmonary Resuscitation (CPR) and Pediatric Advanced Life Support (PALS). The other Co-Investigator, Tiffany, is certified in Cardiopulmonary Resuscitation (CPR) and Adult Cardiac Life Support (ACLS).

Another possible risk is developing a stigma if the participants family does not eat a lot of fruits and vegetables or cannot afford to buy them. During the study, participants will only discuss what they ate the day before to help them learn about food groups, their family's finances will not be discussed.

There is also a risk that an inadvertent loss of confidentiality may occur, but all steps to keep the data confidential will be taken. There is no personal information discussed during the sessions except the children write down what they ate the day before. It is alright if they choose to discuss their daily foods eaten outside of the group, this is not confidential information.

Psychological harm is also rare but includes participants believing they are participating in this study due to their weight or current eating habits. This project's goal is to increase knowledge and healthy eating behaviors to prevent the development of obesity and its associated health consequences. The participants will not be weighed at any time before or during this project. They may also feel disappointed that they did not achieve the most steps as determined by their weekly activity tracker log. Socially, participants may miss out on other events that may occur while they

attend meetings each week and may feel the meetings are a waste of time. There is also a chance that the participants will not receive any benefits from taking part in this study.

What are my alternatives if I do not want to take part in this study?

There are no alternative studies available. Your alternative is not to allow your child to take part in this study. Your child may participate in other activities as directed by her troop leader during this time.

How will I know if new information is learned that may affect whether I am willing to allow my child to stay in the study?

During the course of the study, you will be updated about any new information that may affect whether you are willing to allow your child to continue taking part in the study. If new information is learned that may affect your child after the study or their follow-up is completed, you will be contacted.

Will I receive the results of the research?

The Co-Investigator will meet with the troop leader, Scouts and Parents who are interested to share the aggregate results of the study once the data analysis is complete. The troop leader will also be provided with a description of the aggregate results to share with the parents of the troop members who were unable to attend the follow up meeting. All results will be aggregate data to protect confidentiality.

Will there be any cost for my child to take part in this study?

There is no cost to participate in the study.

Will my child be paid to take part in this study?

Your child will not be paid to participate in this study, but he/she will earn a patch for completion of the program and he/she is also allowed to keep the pedometer that will be given to him/her. As an incentive, participants will be given a pedometer at the beginning of the study that they may keep as an encouragement to engage in daily physical activity. As part of the KidsFit curriculum, there will be some group challenges and activities during certain meetings. Winners of these activities may receive prizes such as water bottles, measuring cups, and jump ropes. Participants will also receive a "badge" for their Girl Scout/Cub Scout uniform at the completion of the program. The badge will be a nutrition and fitness badge to display on their uniform symbolizing completion of an activity. The Scout will not receive a "badge" if they do not complete the study.

Who might benefit financially from this research?

The Co-Investigators will also meet with the creators of the KidsFit program at RWJBarnabas Health to present the aggregate results in hopes to improve the program for future use in different populations. There will be no raw data released to the RWJBarnabas Health team.

How will information about my child be kept private or confidential?

All efforts will be made to keep your child's personal information confidential, but total confidentiality cannot be guaranteed. At the beginning of the project implementation phase, all participants will be assigned a number. The names and identifying numbers for participants will be documented in an excel document that will be stored on the Co-Investigator's password and fingerprint locked computer. The Consent, Assent and Demographic Questionnaires are the only documents that have identifying information on them. All handouts, test questionnaires, and Daily Food Logs utilized in the program will only contain the participant's assigned project number for confidentiality.

This excel file and the SPSS files used for data analysis with all the non-identifiable information will both be locked in a password and fingerprint protected computer only known and in possession of the Co-Investigator. All the Consents, Assents, and Demographic paperwork that have

identifiable information, as well as the documents with non-identifiable information will be kept in a locked safe in the Co-Investigators home until completion of the study.

What will happen to my child's information collected for this research after the study is over?

Upon completion of the study, all questionnaires, documents collected during the study, Consent, Assent and Demographic Forms will be personally driven by the Co-Investigator to the Primary Investigator's office at Rutgers. These forms will be kept in a locked cabinet in the Primary Investigator's locked office within the Rutgers Newark Nursing Department. The excel file that contains the names and numbers assigned to the participants as well as the SPSS files with the data analysis will be transferred to an encrypted USB drive and that will have a protected password. The USB will also be personally driven by the Co-Investigator to the Primary Investigators office to store in her locked office with all the other documents. All the documents on the encrypted USB will be opened with a password only known to the Primary and Co-Investigator. Unauthorized users will not have access. In addition, the files will be deleted from the Co-Investigators personal computer. All the documents delivered to the Primary Investigators office as well as the USB drive will remain in the Primary Investigators office for six years as per the Institutional Review Board guidelines. After this time, the documents will be shredded, and the USB will be destroyed with a hammer by the Primary Investigator. The broken and damaged pieces will then be discarded.

What will happen if I do not wish my child to take part in the study or if I later decide that I do not wish my child to stay in the study?

It is your choice whether your child takes part in this study. You may choose to have your child take part, not to take part or you may change your mind and withdraw your child from the study at any time.

If you do not want your child to enter the study or decide to stop taking part, their relationship with the study staff will not change, and he/she may do so without penalty and without loss of benefits to which your child is otherwise entitled.

You may also withdraw your permission for the use of data already collected about your child, but you must do this in writing to the primary investigator. Any data that has already been sent to KidsFit or to the Data Coordinating Center cannot be withdrawn because there may not be any identifiers with the data.

Who can I call if I have questions?

If you have questions about your child taking part in this study or if you feel your child may have suffered a research related injury, you can call the Primary Investigator, Dr. Ganga Mahat, [REDACTED] or the Co-Investigators: Jennifer Olas, [REDACTED] Tiffany Meng [REDACTED]

PERMISSION (Authorization) TO USE OR SHARE HEALTH INFORMATION THAT IDENTIFIES YOUR CHILD FOR A RESEARCH STUDY

The next few paragraphs tell you about how investigators want to use and share identifiable health information from your child's Demographic Survey, Allergy and Learning Questionnaire in this research. Their information will only be used as described here or as allowed or required by law. If you sign this consent form, you agree to let the investigators use your child's identifiable health information in the research and share it with others as described below. Ask questions if there is something you do not understand.

What is the purpose of the research and how will my child's information be used?

Your child is being invited to take part in this research study which is described at the beginning of this form. The purpose of collecting and using his/her Allergy information is to keep her safe during the research study and the learning questionnaire is used to help ensure he/she is comfortable answering the questionnaire to determine how much he/she has learned.

What information about my child will be used?

- Any documented allergies will be used to ensure that allergen is not present at any meetings
- Any learning disabilities (if present) will be used to help the research team know how to help your child answer the questions asked during the study.

Who may use, share or receive my child's information?

The research team may use or share your child's information collected or created for this study with the following people and institutions:

- Rutgers University Investigators involved in the Study

Those persons or organizations that receive your child's information may not be required by Federal privacy laws to protect it and may share your information with others without your permission, if permitted by the laws governing them.

Will I be able to review my child's research record while the research is ongoing?

No. We are not able to share information in the research records with you until the study is over. To ask for this information, please contact the Principal Investigator, the person in charge of this research study.

Do I have to give my permission?

No. You do not have to permit use of your child's information. But, if you do not give permission, your child cannot take part in this study. (Saying no does not stop your child from getting medical care or other benefits s/he is eligible for outside of this study.)

If I say yes now, can I change my mind and take away my permission later?

Yes. You may change your mind and not allow the continued use of your child's information (and to stop taking part in the study) at any time. If you take away permission, your child's information will no longer be used or shared in the study, but we will not be able to take back information that has already been used or shared with others. If you say yes now but change your mind later for use of your child's information in the research, you must write to the researcher and tell him or her of your decision: You may contact Jennifer Olas at [REDACTED] or Tiffany Meng at [REDACTED]

How long will my permission last?

Your permission for the use and sharing of your child's health information will last until the study is complete.

PARENTAL PERMISSION FOR CHILD

I have read this entire form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form or this study have been answered.

I am the [☐] parent or [☐] legal guardian of _____ (name of child) and I agree for my child to take part in this research study.

Subject/Child's Name (Print): _____

Parent or Legal Guardian Name (Print): _____

Parent or Legal Guardian Signature: _____ Date: _____

Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed the full contents of the study including all of the information contained in this consent form. All questions of the research subject and those of his/her parent or legal guardian have been accurately answered.

Investigator/Person Obtaining Consent Name (Print): _____

Signature: _____ Date: _____

Appendix J

Adult Consent



Rutgers, The State University of New Jersey
65 Bergen Street-Room 1126
Newark, NJ 07107-3001

www.nursing.rutgers.edu
Phone: (973) 972-4307
Fax: (973) 972-8947

ADULT CONSENT TO COMPLETE DEMOGRAPHIC QUESTIONNAIRE

TITLE OF STUDY: A Childhood Obesity Prevention Project: Implementation of the KidsFit Program Among School-aged Scouts to Increase Knowledge and Behaviors related to Nutrition and Exercise.

Principal Investigator: Dr. Ganga Mahat, EdD, RNBC

Co-Investigators: Jennifer Olas RN-BC, MSN, (Pediatric Nurse Practitioner, Doctor of Nursing Practice student); Tiffany Meng RN, BSN (Pediatric Nurse Practitioner, Doctor of Nursing Practice student)

Team Member: Kimberly Sacoto (Undergraduate Nursing Student)

Who is conducting this research study?

Dr. Ganga Mahat is the Principal Investigator of this research study. Jennifer Olas and Tiffany Meng are the Co-Investigators. Jennifer and Tiffany are Doctor of Nursing Practice students at Rutgers, The State University of New Jersey, School of Nursing. The Co-Investigators have the overall responsibility for the conduct of the study. However, there are often other individuals who are part of the research team. Kimberly Sacoto is a team member and an undergraduate nursing student at Rutgers, The State University of New Jersey, School of Nursing; she may be helping with meetings and data analysis.

Dr. Ganga Mahat, EdD, RNBC may be reached at [REDACTED]

Jennifer Olas MSN, RN may be reached at [REDACTED]

Tiffany Meng BSN, RN may be reached at [REDACTED]

The Co-Investigators or another member of the study team will also be asked to sign this informed consent. You will be given a copy of the signed consent form to keep.

Why is this study being done?

This research study is being done because it is a requirement for the Co-Investigators, Jennifer Olas and Tiffany Meng, to complete a Doctor of Nursing Practice Project for their degree. Therefore, this particular study is being done to see if the KidsFit program will help increase children's knowledge and behaviors on topics related to nutrition and physical activity. We hope to identify a program that is beneficial in teaching children proper nutrition and exercise habits to help prevent childhood obesity. It is being done in a Girl Scout and Cub Scout troop to see if implementing this program is successful among a small group of peers. We're inviting you to complete a demographic survey that provides information about your child's age and grade, as well as your family income and ethnicity.

Who may take part in completing this questionnaire and who may not?

Any parent whose child is participating in the KidsFit and Scouts study is invited to participate in the demographic survey presented. If your child is not participating in the KidsFit and Scouts study, then you may not complete the demographic questionnaire.

Why have I been asked to complete this questionnaire?

Rutgers, The State University of New Jersey

[REDACTED]
Approval Date: 9/30/19

You have been asked to complete this demographic questionnaire because this demographic data will be analyzed as part of descriptive statistics with the data gathered for the KidsFit and Scouts Study.

How Will Information About Me Be Kept Private or Confidential?

All efforts will be made to keep your personal information in your research record confidential, but total confidentiality cannot be guaranteed. All the Consents, Assents, and Demographic paperwork that have identifiable information, as well as the documents with non-identifiable information will be kept in a locked safe in the Co-Investigators home until completion of the study. Upon completion of the study, all questionnaires, documents collected during the study, Consent, Assent and Demographic Forms will be personally driven by the Co-Investigators to the Primary Investigator's office at Rutgers. These forms will be kept in a locked cabinet in the Primary Investigator's locked office within the Rutgers Newark Nursing Department. All the documents delivered to the Primary Investigators office will remain in the Primary Investigators office for six years as per the Institutional Review Board guidelines. After this time, the documents will be shredded.

Will anyone else have access to this information?

The descriptive statistics will be shared with the KidsFit Program Coordinators at the completion of the project. No identifying information will be shared. They will not know the names of participants or any identifying characteristics.

What are the risks of completing this demographic questionnaire?

There is a risk that an inadvertent loss of confidentiality may occur, but all steps to keep the data confidential will be taken. All the consents, assents, and demographic paperwork that have identifiable information, as well as the documents with non-identifiable information will be kept in a locked safe in the Co-Investigators home until completion of the study.

Are There Any Benefits to Me If I Choose to complete this questionnaire?

No, there are no benefits to take part in completing this survey.

What will happen to my information collected for this research after the study is over?

Upon completion of the study, all questionnaires, documents collected during the study, consent, assent and demographic forms will be personally driven by the Co-Investigators to the Primary Investigator's office at Rutgers. These forms will be kept in a locked cabinet in the Primary Investigator's locked office within the Rutgers Newark Nursing Department. All the documents delivered to the Primary Investigator's office will remain in the Primary Investigators office for six years as per the Institutional Review Board guidelines. After this time, the documents will be shredded.

If I don't complete the demographic questionnaire, can my child still participate in the study?

Yes, your child may still participate in the study if you do not complete the demographic portion of the survey. We will, however, still ask you to complete the allergy information and learning disability section of the survey for your child's safety and benefit. Simply put a line through the demographic questions and answer the questions about your child's allergies and learning disabilities.

What will happen if I complete the Demographic Questionnaire, but later decide I do not wish my child to take part in the study?

If you complete the Demographic Survey but then decide you do not want your child to participate, your demographic survey will be destroyed/shredded.

You may also withdraw your permission for the use of data already collected about your child, but you must do this in writing to the primary investigator. Any data that has already been sent to KidsFit or to the Data Coordinating Center cannot be withdrawn because there may not be any identifiers with the data.

Who can I call if I have questions?

If you have questions about completing the Demographic Questionnaire you can call the Primary Investigator, Dr. Ganga Mahat, [REDACTED] or the Co-Investigator: Jennifer Olas [REDACTED] [REDACTED] Tiffany Meng [REDACTED]

Agreement to Participate in Demographic Survey

Subject Consent:

I have read this entire consent form, or it has been read to me, and I believe that I understand what has been discussed. All of my questions about this form and the demographic survey have been answered. I agree to complete this Survey.

Subject Name (Print): _____

Subject Signature: _____ Date: _____

I am the [] parent or [] legal guardian of _____ (name of child) and I agree to complete the Demographic Survey.

Signature of Investigator/Individual Obtaining Consent:

To the best of my ability, I have explained and discussed all the important details about the study including all of the information contained in this consent form.

Investigator/Person Obtaining Consent Name (Print): _____

Signature: _____ Date: _____

[REDACTED]
Approval Date: 9/30/19

Appendix K**Demographic Questionnaire**

Rutgers, The State University of New Jersey
65 Bergen Street-Room 1126
Newark, NJ 07107-3001

www.nursing.rutgers.edu
Phone: (973) 972-4307
Fax: (973) 972-8947

Demographic Survey, Allergy and Learning Questionnaire

Childs Name: _____ **Date:** _____

To help us better understand your family, please answer the following questions:

1. How old is your child?
 - ☐ 8
 - ☐ 9
 - ☐ 10
 - ☐ 11
2. What grade is your child in/ will be in September 2019?
 - ☐ Third grade
 - ☐ Fourth grade
 - ☐ Fifth grade
 - ☐ Other, please specify _____
3. What category does your family's annual income fall into?
 - ☐ Less than \$39,999
 - ☐ \$40,000- \$69,999
 - ☐ \$70,000- \$89,999
 - ☐ \$90,000- \$124,999
 - ☐ More than \$125,000
4. What is your ethnicity?
 - ☐ Asian
 - ☐ American Indian or Alaskan Indian
 - ☐ Black or African Americans
 - ☐ Hispanic
 - ☐ Native Hawaiian or another Pacific Islander
 - ☐ White, Non-Hispanic
 - ☐ Other, please specify: _____

Does your child have any food allergies? _____

If so, please list them: _____

Does your child have any learning disabilities that will require assistance answering questions on a written questionnaire?

If so, how can we best help him / her? _____

Approval Date: 9/30/19

Appendix L

Child Assent



Rutgers, The State University of New Jersey
65 Bergen Street-Room 1126
Newark, NJ 07107-3001

www.nursing.rutgers.edu
Phone: (973) 972-4307
Fax: (973) 972-8947

ASSENT TO TAKE PART IN A RESEARCH STUDY

TITLE OF STUDY: A Childhood Obesity Prevention Project: Implementation of the KidsFit Program among School-aged Scouts to Increase Healthy Nutrition and Exercise Behaviors

Principal Investigator: Dr. Ganga Mahat, EdD, RNBC

Co-Investigator: Jennifer Olas MSN, RN; Tiffany Meng BSN, RN

Team Member: Kimberly Sacoto, Undergraduate nursing student

Who are you and why are you meeting with me?

Our names are Jennifer and Tiffany; we are Doctor of Nursing Practice (DNP) students at the Rutgers, The State University of New Jersey, School of Nursing. We are the Co-Investigators on a DNP Student Project. Dr. Ganga Mahat is the Principal Investigator. Sometimes other people will work with us. In this case, you will see one of our helpers, Kimberly Sacoto, who will be helping me with this project. We would like to tell you about a study that involves children like yourself. We would like to see if you would like to participate in this study.

What is this research study about?

We are doing this study to see if the KidsFit program will help you learn more about nutritious foods and how to live a healthier life. In the future, if this program is successful, we hope that it can be used to help teach other kids about being healthy too.

Why have I been asked to take part in this study?

You have been asked to take part in this study because you are either a Girl Scout or Cub Scout Troop member between the ages of 8 and 11 years old.

Who can be in this study? And who may not? How long will the study take?

Any girl/boy in your Girl Scout/Cub Scout Troop can participate as long as they speak and understand English and are between the ages of 8 and 11. If you are able to go to your regular scout meetings and participate there, then you can participate in this study. If you are in a wheelchair or have a physical disability but you still are able to participate in regular Scout meetings, then you can participate in the activities of this study. You will also be given a pedometer (which is like a watch that counts how many steps you take) to see how many steps you take each day, but if you're in a wheelchair you don't have to use it. If you're not in a wheelchair, we would like you to wear the pedometer every day and write down how many steps you did at the end of the day. Don't worry, we'll give you a paper to write them down on and then you bring it back to us each week.

We will meet once a week, starting in the fall for 6 weeks. Each meeting should last about 1 hour. You have to attend all the meetings and stay for the whole time to finish the study and get a patch for your uniform.

Kids who can participate:

- If you're a girl between the ages of 8 and 11 years old and you're a girl scout, then you can participate.
- If you're a boy between the ages of 8 and 11 years old and you're a Cub Scout, then you can participate
- You must be able to speak and understand English to participate. (or else we can't talk to each other, because we only know how to speak English)
- Your Girl Scout/Cub Scout Troop Leader must agree to participate
- If you have no difficulty attending and participating in your normal Scout Meetings, then you can participate

Rutgers, The State University of New Jersey

Approval Date: 9/30

- If you are in a wheelchair or have a physical disability but you still are able to participate in regular Scout meetings, then you can participate in the activities of this study.

Kids who can't participate:

- If you are younger than 8 or older than 11, you cannot be in this study.
- If you are not in the Girl/Cub Scout Troop, then you cannot participate.
- If your Troop Leader does not want your troop to participate, then you can't.
- If you are not able to go to your regular meetings and participate then you cannot participate in this study.

What will happen to me if I choose to be in this study?

First, you will be asked to complete a test and a questionnaire, which is a paper with some questions on it to answer. (don't worry, none of the test grades count!) This is so I can understand what you already know about your health. Then we will discuss one healthy topic each week. We'll talk about things such as how fruits and vegetables work in your body, bone health, how to read a food label, and how to choose healthy options when eating out. Your only homework in this study is to write down the number of steps shown on your pedometer every night. At the end of the study, you will be asked to complete the same test and questionnaire that you took in the beginning.

What if I have trouble reading or need help answering questions for the Test and Questionnaire?

Your Parents will let us know if you need extra help answering all these questions, which is fine! There are a lot of them to read and answer! When the time comes to answer the questions, we are going to split everyone into two small groups, this way we can make sure everyone is able to answer the questions. Your teacher, Ms. Jen or Ms. Tiffany, will read each question and the answers to everyone in your group, so you know which answer you want to circle. No other student will know if your parent told us you need extra help, so don't worry. We just want to make sure you are able to participate!

Will I get better if I am in the study?

You may learn more about being healthy as your grow up, but there is also a chance that you won't benefit from it at all or learn anything new.

Can something bad happen to me or will I feel uncomfortable if I take part in this study?

Sometimes things happen to people in studies that may hurt them or make them feel bad. These are called risks. The only risks in this study is accidental small injuries that may result from our class activities – for example, paper cuts and bumping into your friend. During our recipe making activities, you may not enjoy something you taste -and that's okay! You don't have to finish anything you do not like. If you are allergic to any foods, you can get sick if you eat them. Please tell us if you have any allergies and what they are before you eat or taste anything. If you find that the information and activities in this class are boring to you, you may feel like you are wasting your time. We will do everything we can to make this fun! Another risk is that people who aren't involved with this study may see the answers to your questions or know that you participated in it. There isn't anything bad that can happen with them knowing, except your privacy is invaded if you didn't want anyone to know. But we are going to work really hard to keep all your information hidden and secure. If you want to talk to your friends or family about it, that's fine too!

What if I don't want to take part in this study?

You don't have to be in this study if you don't want to. No one will get angry or upset if you don't want to be in the study. Just tell us. And remember, you can change your mind later if you decide you don't want to be in the study anymore.

Will I be given anything to take part in this study?

You will receive a pedometer for being in this research study and we want you to keep it so you can still use it after the study is over. You will also receive a "Physical Fitness/nutrition" badge after this study to add to your uniform. If you do not participate, you will not receive this badge that shows you participated in the study.

What if I have questions?

You can ask questions at any time. You can ask now. You can ask later. You can talk to me or you can talk to someone else at any time during the study. Here are the telephone numbers to reach us:

Primary Investigator: Dr. Ganga Mahat, EdD, RNBC [REDACTED]

Co-Investigator: Jennifer Olas MSN, RN [REDACTED]

Co-Investigator: Tiffany Meng BSN, RN [REDACTED]

Team member: Kimberly Sacoto

What are my rights if I decide to take part in this study?

You may ask questions about any part of the study at any time. Do not sign this form unless you have had a chance to ask questions and have been given answers to all of your questions and agree to take part in the study.

I have read this entire form, or it has been read to me, and I believe that I understand what has been talked about. All of my questions about this form and this study have been answered.

I agree to take part in this research study.

Subject Name: _____

Subject Signature: _____ Date: _____

Signature of Investigator or Responsible Individual:

To the best of my ability, I have explained and discussed the full contents of the study, including all of the information contained in this consent form. All questions of the research subjects and those of his/her parent(s) or legal guardian have been accurately answered.

Investigator/Person Obtaining Consent: _____

Signature: _____ Date: _____

Appendix O

10 Week Curriculum

3-5 Lessons at a Glance

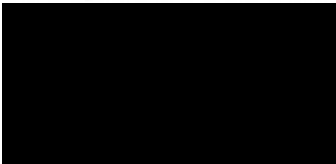
Session	Topic	Materials Needed All handouts and activity sheets are included the KidsFit Workbooks	Take Home Recipe
1	New Beginnings	Food Frequency and Pretest Questionnaire, Food log and the photo release/food allergy form	Photo release/ Food allergy form, Snake Snacks
2	Bodies in Balance	Food logs and energy source matchup, The calorie and energy cycle, energy balance and How do we maintain a healthy body weight?	Tropical Trail Mix
3	MyPlate: Fruits and Vegetables	Food logs, MyPlate image, Healthy Plate Planner, Cafeteria Challenge, What is Wrong with this Plate, Eat the Colors of the Rainbow.	Cheesy Veggie Quesadillas
4	MyPlate: Grains and Protein	Food logs, What are Grains? Find the Grains and What are protein foods word search. 5 grain food packages with ingredients listed. (Cereals, oatmeal, bread products, etc)	Stovetop Popcorn
5	MyPlate: Dairy	Food logs, What are Dairy Foods word scramble, EGGSperiment EGGSperiment materials: plastic cup with lid, marker, eggshells, vinegar. Images of MyPlate, images of bone builders and bone breakers	Chocolate Muscle Milk
6	Dairy and Bone Health	EGGSperiment handout and materials from previous week, Smoothie Recipe, Smoothie Ingredients: Calcium fortified OJ, frozen blueberries, fresh spinach, bananas, milk, blender, measuring cup, large spoon, small 3 oz cups, paper towels. Images of MyPlate images of bone builders and bone breakers	Blue & Green Breakfast Smoothie
7	Investigating Food Labels	Food label game (PowerPoint) Food label worksheets, Smart board or projector.	Banana Bread Granola
8	Sugar and Breakfast Foods	Sugar packets, measuring spoons. Nutrition Facts for cereals or actual cereal boxes (15 boxes or more)	Overnight Oats
9	Fast Food	Fast food worksheet with menu and nutrition facts, Crisco/ butter, tablespoon, burger bun.	Garden Fresh Whole Wheat Pizza
10	Healthy Habits for Life	Food Frequency, Pre and Post questionnaire. Air popper (optional)	Black Bean Brownie Bites

Appendix P

Permission to use KidsFit

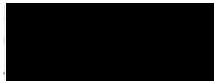


Ms. Molly Fallon-Dixon



February 17, 2019

Jennifer Olas

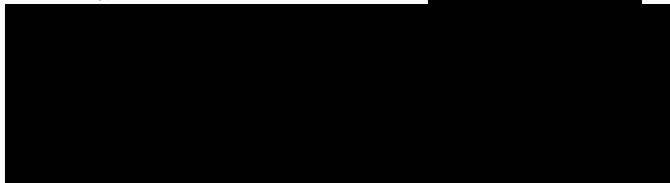


Subject: Rutgers Pediatric DNP Student use of KidsFit Program

Dear Jennifer Olas,

This letter is to authorize you and your project team mate Tiffany Meng permission to utilize our KidsFit curriculum for your DNP project for the topic of childhood obesity. It is our understanding that you have been properly educated on the program and will implement it within a Boy Scout Troop. We look forward to collaborating with you regarding your results.

Sincerely,




Approval Date: 9/30

Appendix Q

Six Week Condensed Lesson Plan

Condensed Lessons at a Glance

Session	Topic	Materials Needed	Take Home Recipe
1	New Beginnings Bodies in Balance	Food Frequency and Pretest Questionnaire, Food log and the photo release/food allergy form Food logs and energy source matchup. The calorie and energy cycle, energy balance and How do we maintain a healthy body weight?	Photo release/food allergy form, snake snacks Tropical Trail Mix
2	My Plate: Fruits and Vegetables My Plate: Grains and Protein	Food logs, My Plate image, healthy Plate Planner, Cafeteria Challenge, what is Wrong with this Plate, Eat the Colors of the rainbow What are Grains? Find the Grains and what are protein foods word search 5 grain food packages with ingredients listed. (cereals, oatmeal, bread products)	Cheesy Veggie Quesadillas Stovetop Popcorn
3	My Plate: Dairy Dairy and Bone Healthy	Food logs, what are dairy foods word scramble, EGGSperiment materials: plastic cup with lid, marker eggshells, vinegar, Images of MyPlate, images of bone builders and bone breakers Images of MyPlate images of bone builders and bone breakers. Smoothie Recipe, Smoothie Ingredients: Calcium fortified OJ, frozen blueberries, fresh spinach, bananas, milk, blender, measuring cup, large spoon, small 3 oz cups, paper towels Images of MyPlate images of bone builders and bone breakers	Chocolate Muscle Milk Blue & Green breakfast smoothie
4	Investigating Food Labels	Food label game Food label worksheet	Banana Bread Granola
5	Sugar and Breakfast Foods Fast Food	Sugar packets, measuring spoons. Nutrition facts for cereals or actual cereal boxes Fast food worksheet with menu and nutrition facts, Crisco/butter, tablespoon, burger bun	Overnight oats Garden-Fresh whole-wheat Pizza
6	Healthy Habits for Life	Food Frequency, Pre and Post questionnaire. Air popper (optional)	Black Bean Brownie Bites

Approval Date: 9/30

Appendix R

Food Log

Daily Food Log

Session 1

Directions: Record everything you ate YESTERDAY.

If you did not eat anything during a meal or snack, leave it blank.

In the right column write down what food groups you ate from for that meal or snack.

What did you eat yesterday?		Fruits Vegetables Grains Protein Dairy Which food groups did you eat from?
Breakfast		
	Beverage:	
Snack		
	Beverage:	
Lunch		
	Beverage:	
Snack		
	Beverage:	
Dinner		
	Beverage:	
Snack		
	Beverage:	
Name one Healthy Food choice you made:		
Name on Unhealthy Food Choice you made:		

KidsFit | Grades 3-5

Approval Date: 9/30

Appendix S

Session 1: New Beginnings

Grades 3–5	Session 1	
Subject	Nutrition	
Class Title	New Beginnings	
Time	50 minutes	
NJCCCS	2.1 Wellness: 2.1.4.A.1, 2.1.4.A.2	
Instructional Objective	Learner will be able to restate the goals and objectives of KidsFit during class discussion. Learner will complete the FFQ, pretest and week 1 food log.	
Assessment	Question and answer on health behaviors as they relate to our physical wellbeing. Discussion of the short-term and long-term effects of positive and negative health behaviors. Explanation and discussion of KidsFit, class activities, food logs, goals, homework and family connection.	
Instructional Procedure	<p>Opening: Ask class, what does it mean to be healthy? What does it mean to be unhealthy?</p> <p>Discussion questions: What are some healthy and unhealthy behaviors or habits? Why should we make healthy food choices? Why should we exercise? What happens if we don't take care of our bodies?</p> <p>Guided Activity: Food Log: Instruct students to write down what they ate yesterday. Students can attempt to record what food groups they ate from, or leave it blank until this topic is covered.</p> <p>Independent Activity: FFQ and pretest</p> <p>Closing: Collect completed FFQ and pretest. Review expectations of subsequent classes. Distribution of KF books and completion of food log at the beginning of every class (students are to record what they ate yesterday at the beginning of each class)</p>	
Questions	<p>Knowledge Define health What are healthy habits? What are unhealthy habits?</p>	<p>Application Give an example of an instance where someone's behavior effected their health Why is it important to have healthy eating and exercise habits?</p>
Homework	N/A	
Materials	FFQ, Pretest, Food log. Image of MyPlate and food group examples.	
Parent Handout	Food allergy form and photo release form (<i>if not previously completed</i>).	

Approval Date: 9/30

Appendix T

Session 2: Energy Balance

Grades 3–5	Session 2			
Class Title	Energy Balance			
Time	50 minutes			
NJCCCS	2.1 Wellness: 2.1.4.A.1, 2.1.4.A.2, 2.1.4.B.1, 2.1.8.B.2 2.6 Fitness: 2.6.4.A.1, 2.6.4.A.3, 2.6.4.A.4			
Instructional Objective	Learner will be able to: <ol style="list-style-type: none"> Understand why we need to eat food. Comprehend that the calories in food provides our body with energy. Define calories— What are they? Where do we find them? Why do we need them? List examples of physical activity. State how much exercise we should get each day. Explain the consequences of eating too little or too many calories. 			
Assessment	Formative: Question and answer as related to calorie intake and calorie expenditure. Summative: Completion of calorie and energy balance activities.			
Instructional Procedure	<p>Opening: Ask students, where do we get energy from? When do we use energy? Allow students to raise their hands and provide responses.</p> <p>Discuss Energy In</p> <ul style="list-style-type: none"> Why do we eat food? Where do we get energy from? Put the word “Calorie” on the board and ask students if they have ever seen or heard of this word. Allow students to respond. Next have students do the <i>energy source match up</i>. Recap: We get energy from the food we eat which contains calories. Calories are our energy source like electricity is a light’s energy source. Do all foods contain the same amount of calories? Show students 3 foods (Images or food models of low, med, high calorie) Ask students to rank the items from least amount of calories to the greatest amount. What happens if we do not eat any calories? <p>Energy Out</p> <ul style="list-style-type: none"> What types of activities do we need energy for? Allow students to respond. Do all activities use the same amount of calories? <p>The Calorie and Energy Cycle</p> <ul style="list-style-type: none"> Have six students read out the steps of the calorie and energy cycle. <p>Energy Balance</p> <ul style="list-style-type: none"> Have students add up the calories on energy balance sheet. Is the scale balanced? Tell students the calories we eat do not just disappear if we don’t use them. So what happens to the “extra” calories we eat that we do not use or burn? <p>Guided Activity: Have students stand up. Tell them we are now going to burn off the calories from a few snacks. Refer to chart in KF book. Jog for 60 seconds to burn off a breath mint. Have students read how long they would have to jog to burn off the other foods listed. (Option—Identify other snacks and the associated activity needed to burn them off)</p> <p>Closing: Have students fill in the blanks. We get energy from _____. Calories are in the _____ we eat. What activities burn calories? What happens if we eat more calories than we burn?</p>			
Questions	Knowledge <ol style="list-style-type: none"> Memorize calorie equals energy. List activities that use energy. Identify where calories come from. 	Comprehension <ol style="list-style-type: none"> Explain what happens when we don’t eat enough calories. Explain what happens when take in more energy than we burn. Rank foods in calorie order. 	Application <ol style="list-style-type: none"> How are calories and energy related to obesity? 	Synthesis <ol style="list-style-type: none"> What solutions would you suggest for someone trying to lose weight? What solutions would you suggest for someone trying to gain weight (muscle)?
Homework	N/A			
Materials	KidsFit lesson book, Food logs, 1 pound of fat model, Food models, 3 food Nutrition facts labels.			
Parent Handout	Five, Zero One, Two = Steps to a Healthier You, Tropical Trail Mix recipe			

Appendix U

Session 3: MyPlate: Fruits and Vegetables

Grades 3–5	Session 3		
Subject	Nutrition		
Class Title	MyPlate: Fruits and Vegetables		
Time	50 minutes		
NJCCCS	2.1 Wellness Nutrition 2.1.4.B.1, 2.1.4.B.2, 2.1.6.B.1, 2.1.6.B.2, 2.1.8.B.2		
Instructional Objective	Learner will be able to: <ol style="list-style-type: none"> 1. Name the 5 food groups. 2. Identify foods that fit into the fruits and vegetable groups. 3. State what counts as serving of fruits and vegetables and what does not count as a serving. 4. State how many fruits and vegetables we should eat every day. 		
Assessment	Summative: Completion of food log, cafeteria challenge and rainbow activity		
Instructional Procedure	<p>Do Now: Food Log (yesterday's intake)</p> <p>Guided Activity: Class discussion: How do we make a healthy plate? What types of foods fit on a healthy plate? Review food groups and provide examples of foods that fit into each group. Have students share their food log and try to determine the food groups they ate from for each meal. Write on the board the 5 food groups. As students read out loud their food logs, write down the foods they ate underneath the appropriate food group. (Optional use: the associated colored chalk or colored dry erase markers to write the food groups.) Discuss what food groups we typically eat the most of and which ones we eat the least of. Ask students, why do we need to eat fruits and vegetables? Inform students that different fruits and vegetables contain different nutrients. The more colors, we eat the more nutrients we get. How many do we need to eat? What counts as a serving? Discuss serving sizes of fruits and vegetables. Use the How to Choose Healthy handout to explain portion sizes.</p> <p>Independent Activity: Cafeteria Challenge</p> <p>Group Activity: Eat the colors of the rainbow</p> <p>Time students and have them complete rainbow activity. (Optional: reward team who thinks of the most fruits and vegetables.</p> <p><i>(If time, do a brief review of Week 1 lesson)</i>—What are calories and where do they come from? What foods provide calories?</p> <p>Closing: Review food groups. Review what counts as serving. Review why fruits and vegetables are important.</p>		
Questions	Knowledge What are the 5 food groups? What food group do the foods we eat belong in? What counts as a serving?	Comprehension Why do we need to eat fruits and vegetables?	Synthesis How can we create a healthy plate?
Homework	N/A		
Materials	Images of MyPlate and food group examples (pictures or food models)		
Parent Handout	Healthy Snacks for home and school, Cheesy Veggie Quesadillas recipe		

Appendix V

Session 4: My Plate: Grains and Proteins

Grades 3–5	Session 4		
Subject	Nutrition		
Class Title	MyPlate and Grains and Protein		
Time	50 minutes		
NJCCCS	2.1 Wellness 2.14.B.1, 2.1.4.B.2, 2.1.6.B.1, 2.1.6.B.2, 2.1.8.B.2		
Instructional Objective	<p>Learner will be able to:</p> <ol style="list-style-type: none"> 1. Identify which foods belong in the grains group and which ones belong in the protein group. 2. Identify what counts as a serving of grains and what counts as a serving of protein. 3. Identify what section/percentage of the plate should be grains and what section/percentage should be protein. 4. List different types of common grains. 5. Identify a whole grain based on the package. 		
Assessment	Summative: Completion of food log, Discussion on Grains and Protein		
Instructional Procedure	<p>Do Now: Food Log (yesterday's intake) Only record intake not food groups.</p> <p>Guided Activity: <i>What are grains?</i> Have students come up with four foods that are made from the most common grains(wheat, oats, corn and rice)</p> <p>Group Activity: <i>Find the Grains.</i> Divide students in groups of 2. Hand out food labels and have students find and record the type of grains in the food. Students are looking for the words: wheat, rice, oats, barley or corn.</p> <p>Once each group has at least 3 foods discovered, have each group review one grain food they investigated.</p> <p>Transition to protein foods discussion, or have students complete the What are protein foods word search for homework.</p> <p>Protein foods can either come from animals or plants. The reason they are in the protein group is because these foods contain a lot of the nutrient protein. Do you know what we need protein for? Allow students to respond. Our bodies are made up of proteins, for example our organs, muscles, hair skin and even nails are made up of protein. Protein is a very important nutrient for our body but we need to make sure we eat low-fat or lean proteins. For example, grilled chicken, and baked fish are much lower in fat than burgers and fried chicken, which have a lot of fat inside.</p> <p>All foods that come from animals belong in the protein group, with one exception—dairy foods, which have their own food group. Let's complete this protein word search as a group to find out what foods have protein in them.</p> <p>Independent Activity: Have students go back and identify the grain foods and the protein foods they ate from their food log. Ask students if anyone ate any protein foods that come from plants.</p> <p>Closing: How much of our plate should we fill with grains and protein?</p>		
Questions	<p>Knowledge What is a grain? What are proteins? What counts as a serving?</p>	<p>Comprehension Why is protein important? Why are grains important?</p>	<p>Application How can we create a healthy plate of grains and protein? How do we know if it is a whole grain?</p>
Homework	N/A		
Materials	Images of MyPlate and food group examples. At least 15 grain food packages with ingredients listed.		
Recipe	Stovetop Popcorn		

Appendix W

Session 5: My Plate: Dairy

Grades 3–5	Session 5		
Subject	Nutrition		
Class Title	MyPlate: Dairy		
Time	50 minutes		
NJCCCS	2.1 Wellness: 2.1.4.C.1, 2.14.B.1, 2.1.4.B.2 2.2 Integrative Skills: 2.2.8. E.1		
Instructional Objective	Learner will be able to: 1. Identify foods that belong in the dairy group. 2. Identify calcium as an important nutrient that makes up our bones and helps make them strong. 3. Identify foods that weaken our bones. 4. Identify other foods that contain calcium and Vitamin D that also help build strong bones.		
Assessment	Summative: Completion of food log, What are Dairy Foods sheet		
Instructional Procedure	Do Now: Food Log (yesterday's intake) Record both food intake and food groups. Guided Activity: Discuss the dairy group. Explain that dairy foods are made from milk and contain the nutrient calcium. Using visuals (food models and or pictures) show students examples of dairy foods that help build strong bones and teeth. Some foods and drinks can weaken or "break" them (caffeinated foods, salty foods, acidic foods: ex - soda, coffee, chips, fast food). Class activities: What are Dairy Foods? Bone breaker experiment. Teacher to do experiment. Students record their expectations. Closing: Review dairy foods, bone builders and bone breakers.		
Questions	Knowledge What are dairy foods? Where do we get calcium and Vitamin D from?	Comprehension Why are dairy foods important?	Application How do we strengthen our bones? How can we avoid weak bones?
Homework	N/A		
Materials	Images of MyPlate and food group examples. EGGSperiment: plastic cup with lid, marker, egg shells, vinegar.		
Parent Handout and Recipe	Calcium and Kids Chocolate Muscle Milk recipe		

Approval Date: 9/30

Appendix X

Session 6: Dairy and Bone Health

Grades 3-5	Session 6		
Subject	Nutrition		
Class Title	Dairy and Bone Health		
Time	50 minutes		
NJCCCS	2.1 Wellness: 2.1 Wellness: 2.1.4.C.1, 2.14.B.1, 2.1.4.B.2 2.2 Integrative Skills: 2.2.8. E.1		
Instructional Objective	<p>Learner will be able to:</p> <ol style="list-style-type: none"> 1. Identify foods that belong in the dairy group. 2. Identify calcium as an important nutrient that makes up our bones and helps make them strong. 3. Identify other foods that contain calcium and Vitamin D that also help build strong bones. 4. Identify foods that weaken our bones. 		
Assessment	Summative: Completion of food log, Week 2 observations of EGGsperiment.		
Instructional Procedure	<p>Do Now: Food Log (yesterday's intake) Record both food intake and food groups. Discussion: Review the dairy group. Review the nutrients calcium and Vitamin D. Review the benefits of low-fat dairy. Review the foods that can weaken our bones. Guided Activity: Week 2 EGGsperiment. Allow students to observe the egg shells and record their observations. Pick up the egg shells with a tong or fork to show the texture and thinness of the egg shells. Students are to record their observations. Bone Building Smoothie: Discuss the role of each ingredient in the smoothie and how it relates to bone health. Make smoothie for students to have a small sample. Provide recipe to take home. Closing: Review healthy dairy foods, bone builders and bone breakers.</p>		
Questions	<p>Knowledge What are dairy foods? Where do we get calcium and Vitamin D from?</p>	<p>Comprehension Why are dairy foods important? Why should we eat low fat dairy?</p>	<p>Application How do we strengthen our bones and teeth? What snacks can we avoid that weaken bones and teeth? What healthy snacks can we eat to strengthen our bone and teeth?</p>
Homework	N/A		
Materials	Images of MyPlate and food group examples. Smoothie Ingredients: Calcium-fortified OJ, frozen fruit (strawberries or blueberries) fresh spinach, bananas, milk,blender, measuring cup (optional), Large spoon, Small 3 oz cups, paper towels.		
Parent Handout and Recipe	Getting Calcium Every Day and Blue & Green Breakfast Smoothie recipe		

Appendix Y

Session 7: Food Label Investigation

Grades 3-5	Session 7		
Subject	Nutrition		
Class Title	Food Label Investigation		
Time	50 minutes		
NJCCCS	2.1 Wellness: 2.1.4. A.2, 2.1.6.A.1, 2.1.6.B.4, b. 2.2.8. E.		
Instructional Objective	<p>Learner will be able to:</p> <ol style="list-style-type: none"> 1. Identify the serving size 2. Identify the number of servings per container. 3. Restate the role of calories, fat, salt and sugar in our body. 3. Identify the amount of calories, fat, salt and sugar in one serving. 4. Calculate the amount of calories, fat, salt and sugar in 2 servings and in the whole package. 5. Explain the difference between the ingredients in a natural food and an artificial food. 		
Assessment	Summative: Completion of food log.		
Instructional Procedure	<p>Do Now: Food Log (yesterday's intake) Record both food intake and food groups.</p> <p>Guided Activity: Using a large poster or projected image of a food label allows the students to locate the serving size, calorie, fat, salt and sugar amounts. Explain the meaning of a percent daily value. Optional Dialogue: Percent Daily Value is kind of like our allowance. We are allowed a certain amount of fat and salt in a healthy diet. The percent daily value tells us what percent of our fat or salt allowance we are using by eating that food. For example, if Mom or Dad gave you 10 dollars to go to the corner store to buy a snack and you spend 5 dollars, what percent of your allowance did you spend? Now let's say you only have 10 dollars for food all day, would it be wise to spend half of your allowance for one snack? No! When looking at the Percent Daily Value, remember that you want to keep the percentage for fat and salt at 5% or lower. Discuss the difference between the grams of fat and salt and the Percent Daily Value.</p> <p>Independent activity: <i>Food label investigation</i></p> <p>Group Activity Option: Food Label game (projector/smart board needed, PowerPoint for food label game). Create teams of 2 or 3 students. Hand each student 5-10 blank pieces of paper or a small dry erase board and dry erase marker. Explain to students they are investigating the food label to identify what is unhealthy about it. Provide a key for the students to refer to on the board. For example, 6 grams or more is too much sugar. <i>More than 5% fat, saturated fat or sodium/salt is too high. More than 0 grams of trans fat is too high.</i></p>		
Questions	<p>Knowledge</p> <p>What is a serving size?</p> <p>What do the servings per container tell us?</p> <p>What are calories used for?</p> <p>What does percent daily value mean?</p>	<p>Comprehension</p> <p>Explain the difference between grams of fat or salt and the percent daily value of fat or salt.</p> <p>Explain how much sugar is unhealthy.</p>	<p>Application</p> <p>Calculate the amount of calories; fat, salt and sugar are in a food.</p> <p>Identify whether or not a food choice is healthy based on the food label.</p> <p>Identify healthier, less processed snack options.</p>
Materials	Large poster of food label or projected image of food label. Food label worksheets (appendix)		
Parent Handout and Recipe	Tips for the Nutrition Facts, Banana Bread Granola recipe		

Appendix Z

Session 8: Sugar and Breakfast Cereal

Grades 3–5	Session 8		
Subject	Nutrition		
Class Title	Sugar and Breakfast Cereals		
Time	50 minutes		
NJCCCS	2.1 Wellness: 2.1.4.B.1, 2.1.4.B.2 , 2.1.4.B.3 , 2.1.4.B.4, 2.1.4.C.1, 2.1.6.C.1 , 2.1.6.C.2, 2.2.4.B.1, 2.2.4.B.3, 2.2.4.B.4		
Instructional Objective	Learner will be able to: <ol style="list-style-type: none"> 1. Identify foods and beverages with high amounts of sugar. 2. Determine how much sugar a food or beverage contains. 3. Determine the amount of sugar per serving in a food or beverage. 4. Determine the amount of sugar in an entire package or beverage. 		
Assessment	Summative: Sugar Activity (Spotlight on Breakfast Cereals) Breakfast case study.		
Instructional Procedure	<p>Do Now: Food Log (yesterday's intake) Record both food intake and food groups.</p> <p>Guided Activity: Group discussion on sugar. What types of foods and beverages contain a lot of sugar? What can happen if we eat too much sugar?</p> <p>Independent Activities: Spotlight on Breakfast Cereal activity. Breakfast case study.</p> <p>Visual activity: Measure out the amount of sugar in the breakfast cereal examples. Rank the cereals from the least to the most amount of sugar.</p> <p>Closing: How can we eat less sugar? What are some healthier breakfast options?</p>		
Questions	Knowledge What foods are high in sugar?	Comprehension Why is too much sugar unhealthy?	Application What are some low-sugar breakfast ideas? What are low sugar beverages?
Homework	Read the amount of sugar in your cereal at home. Is there more than 6 grams of sugar in one serving?		
Materials	Sugar packets, measuring spoons. Nutrition Facts for cereals or actual cereal boxes		
Parent Handout	Overnight Oats		

Appendix AA

Session 9: Fast Food and Fats

Grades 3–5	Session 9		
Subject	Nutrition		
Class Title	Fast Food and Fats		
Time	50 minutes		
NJCCCS	2.1 Wellness: 2.1.4.B.1, 2.1.4.B.2 , 2.1.4.B.3 , 2.1.4.B.4, 2.1.4.C.1, 2.1.6.C.1 , 2.1.6.C.2, Integrative Skills: 2.2.6.B.1, 2.2.6.B.3, 2.2.6.B.4, 2.2.8. E. 2.2.4.B.1, 2.2.4.B.3, 2.2.4.B.4		
Instructional Objective	Learner will be able to: 1. Define the role of fats in our body. 2. List reasons why too much fat is unhealthy. 3. Identify unhealthy fatty foods. 4. Identify healthier options at fast food restaurants.		
Assessment	Summative: Fast food worksheet		
Instructional Procedure	Do Now: Food Log (yesterday's intake) Record both food intake and food groups. Guided Activity: Group Discussion on fast food. Dialogue: Fast food restaurants are everywhere, but should we be eating fast food every day? What is in fast food that makes it unhealthy for our bodies? Independent Activity: Have students complete the fast food worksheet. Then have students go back to the menu options to search for healthier lower fat and lower calorie options. Visual Option: Show students how much one of the student's fast food meals actually looks like using butter or Crisco. Grams of fat % 12 = tablespoons of butter or Crisco. Measure amount of butter or Crisco and put on an empty burger bun. Closing: How often is it ok to eat fast food? How can we order healthier when we do eat fast food?		
Questions	Knowledge What is fat?	Comprehension Why is too much fat unhealthy?	Application How can we order healthier choices at fast food restaurants?
Homework	N/A		
Materials	Fast food worksheet with menu and nutrition facts, Crisco/butter, tablespoon, burger bun.		
Parent Handout	Tips for Dining out, Garden Fresh Whole Wheat Pizza		

Appendix BB

Session 10: Healthy Habits for Life

Grades 3-5	Session 10		
Subject	Nutrition		
Class Title	Healthy Habits for Life		
Time	50 minutes		
NJCCCS	2.1 Wellness: 2.1.2.A.1 , 2.1.2.B.1 , 2.1.2.B.2 , 2.1.2.B.3, 2.1.2.C.2, 2.1.2.C.3, 2.2.2.B.1, 2.2.2.B.2, 2.2.2.B.3, 2.2.2.B.4		
Instructional Objective	Learner will be able to: 1. Describe how they have changed their eating habits because of KidsFit. 2. Explain how they have used the lessons learned in class to help their family. 3. List the principle of making healthy choices: Exercise and Eat Right.		
Assessment	Summative: Post multiple choice questionnaire, Post FFQ, Yes/No Summary		
Instructional Procedure	Do Now: Food Log (yesterday's intake) Record both food intake and food groups. (optional) Independent Activity: Post multiple choice questionnaire, Post FFQ, Yes/No Summary questions. Students are to put their name on EVERY page of questionnaire and FFQ, and remove all three items from KidsFit books. Submit 3 items. Food activity: (Optional) Healthy snack for students. Example: healthy popcorn or smoothies.		
Questions	Knowledge N/A	Comprehension What are you doing to stay healthy? What do we need to keep our bodies healthy?	Application How have you used the lessons learned in class to help you family and friends?
Homework	N/A		
Materials	KidsFit books		
Parent Handout and Recipe	Black Bean Brownie Bites recipe		

Appendix CC

Parent Hand Out: Snacking Tips

Snacking Tips for Parents



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Plan ahead and **buy healthy snacks when you grocery shop** — you will save money and will make healthier choices than buying snacks on the go.

Give kids choices and make the choices you offer nutritious.

Pre-portion your child's snacks into small plastic bags to grab on-th-go or put a snack-sized serving on a plate.

Assign an area in your refrigerator or cupboard for healthy snacks that you have selected and your kids like — let them help themselves without having to ask for permission.

Combine snacks from at least two food groups to pack more nutrients into your child's diets — it will be more filling and will hold them over until their next meal.

For example, adding milk to cereal or serving string cheese with whole-wheat crackers or fruit is an easy way to add calcium, protein, and other important nutrients to snacks.

Remember: Space snacks far enough away from meals so appetites are not spoiled!



Appendix DD

Parent Hand Out: Recipe

Blue & Green Breakfast Smoothie

We call it our Blue & Green Breakfast Smoothie, but whether it's for breakfast on-the-go, an after school snack, or a sweet after dinner treat, this smoothie fits the bill! We pack three of the MyPlate food groups into one glass full of vitamins and minerals that kids and adults alike won't want to put down!

Ingredients:

1 cup frozen blueberries
 1 cup fresh baby spinach
 1 banana
 1 cup fat-free milk
 1/2 cup calcium fortified orange juice
 1 tablespoon honey (optional)

Directions:

1. Combine all ingredients in a blender until smooth.
 Serve and enjoy!

Yield: 4 servings (1 cup per serving)

Nutrition Facts:

83 Calories; 0 g Fat (0 g Saturated Fat; 0 g Trans Fat); 1 mg Cholesterol; 33 mg Sodium; 18 g Carbohydrate (2 g Fiber, 13 g Sugar); 3 g Protein; 11% Daily Value (DV) Vitamin A; 21% DV Vitamin C; 15% DV Calcium; 2% DV Iron



Recipe

Appendix EE**Fitness Tracker Log**

Week #:

Please write the number of steps shown on your fitness tracker at the end of each day

	Fitness Tracker Results
Sunday	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

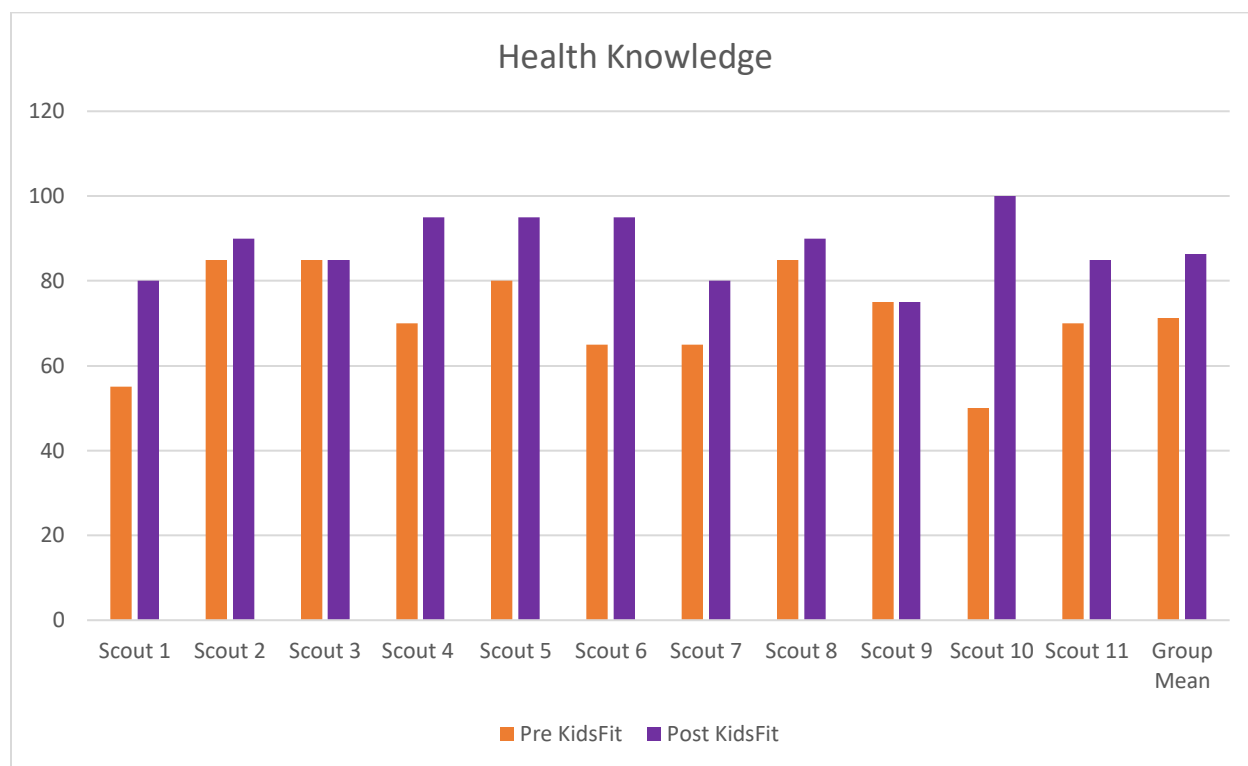
Approval Date: 9/30

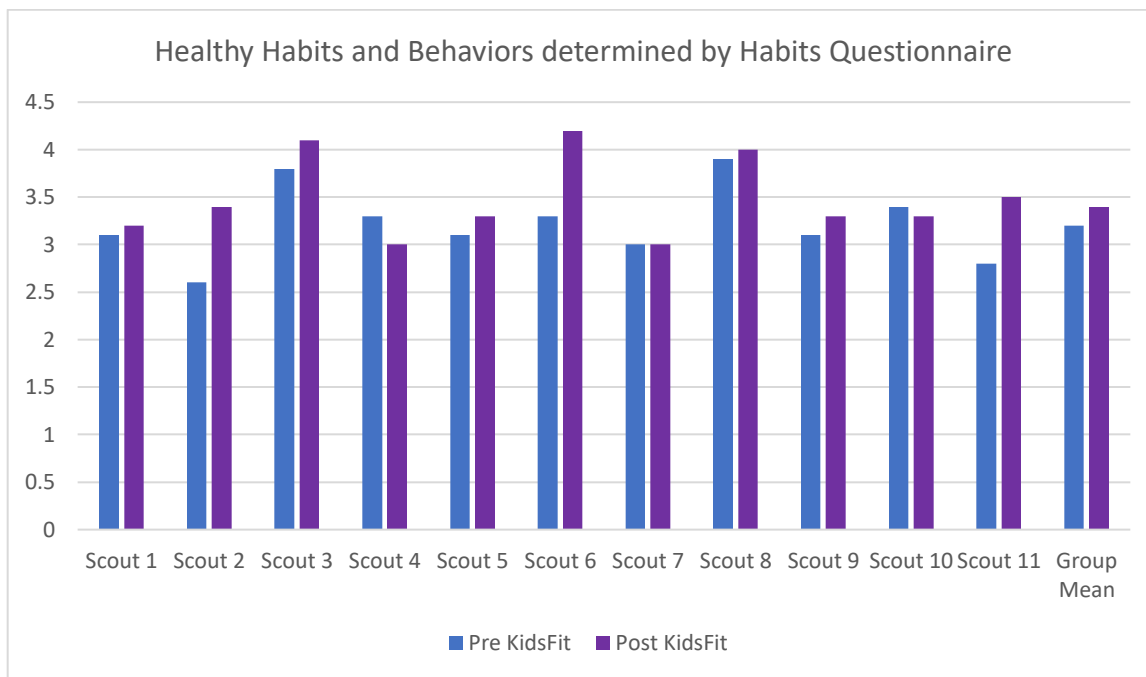
Appendix FF**Live Long and Strong Contract****Live Long and Strong Contract**

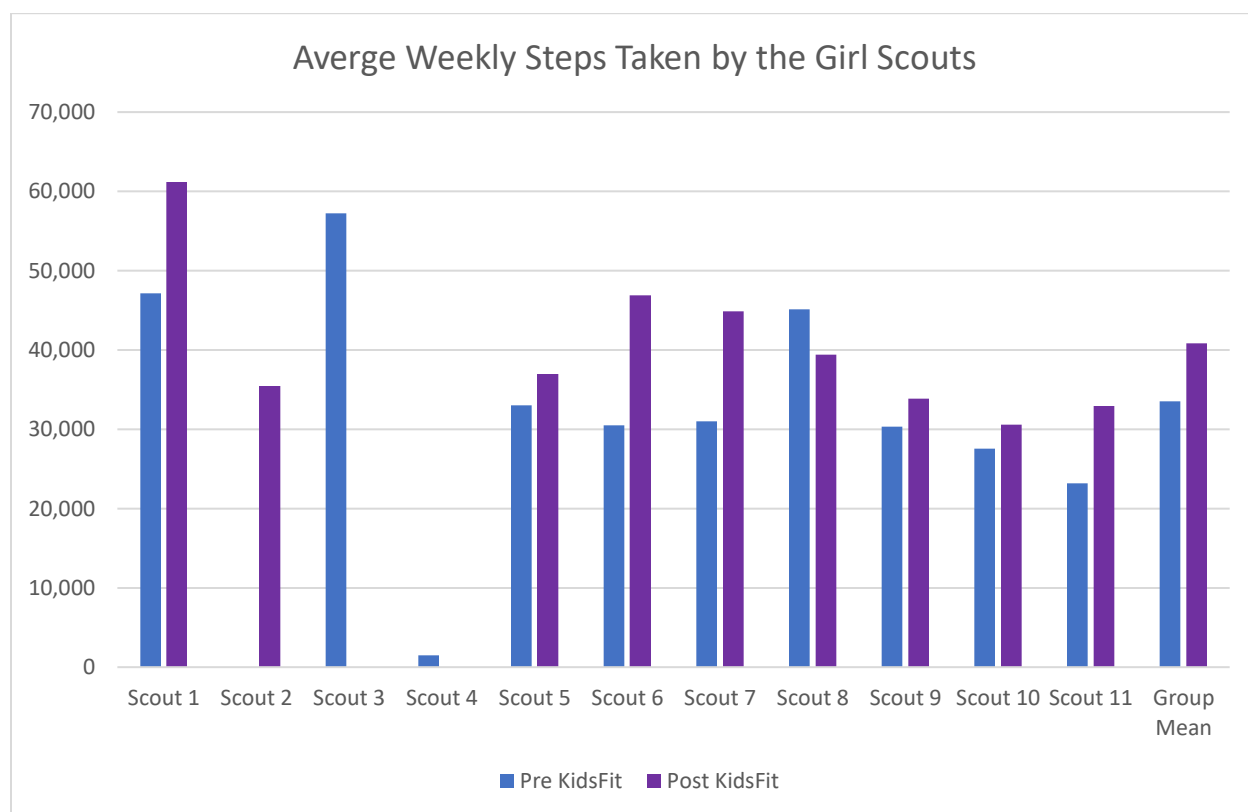
I promise to continue making healthy lifestyle changes in order to live long and strong! This promise includes the following vows:

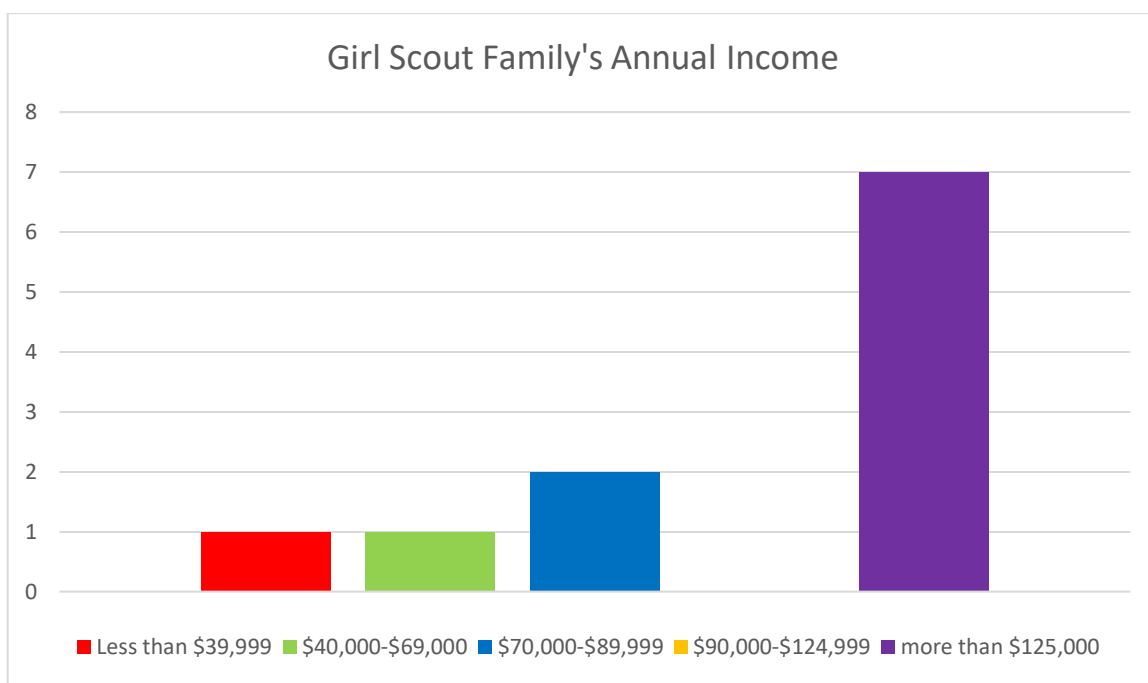
- I vow to eat foods from each of the food groups everyday
- I vow to make the best food choices I know how to in any situation
- I vow to stay active and include physical activity every day
- I vow to read the nutrition facts on all packaged foods
- I vow to eat healthy portions and continue to try new healthy foods
- I vow to encourage my family and friends to eat less sugary and fatty foods
- I vow to treat others with kindness and respect regardless of body shape or weight status
- I vow to take care of my body because there is only one of me
- I vow to live long and strong.

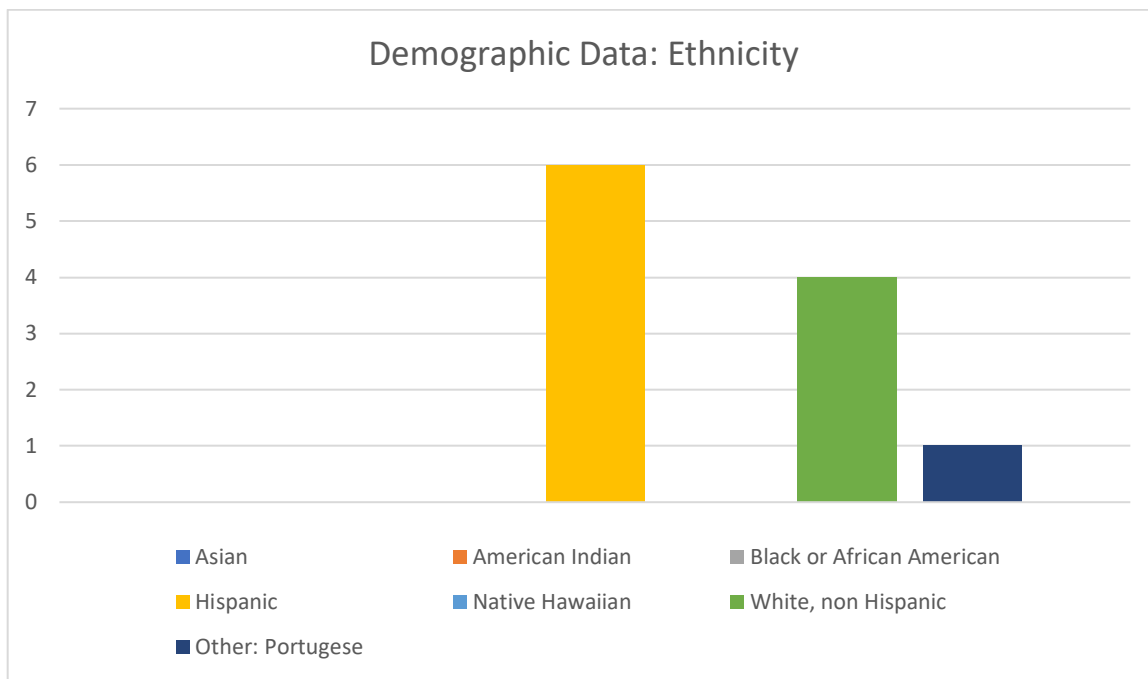
Signature: _____ Date: _____

Appendix GG**Nutrition and Physical Activity Pre and Post Test Scores to Determine Knowledge**

Appendix HH**Food Frequency and Lifeionnairestyle Habits Questionnaire to Assess Healthy Habits**

Appendix II**Average Weekly Steps Taken Pre and Post KidsFit Program**

Appendix JJ**Demographic Data: Family Income**

Appendix KK**Demographic Data: Ethnicity**

Appendix LL

CITI Training



This is to certify that:

Jennifer Bianchini

Has completed the following CITI Program course:

Human Research

(Curriculum Group)

Social / Behavioral / Epidemiologic Research Investigators

(Course Learner Group)

1 - Basic Course

(Stage)

Under requirements set by:

Rutgers- The State University of New Jersey (All Campuses)

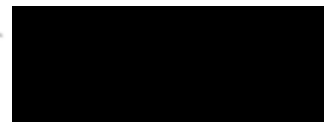
CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w2dd5a49d-f23c-49ad-8de3-3b210594df04-24601382

***Jennifers name changed to Olas in 2019**

Appendix MM

Tiffany CITI Training



This is to certify that:

Tiffany Meng

Has completed the following CITI Program course:

Human Research

(Curriculum Group)

Social / Behavioral / Epidemiologic Research Investigators

(Course Learner Group)

1 - Basic Course

(Stage)

Under requirements set by:

Rutgers- The State University of New Jersey (All Campuses)



Verify at www.citiprogram.org/verify/?wb1ed79d6-7e85-48c0-8252-3d1037e892fa-24615063