Improve Parents’ Attitude Regarding Pediatric Weight Management Interventions: A Quality Improvement Project

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Improve Parents’ Attitude Regarding Pediatric Weight Management Interventions: A Quality Improvement Project

A Scholarly Project Presented to the Faculty of the Nicole Wertheim College of Nursing and Health Sciences

Florida International University

In partial fulfillment of the requirements For the Degree of Doctor of Nursing Practice

By

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Approval Acknowledged: ____________________________, DNP Program Director

Date: ____________________________
Abstract

Childhood obesity rates have significantly increased over the years, leading to a higher risk of secondary illnesses affecting the cardiovascular and endocrine systems. Before implementing any weight management program, beliefs and attitudes toward healthy lifestyle modifications must first be assessed. This study aimed to identify parents’ attitudes toward pediatric weight management education. The Health Belief Model was used as the theoretical framework for the study. The study was completed at a primary care pediatric office in Margate, Florida. A total of 10 parents of pediatric patients with a body mass index of ≥95th percentile were invited to participate in the quality improvement project where they completed both pre-and post-educational surveys that consisted of 14 and 12 questions respectively. The questions assessed how important is it for the child to: get at least 8 hours of sleep per night, not skip breakfast, exercise for at least 1 hour every day, eat 5 servings of fruits and/or vegetables per day, drink enough water every day, avoid juices and sodas, avoid cookies and chips, limit electronics to less than 2 hours per day, avoid skipping meals, maintain a healthy weight, understand healthy eating, and have a well-balanced diet. A paired samples t-test was used to evaluate the effectiveness of weight management education. The test showed a statistically significant improvement in parents’ attitudes toward weight management strategies when comparing the pre-and post-test. Education regarding weight management should first be provided to parents of obese pediatric patients to improve their attitude toward healthy lifestyle modifications for their child to promote adherence and success in the weight management program.

Keywords: pediatric obesity, weight management, parent education
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Introduction

Over the past few decades, rates of childhood obesity have continued to increase at alarming rates. According to the Centers for Disease Control and Prevention (CDC) (2019), the prevalence of obesity in 2015 among individuals aged between 2 and 19 years old in the United States was 18.5%, affecting 13.7 million children and adolescents. Therefore, without adequate intervention, through weight management programs and education, rates of childhood obesity will continue to escalate and extend into adulthood.

Problem Statement

According to Goran (2017), factors such as dietary intake, disordered eating, physical activity, environment, sedentary time, and lack of sleep can lead to increased risk of obesity in children and adolescents. Cultural practices within families may have negative effects on dietary intake and physical activity, which are contributing factors to childhood obesity. Parent and family involvement is critical to the success of pediatric weight management. The American Academy of Pediatrics currently recommends a four-stage progressive approach to the prevention and treatment of pediatric obesity, starting with primary care interventions to intensive treatment at a pediatric weight management center (American Academy of Pediatrics, 2016).

Another study showed that although primary care providers could identify obese children, they were not equipped to implement a weight management program (Salahuddin et al., 2018). Providers believed that this could be attributed to the lack of proper training or the lack of sufficient time during the visits to implement the American Academy of Pediatric four-stage approach to decrease or treat pediatric obesity (Salahuddin et al., 2018). For this reason, weight management programs need dedicated visits to allow sufficient time to identify and discuss
current treatment recommendations. In addition, primary care providers should be equipped with the knowledge and may require additional research of their own concerning how to promote healthy lifestyle modifications to lower the body mass index (BMI) of the patients.

**Significance**

The National Health and Nutrition Examination Survey of 2016 highlighted the escalating rates of obesity in both youths and adults in the United States. According to Hales et al., (2017), the percentage of youth obesity in 1999 was 13.9%, compared to 18.5% in 2015. Childhood obesity disproportionately affects Hispanic children starting at a young age compared to non-Hispanic children (Hazrati et al., 2019). The occurrence of childhood obesity among children of ethnic minorities is of great significance. The survey identified the prevalence of obesity in children aged 2 to 19 years were highest among Hispanics at 25.8%, non-Hispanic blacks 22%, non-Hispanic whites 14.1% and non-Hispanic Asians 11% (Hales et al., 2017).

Without effective intervention to decrease childhood obesity, health care costs for those with high BMI will continue to skyrocket. According to CDC (2019), pediatric obesity currently costs the United States healthcare system approximately $147 billion per year. Successful weight management programs may be useful in decreasing the rate of pediatric obesity and its comorbidities, which can diminish healthcare costs.

Illnesses that were once believed to affect only adults are now prevalent in children due to elevated BMI at young ages. Obesity-related conditions include type 2 diabetes, acanthosis nigricans, hirsutism, polycystic ovarian syndrome, precocious puberty, nonalcoholic fatty liver disease, heart disease, pseudotumor cerebri, and slipped capital femoral epiphysis (American Academy of Pediatrics, 2016). Most conditions associated with obesity require specialty consultation, treatment, and surgery, secondary to complications. In addition to physical health
issues, obese youth are at risk of psychological effects, including anxiety, depression, and behavioral concerns (Hawkins et al., 2018), which may potentially become lifelong battles requiring therapy and treatment by a psychologist and/or psychiatrist.

Although there is an established link between certain ethnic groups and increased rates of childhood obesity, there is a lack of evidence of the rate at which other factors increase the risk of obesity in children of other races (Hales et al., 2017). Weight management programs should be individualized, considering not only the patient’s age but also their culture and ethnic background. Social determinants of health include economic stability, education, health and healthcare, neighborhood and built environment, and social and community context (Healthy People, 2020). Understanding how social determinants of health, in addition to the patient’s cultural and ethnic background and parental attitude toward healthy lifestyles, affect BMI is important when developing a successful weight management program.

**Summary of the Literature**

A literature review was conducted to identify weight management programs that have been used and shown to be effective in decreasing pediatric obesity. The databases used to search for literature included CINHAL, PubMed, and Google Scholar. The search terms used were “pediatric weight management,” “childhood obesity,” “weight reduction,” and “parent attitude.” The date range used for the search was from January 2016 through February 2021. Search limitations included articles that were peer reviewed, published in English, and published within the United States. A total of 9,980 articles were initially identified. To further narrow the search results, search terms “pediatric weight management” and “parents pediatric obesity” were used; a total of 586 articles that focused on patients aged 5-18 years were retrieved. Only 12 articles that related to the PICO question were retained and used for the literature review.
Hawkins et al. (2018) conducted a retrospective review of 698 charts of patients aged 18 months to 18 years who were referred from a primary care office to be evaluated by the Healthy Eating with Resources, Options, and Everyday Strategies (HEROES) program. The HEROES program involves a multidisciplinary team, including a physician or advanced practice nurse, dietitian, social worker, psychologist, and exercise specialist, that speaks about clinical management and exercise interventions. Patients are expected to follow up with the team every 2 to 3 months. An optional additional service at the HEROES clinic included exercise and a 12-week fitness educational program taught by a dietitian, with a focus on goal setting and healthy lifestyle changes. The HEROES program proved to be effective in reducing pediatric obesity in patients who completed at least 26 hours of contact time with the team. This study incorporated multiple disciplines to promote a holistic balanced team approach to decrease the rates of pediatric obesity.

Kebbe et al. (2019) conducted a qualitative study to assess adolescents’ involvement, from their own perspective, in their weight management programs. The study included 13- to 17-year-old patients who were overweight or obese from two pediatric weight management clinics in Canada. The participants completed interviews to identify their preferred involvement within the weight management program and the extent of parental involvement. Adolescents showed an increased desire to make more independent decisions regarding their health care and preferred to be included in the goal-making process. This study demonstrated that adolescents find value in being included in the discussion and implementation of their weight management program. A patient- and family-centered approach can be ideal for adolescent weight management.

Although the implementation of a family-centered approach to pediatric weight management is ideal, some families face challenges when trying to promote healthy lifestyle
modifications. Wylie-Rosett et al. (2018) conducted a randomized controlled trial in safety-net primary care settings to evaluate the incorporation of weight management services into pediatric outpatient care. The safety-net settings are primary care pediatric offices located in low-resource areas in the Bronx, New York. According to the parents, the contributing barriers increasing their children’s risk of obesity included unsafe neighborhoods, lack of recreational facilities and sports, a plethora of fast food options with high-calorie foods used as rewards, and long workdays of parents. Children aged 7 to 12 years with BMI ≥ 85th percentile were randomly divided into two groups. One group received quarterly visits with a pediatrician to discuss their weight management recommendations, and the other group received the same frequency of visits in addition to a behavioral change component, with a focus on dietary changes and physical activity. The behavioral change component included food preparation and physical fitness sessions for the child. The study concluded that the group that received the additional behavioral change component did not necessarily show a significant decrease in BMI compared to the group that only received visits with the pediatrician. In addition, behavioral health modifications were not effective in treating pediatric obesity due to the lack of improvement in the treatment group’s BMI. Furthermore, although the behavioral change component included food preparation, this intervention may not be successful if families do not have access to nutritious foods. Therefore, weight management programs should also assess social barriers within different populations in order to implement appropriate interventions to help children achieve a normal BMI.

Hill et al. (2019) developed a program called iChoose that targeted English-speaking patients aged 8 to 12 years with BMI ≥ 85th percentile. The program was 3 months in duration and began with a 90-minute session every month to discuss nutrition, behavior modification, and exercise time. Support telephone calls were made weekly, and patients participated in 2-hour
long exercise sessions per week. The behavioral health modification sessions were held every other week and led by a registered nurse. The iChoose program resulted in decreased rates of obesity within the study population. Nutrition, exercise, and behavioral modifications interventions have shown to be critical in lowering the BMI for pediatric patients. Education for the family may promote a positive attitude toward optimal nutrition via changes in diet, eventually leading to weight loss and a healthier lifestyle. The study showed a direct correlation between lowering BMI and education on ways to improve children’s diet and exercise level.

The United States Preventive Services Task Force reviewed 45 trials that focused on evidence of screening for obesity in children and adolescents and the benefits and harms of weight management interventions (Grossman et al., 2017). It was found that patients who received a total of 26 or more contact hours of comprehensive intense behavioral interventions over the span of 2 to 12 months showed weight loss. The behavioral interventions included discussions and information regarding healthy eating, exercising, reading food nutrition labels, goal setting and monitoring by the patient, and physical activity. The study recommended that providers screen children for obesity starting at age 6 years. It was demonstrated that early detection and identification of children with obesity or at risk of becoming obese allows for early intervention to take place. Primary care pediatric providers should be knowledgeable and feel comfortable when discussing BMI with patients and their families, in addition to understanding parents’ attitudes regarding weight management and healthy lifestyles and providing them with age-appropriate education to help decrease their BMI.

Kumar et al. (2019) conducted a multicenter observational cohort study of patients aged 2 to 18 years from 31 Pediatric Obesity Weight Evaluation Registry (POWER) sites. POWER was established in 2013 to serve as a centralized data registry for multicomponent pediatric weight
management programs, including behavioral, medical, nutritional, and physical activity assessments. A total of 6454 pediatric patients were enrolled at one of the POWER sites and participated in educational sessions between 4 and 12 months. Data showed improvement in BMI percentiles in patients between the 10 and 12 months of treatment who had participated in more than 7 visits over the course of the program. The greater the amount of time spent in educational sessions proved to yield better outcomes for the pediatric patients in decreasing their BMI percentiles. This may be because increased visits and time spent with other obese patients and their families promoted both an increased adherence to weight management programs and a change in their attitudes regarding weight management and healthy lifestyle changes. Families may have found support in one another.

Turer et al. (2016) performed a mixed-method analysis of a survey completed by parents of children aged 2 to 18 years to assess if the parent agreed that the child was overweight or obese. Parental input is valued and needed in pediatric weight management programs. Parents who are in denial or do not believe their child is overweight or obese may not adhere to recommendations. The surveys were completed by 242 parents of 244 children. Two common themes were identified: wanting a change in weight status assessment and the need for parenting advice. Parents believed the BMI assessment was not accurate and did not correlate with the patient’s ethnicity or true weight measurement. Parents also requested assistance to find healthier options for nutritional options to assist in lowering their child’s BMI. It is important to provide parents with an accurate measurement of the child’s BMI and information regarding proper nutrition. Growth charts along with handouts can provide parents with visual representation to tangibly see their child’s abnormal weight status and education pamphlets can serve as a reference or guide. The patient and their family must first understand the child is obese, based on
the calculated BMI, prior to any interventions being successful. Tangible education in the form of handouts is easy to understand and may be more beneficial for parents and children who are visual learners. Education may help alter parental perceptions regarding weight management and healthy lifestyle changes.

Bottino et al. (2018) conducted 29 group visits in 2 primary care pediatric clinics in Boston for children aged 2 to 18 years who were obese. A total of 96 patients participated in the study. The visits focused on social support, mind-body techniques, nutrition, and exercise counseling for patients and their families. Over time, there was an increase in attendance in visits with high family satisfaction, and few patients were found to have a reduction in BMI percentile. Parents verbalized that it was difficult to attend the visits due to multiple sessions and schedule conflicts. Therefore, the visits were scheduled on the weekends and evenings to avoid patients missing school. Scheduling challenges can be a limitation for weight management programs in the pediatric population. Further assessment is needed to determine why these educational sessions did not have an impact in lowering the BMI, given the small number of patients who were found to have a lower BMI at the end of the study. It is important to assess if the patients in this study implemented what they learned about nutrition and exercise counseling in their daily lives and whether the outcome would have been different if parental attitudes regarding weight management and obesity were assessed.

Identifying resources for weight management programs in adolescents can be a difficult task. SanGiovanni et al. (2019) compiled surveys from 74 primary care pediatric providers between August and October 2016 to measure the perceived effectiveness of the current counseling and management of overweight and obese adolescents. More than 50% of the primary care providers were aware of smartphone applications that track exercise and healthy eating to
manage their weight. However, only 40% of them admitted to recommending their patients to utilize smartphone applications to assist in managing their weight. Given the high prevalence of technology in today’s society, many adolescents have access to a smartphone that can be utilized to help track their weight, exercise, and nutrition, which can assist in lowering their BMI.

A mixed methods study conducted by Andrews et al. (2017) aimed to evaluate the feasibility and implementation of a pediatric obesity treatment partnership between Duke Children’s pediatric weight management clinic and the Durham Department of Parks and Recreation. “Bull City Fit” is a partnership program that was developed between Duke and the Durham Department of Parks and Recreation to focus on family-centered, community-based weight management. A retrospective study of obese patients aged 2 to 17 years enrolled in “Bull City Fit” was conducted to identify the positive impact of the program on the patients. A total of 171 patients were included in the study to determine if there was a correlation between involvement in the Parks and Recreation Agency and the promotion of healthier lifestyles. The “Bull City Fit” program was led by trained staff to offer games, sports, and cooking classes at the recreational facilities. During the study period, the number of community members who used the recreation facility increased by 26%, which consisted mostly of patients enrolled in the “Bull City Fit” program. Furthermore, > 50% of parents who completed the surveys reported they enjoyed the option of the Parks and Recreational facility as it gave their child a location to participate in recreational activities. Identification of recreational options for patients that provide a safe place for exercise should be incorporated into weight management programs since lack of physical activity may result from not having a safe place to exercise in.

Bean et al. (2019) performed a randomized controlled trial of parents whose children, aged 5 to 11 years, were overweight. The study focused on the impact of motivational
interviewing on engagement in a parent-exclusive pediatric weight management program. The study found that the parents who received a single telephone call prior to their child participating in a weight management program improved treatment attendance. Low treatment engagement from the parent and early discontinuation of treatment showed to negatively impact the success of the weight management program. Parent participation has proven to be crucial to the success of their child in a weight management program. Therefore, improving parents’ knowledge and attitude toward weight management and healthy lifestyles should be the starting point for weight management programs.

Sherwood et al. (2019) performed a randomized controlled trial to evaluate the efficacy of a parent-targeted obesity prevention intervention using phone coaching and primary care pediatric provider counseling. Children between the ages of 5 and 10 years with a BMI between the 70th and 95th percentile were included in the study. During the child’s well child examination, the parents were counseled on weight management interventions including dietary intake, physical activity, and sedentary behaviors. Approximately 1 to 2 weeks after the well child visit, the parents received a phone survey where they were asked if the primary care provider discussed the health kids handout, addressed the child’s physical activity, healthy eating, and sedentary behaviors. In addition, the parents also received biweekly phone calls over the first 3 months after the visit, followed by monthly phone calls for the remaining 8 months of their first year in the study. The phone calls with the parents began by setting goals for the upcoming month and the parent assessing the family’s current status of making lifestyle changes. The children were followed at 12 and 24 months to evaluate if their BMI had improved. Overall, the study did not show significant improvement in the child’s BMI percentiles. Although it is important to follow up with parents during the weight management intervention, initial
assessment of the parents’ attitude toward implementing change in the focused categories of the child’s physical activity, healthy eating, and sedentary behaviors could have improved the overall outcome of the study.

Knowledge Gaps

After a thorough review of the literature, the impact of social determinants of health on pediatric obesity remains unclear. The studies did not determine the factors leading to increased risk of elevated BMI in patients. Although education was provided to study participants, with an emphasis on nutrition, education, and behavioral modifications, no assessment was performed to verify if the participants had access to nutritious foods or a safe environment to exercise in. Education can be continuously provided regarding lifestyle modifications: however, if children do not have access to healthy food or a safe place to exercise in, they will not benefit from the weight management counseling. Assessment of the patient’s needs and available resources were not included in the studies that were discussed. In addition, there was no assessment of the parents’ attitude and willingness to adhere to a weight management program for their child. Parent attitudes toward healthy lifestyles must first be addressed to optimize the child’s adherence to any weight management program. These assessments should be included in the initial evaluation of the child’s weight and BMI for the weight management plan and counseling to be tailored specifically to the child with additional resources provided based on the child’s needs.

Conclusion of Summary of the Literature

Obesity is a significant health concern, especially in the pediatric population. Primary care pediatric providers are expected to screen and educate parents whose child has an elevated BMI and innerve to promote optimal health and prevent complications of childhood obesity.
Providing family- and patient-centered education has been shown to promote increased adherence to weight management programs and marked changes in the patient’s BMI. Parent involvement through the use of verbal education and written educational material, and discussions where the parents can ask questions, is crucial to the success of the proposed projects. There were no studies found in the literature review identifying social determinants of health placing the patient at increased risk of an elevated BMI. Understanding risk and environmental factors contributing to the patient’s high BMI allows the provider to intervene and personalize the weight management plan. Although many of the studies showed lack of parent involvement correlated to decreased improvement in their child’s weight and BMI, no studies addressed the parent’s attitude toward weight management. Acknowledging the parent’s attitude regarding weight management and having an open discussion with the parent allows the provider to tailor the weight management program based on that family’s specific needs.

**Quality Improvement Project**

**Purpose**

The DNP project entailed the implementation of a parent education intervention for a weight management program to improve parents, of obese patients, attitudes toward healthy lifestyle changes. The practice currently has a weight management program that is structured to identify patients of any age with a BMI ≥ 85th percentile during their well check exam. These patients follow up on a separate day to discuss their weight. During the visit, the provider is expected to review the patient’s current BMI and weight along with their goal BMI and weight. Handouts discussing portion sizes for the different age groups and alternative food choices are discussed. A contract with the patient is established, and the patient is expected to sign stating
they will exercise for at least 1 hour per day, limit media time, and observe food portion sizes. In addition, the patient is expected to follow up every 3 months to track their weight and BMI.

Although the clinical site has a weight management program that has been used for years, it does not focus on a specific age group. In addition, there is no data to track the success of the current weight management program as many patients fail to follow up and comply with weight reduction recommendations. The project focused on the parents of patients aged 10-16 years with an elevated BMI ≥ 95th percentile. The end goal is to tailor and implement weight management education to parents of obese and overweight children below 10 years of age.

**PICO Question**

The quality improvement project answered the question, “Does an educational intervention improve parental attitude toward weight management and healthy lifestyle initiatives in parents of pediatric obese patients?”

- Population: pediatric obese patients
- Intervention: educational intervention
- Comparison: none
- Outcome: improve parental attitude toward weight management and health lifestyle initiatives

**Objectives**

The project goal was to improve parents’ attitude towards the importance of having their children live a healthier lifestyle, using an educational handout. The program focused on adequate assessment, education, and collaboration between the provider and parents to decrease the child’s BMI while considering social determinants of health. A pre- and post-assessment of parental attitude regarding weight management and healthy lifestyle initiatives using a Likert
scale was administered to the parent before and after weight management education was provided. The documented change in parents’ attitude after the educational material was provided allows for future implementation of the education to parents of any child with BMI \( \geq 85^{\text{th}} \) percentile, regardless of age.

**Definition of Terms**

The abbreviation “BMI” is used for body mass index which is the patients’ weight in kilograms divided by the square of their height in meters (CDC, 2019). An elevated BMI can be indicative of high body fat. Obesity is defined as BMI \( \geq 95^{\text{th}} \) percentile for age and sex (Klish & Skelton, 2020).

**Theoretical Framework**

This quality improvement project consists of the implementation of an educational intervention to improve parents’ attitudes toward weight management and healthy lifestyle modifications with a focus on social determinants of health. The Health Belief Model (HBM) was used to guide the project. HBM is based on the perceived susceptibility and severity and perceived benefits and barriers from the patient’s perspective. This model was used for the project because the parent is being called to action after understanding the risk factors and effects of elevated BMI, along with the benefits of decreasing their BMI to prevent future complications. It is important for the parents to understand the benefits of improving their child’s weight and lifestyle while also identifying current barriers preventing their children from living healthier lives. Parents’ perceived benefits and attitudes of implementing healthier lifestyles to decrease BMI may promote adherence to a weight management program for their child. Understanding the negative effects that have been linked to pediatric obesity may increase the likelihood of participation and may contribute to a change in parental attitudes regarding weight
management and healthy lifestyle initiatives. The provider will serve as the motivation for health and call the parent to action. The parent will act by implementing lifestyle changes that are limiting their child, as identified by the social determinant questions in the pre-test questionnaire. The main goal of the project was to improve parents’ attitudes regarding promoting healthy lifestyle modifications to decrease their children’s BMI.

Methodology

Setting and Sample

The location of the study was a primary care pediatric office. The private primary care practice currently has four pediatricians and two pediatric nurse practitioners. All obese patients with BMI ≥ 95th percentile between the ages of 10 and 16 years were contacted via telephone by office staff and scheduled for an initial visit. The office manager identified over 150 patients within the practice who met the criteria of a BMI ≥ 95th percentile as documented by their well check exam within the past year. The sample size for the project was at least 10 parents who meet the criteria based on their children’s age and BMI, as outlined in the project description.

Intervention

During the initial visit, the DNP student met with the parent to discuss the current weight and BMI, in addition to the patient’s goal weight. A pre-test survey through Qualtrics assessed the parent’s attitudes toward weight management, healthy lifestyles, economic stability, and a safe environment as social determinants of health. A family that is supportive and encouraging is the first step to improving a child’s exercise and dietary habits. Economic stability allows the family access to high-quality nutritious foods, and a safe environment provides a safe haven for the child to exercise. The questions read, “Does your child have access to nutritious foods, including fruits and vegetables?” and “Does your child have access to a safe place to exercise?”. 
The questionnaire will have the parents choose from “strongly agree,” “agree,” “disagree,” and “strongly disagree.” Education in the form of a pamphlet was provided including information regarding diet, physical fitness, safe community locations where the patient can exercise, and resources within the community for nutritious foods. During the visit, parents were allowed to ask questions after the educational intervention. This encourages parents to be active participants in their child’s weight management program. The parents then completed a post-test to evaluate their attitudes after partaking in the educational intervention.

**Data Collection**

Pre-test and post-test to evaluate parents’ attitude toward the weight management education and lifestyle modifications were completed anonymously through Qualtrics. Parents were allowed to ask questions regarding weight management education to encourage them to improve their attitude towards the discussed lifestyle modifications to improve their child’s BMI. Qualtrics was used to compare pre- and post-test answers and keep them on a cohesive database.

**Data Analysis**

The results of the pre- and post-education were evaluated after all parents had fully participated. A paired t-test was used to evaluate the effectiveness and understanding of the weight management education. Data were analyzed using IBM SPSS (Statistical Package for the Social Sciences) Statistics application.

**Protection of Human Subjects**

The protection of human subjects was established through the Florida International University Institutional Review Board approval. Parents had the option to either participate or not in the weight management education program. Parents were encouraged to make lifestyle modifications to promote weight loss and decreased the BMI of their children.
Results

A total of 10 parents completed the pre- and post-test questionnaire. The quality improvement project aimed to not only improve parents’ attitudes toward weight management but also identify social determinants of health, such as access to nutritious foods and a safe place to exercise. The results of the social determinants of health can be seen in figure 1.

A paired samples t-test was conducted to evaluate whether there was a statistically significant difference between the means of the pre- and post-test questionnaire after the weight management education. Each response was given a number: not at all important = 1, slightly important = 2, important = 3, moderately important = 4, and very important = 5. The mean for each question increased in the post-test. There was an 8% increase in overall mean change from pre- to post-test results (Figure 1). Analysis of the social determinants of health questionnaire showed that 10% of parents disagreed that their child has access to a safe place to exercise. The complete results of the questionnaire are depicted in Figure 2. The greatest mean change in the pre- and post-test questionnaire was for the question “How important is it for your child to avoid skipping meals during the day?” with a 1 point increase. Although the greatest change in mean was noted in the skipping meals throughout the day question, the lowest increase in mean was in the question “How important is it for your child to not skip breakfast?” Parents did not find it as important to avoid skipping breakfast as they did skipping meals throughout the day. The mean change per question for the pre- and post-test is depicted in figure 3.
Figure 1

Mean Difference Results for the Pre-Test and Post-Test

![Pie chart showing mean difference results for pre-test and post-test]

Figure 2

Results for the Social Determinants of Health Questions

<table>
<thead>
<tr>
<th>Social Determinants of Health</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your child have access to nutritious foods, including fluids and vegetables?</td>
<td>20%</td>
<td>80%</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Does your child have access to a safe place to exercise?</td>
<td>30%</td>
<td>60%</td>
<td>10%</td>
<td>0</td>
</tr>
</tbody>
</table>
**Figure 3**

*Mean Results for the Pre-Test and Post-Test Questionnaire*

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre-Test</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>How important is it for your child to get at least 8 hours of sleep per night?</strong></td>
<td>4.1</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>How important is it for your child to not skip breakfast?</strong></td>
<td>3.8</td>
<td>4</td>
</tr>
<tr>
<td><strong>How important is it for your child to exercise at least 1 hour every day?</strong></td>
<td>3.8</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>How important is it for your child to eat 5 servings of fruits and/or vegetables per day?</strong></td>
<td>3.7</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>How important is it for your child to drink enough water every day?</strong></td>
<td>4.1</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>How important is it for your child to avoid juices and sodas?</strong></td>
<td>3.6</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>How important is it for your child to avoid cookies and chips?</strong></td>
<td>3.6</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>How important is it for your child to limit electronics to less than 2 hours per day?</strong></td>
<td>3.1</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>How important is it for your child to avoid skipping meals during the day?</strong></td>
<td>3.3</td>
<td>4.3</td>
</tr>
<tr>
<td><strong>How important is it for your child to maintain a healthy weight?</strong></td>
<td>3.8</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>How important is it for your child to understand healthy eating?</strong></td>
<td>4.1</td>
<td>4.4</td>
</tr>
<tr>
<td><strong>How important is it for your child to have a healthy well balanced diet?</strong></td>
<td>3.6</td>
<td>4.5</td>
</tr>
</tbody>
</table>
Discussion

Results of the project showed improved parental attitudes toward weight management and lifestyle modifications. Understanding parental perceptions of these topics is key in order to clarify misconceptions and answer any questions the parents may have after education is completed. Education should initially be provided to parents as a foundation to then build upon and discuss lifestyle changes with the child or adolescent themselves. This can improve adherence to the weight management program. Providing parents with their child’s BMI and weight allows parents to view their child’s BMI and recommended weight for those parents who have difficulty believing their child is overweight as seen in the Turer et al. (2016) study. This can increase compliance with the weight management interventions.

Wylie-Rosett et al. (2018) discussed the barriers that parents felt were affecting their child’s weight, which included unsafe neighborhoods and easy access fast food options. The study identified that there were patients who lacked a safe place to exercise and adequate access to nutritious foods. Education about available community resources is a critical aspect to ensuring the success of weight management programs regardless of the geographic location, since lack of resources can result in non-adherence to the program.

Unlike the studies in the literature review by Hill et al. (2019) and Hawkins et al. (2018), a multidisciplinary approach was not used in this quality improvement project. A multidisciplinary team approach should be incorporated into future weight management educational programs since this can increase the program’s success. There are different factors that contribute to childhood obesity, and a well-rounded team of professionals can decipher what the issues at hand are in order to incorporate solutions that are feasible for the child and family.

Limitations
This quality improvement project had some limitations. First, is the small sample size. Second, after the quality improvement project was completed, it was observed that the pre- and post-test surveys took place at the same time as the mandatory medical home surveys from the study setting, leading to possible survey fatigue from parents.

**Implications for Practice**

Nurse practitioners must be actively involved in quality improvement by implementing evidence-based practices. Pediatric obesity is a significant healthcare crisis that is first diagnosed in the primary care setting; therefore, implementation of this quality improvement project was crucial to improving the outcome for pediatric patients. It aimed to improve the attitude of parents of pediatric obese patients toward weight management and healthy lifestyle changes. Pre- and post-test Likert scale identified an improvement in parents’ attitudes regarding weight management lifestyle modifications. Moving forward with the results of this quality improvement project, the office should continue to monitor the overall change in BMI for the patients whose parents received the educational intervention.

Implications for practice include parental involvement in pediatric weight management programs. Without the understanding and support from the parent or family, the implementation of a weight management program will not be successful. When formulating a weight management program, education must be provided to the parents first and then the child or adolescent.

**Dissemination Plan and Sustainability**

To sustain the quality improvement project within the practice, there must be support from the stakeholders as well as improved patient outcomes. A quality improvement plan will be established within the practice. Every quarter the quality improvement project’s educational
intervention will be assessed to determine its success in decreasing the BMI of the pediatric patients whose parents have received the education. If the educational intervention is unsuccessful in decreasing BMI in pediatric overweight and obese patients, the quality improvement project will be reviewed and revised to ensure the most recent evidenced-based practices are included. The National Association of Pediatric Nurse Practitioners hosts an annual conference where the presentation of the project can take place. The results of the project will be presented to other healthcare providers so they can improve their own weight management practices. Aside from the conference, two peer-reviewed journals were identified for manuscript submission: The Journal of Pediatrics and Clinical Pediatrics.

Conclusions

Increasing rates of pediatric obesity require nurse practitioners to promptly assess and implement healthy lifestyle modifications. The study identified that some patients were at risk of lack of access to health and nutritious foods as well as a safe environment to exercise. Furthermore, the study showed that there was a positive change in parents’ attitudes after receiving the weight management and lifestyle change educational tool. Discussion and resources for patients at risk of social determinants of health must be incorporated into any weight management program to set up the patient for success. The next steps of the quality improvement project would be to establish a relationship between improved parental attitude and an actual decrease in BMI over a period of time for the pediatric patient. The ultimate goal, however, will be to decrease the rates of pediatric obesity for children of all ages in the primary care office.
References


Appendix A
Letter of Support

May 28, 2021

Dr. Ivette Hidalgo PhD, APRN, PPCNP-BC
Clinical Associate Professor
Nicole Wertheim College of Nursing & Health Sciences
Florida International University

Dear Dr. Hidalgo,

Thank you for inviting Personal Care Pediatrics to participate in the DNP project of Kayla Davis. Our office understands that she will be conducting this project as a requirement of the Doctor in Nursing Practice program at Florida International University. After full review of the proposal for the project titled “Improving parent’s attitude toward pediatric weight management interventions: A quality improvement project.” Our office grants her permission to conduct the project at this practice.

Our practice values promoting a healthy lifestyle from birth through early adulthood. This project intends to improve the overall health of our patients who meet criteria and adhere to the proposed project. This project aligns with our goal of educating patients and parents to lower rates of pediatric obesity within our practice. We understand that prior to the start of the intervention the Florida International University Institutional Review Board will evaluate and approve all aspects of the project.

The information and data gathered throughout the program will remain confidential and secured within our office. We expect that Kayla Davis will adhere to our office standards of care in a professional manner. As the office administrator of the practice with permission from the partner physicians, we support the participation of our practice in this project and look forward to working with you.

Veronica Guzman
Office Administrator
Personal Care Pediatrics
MEMORANDUM

To: Dr. Ivette Hidalgo
CC: Kayla Davis

From: Maria Melendez-Vargas, MIBA, IRB Coordinator

Date: July 26, 2021

Protocol Title: “Improving Parent Attitude Toward Pediatric Weight Management Interventions: A Quality Improvement Project”

Office of Research Integrity Research Compliance, MARC 414

The Florida International University Office of Research Integrity has reviewed your research study for the use of human subjects and deemed it Exempt via the Exempt Review process.

IRB Protocol Exemption #: IRB-21-0334 IRB Exemption Date: 07/26/21 TOPAZ Reference #: 110741

As a requirement of IRB Exemption you are required to:

1. 1) Submit an IRB Exempt Amendment Form for all proposed additions or changes in the procedures involving human subjects. All additions and changes must be reviewed and approved prior to implementation.
2. 2) Promptly submit an IRB Exempt Event Report Form for every serious or unusual or unanticipated adverse event, problems with the rights or welfare of the human subjects, and/or deviations from the approved protocol.
3. 3) Submit an IRB Exempt Project Completion Report Form when the study is finished or discontinued.

Special Conditions: N/A

For further information, you may visit the IRB website at http://research.fiu.edu/irb. MMV/em
Appendix C

Recruitment Letter

Dear parent/guardian,

My name is Kayla Davis, and I am a student from the Graduate Nursing Department at Florida International University. I am contacting you with the permission of the providers at Personal Care Pediatrics. This letter is to invite you to participate in a quality improvement project at Personal Care Pediatrics. The project is aimed to collect data to improve the health of your child and future patients of the practice through lifestyle modifications. You are eligible to take part in this project based on your child’s last recorded body mass index.

If you decide to participate in the project, there is no risk to you for participating and participation in the project is fully voluntary. There will be no compensation for participation.

Please call the office at [redacted] or email me at [redacted] with any questions.

Thank you,

Kayla Davis APRN, CPNP-PC
SUMMARY INFORMATION

Things you should know about this study:

- **Purpose**: To improve parents’ attitude toward pediatric weight management.
- **Procedures**: If you choose to participate, you will be asked to participate in a pre- and post-test survey before and after an educational intervention.
- **Duration**: Your total participation time will be approximately 10 minutes each for the pre-test and post-test and 20 minutes for the educational presentation.
- **Risks**: Participants are expected to experience no risk, harm and/or discomfort during participation in this project. Risks are not greater than those faced in normal life while participating in a similar activity.
- **Benefits**: The main benefit to you from this research is to improve your child’s body mass index (BMI).
- **Alternatives**: There are no known alternatives available to you other than not taking part in this study.
- **Participation**: Taking part in this research project is voluntary. You can withdraw at any time without giving reason or without cost.

Please carefully read the entire document before agreeing to participate.

PURPOSE OF THE STUDY

The purpose of this study is to improve parents’ attitude toward pediatric weight management.

NUMBER OF STUDY PARTICIPANTS

If you decide to be in this study, you will be one of 10 people in this research study.

DURATION OF THE STUDY

Your total participation time will be approximately 10 minutes each for the pre-test and post-test and 20 minutes for the educational presentation.
PROCEDURES

If you agree to be in the study, we will ask you to do the following things:
1. Complete a pre-test questionnaire via Qualtrics, an online data collection site.
2. Listen to an educational session discussing lifestyle modifications and suggestions to improve your child’s weight and body mass index.
3. Complete a post-test questionnaire via Qualtrics, an online data collection site.

RISKS AND/OR DISCOMFORTS

Participants are not expected to experience risks, harms, or discomfort through the participation of this quality improvement project. The risks are not greater than those faced in normal life while participating in a similar activity. There is no cost or legal intervention. If a participant feels uncomfortable with any of the interactions or is concerned about the content of the information shared with the interviewer, he/she may choose to withdraw from the study.

BENEFITS

The study has the following possible benefits to you: improving your child’s body mass index through the implementation of the educational material

ALTERNATIVES

There are no known alternatives available to you other than not taking part in this study. Any significant new findings developed during the course of the research which may relate to your willingness to continue participation will be provided to you.

CONFIDENTIALITY

All data will be collected anonymously. No identifiable private information will be collected as a part of the pre-test and post-test surveys. Only investigators will have access to the completed pre-test and post-test surveys. There will be no hard copies of the pre- or post-test surveys. Data collected from the pre-test and post-test surveys will be tabulated via Qualtrics, an online system, and will be maintained on a password protected laptop computer.

USE OF YOUR INFORMATION

No personal identifiable information will be used for his study.

COMPENSATION & COSTS
You will not receive a payment for your participation. There are no costs to you for participating in this study.

**RIGHT TO DECLINE OR WITHDRAW**

Your participation in this study is voluntary. You are free to participate in the study or withdraw your consent at any time during the study. You will not lose any benefits if you decide not to participate or if you quit the study early. The investigator reserves the right to remove you without your consent at such time that he/she feels it is in the best interest.

**RESEARCHER CONTACT INFORMATION**

If you have any questions about the purpose, procedures, or any other issues relating to this research study you may contact Kayla Davis at [redacted], [redacted].

**IRB CONTACT INFORMATION**

If you would like to talk with someone about your rights of being a subject in this research study or about ethical issues with this research study, you may contact the FIU Office of Research Integrity by phone at 305-348-2494 or by email at ori@fiu.edu.

**PARTICIPANT AGREEMENT**

I have read the information in this consent form and agree to participate in this study. I have had a chance to ask any questions I have about this study, and they have been answered for me. By clicking on the Qualtrics link I agree to participate in this quality improvement project.
Appendix E

**Pre-Education Likert Scale Questionnaire**

<table>
<thead>
<tr>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does your child have access to nutritious foods including fruits and vegetables?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does your child have access to a safe place to exercise?</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Parent or guardian will rate their attitude toward healthy lifestyles on a scale of “Very Important”, “Moderately Important”, “Important”, “Slightly Important”, “Unimportant”

1. How important is it for your child to get at least 8 hours of sleep per night?
2. How important is it for your child to not skip breakfast?
3. How important is it for your child to exercise at least 1 hour every day?
4. How important is it for your child to eat 5 servings of fruits and / or vegetables per day?
5. How important is it for your child to drink enough water every day?
6. How important is it for your child to avoid juices and sodas?
7. How important is it for your child to avoid cookies and chips?
8. How important is it for your child to limit electronics to less than 2 hours per day?
9. How important is it for your child to avoid skipping meals during the day?
10. How important is it for your child to maintain a healthy weight?
11. How important is it for your child to understand healthy eating?
12. How important is it for your child to have a healthy well balanced diet?
Post-Education Likert Scale Questionnaire

Parent or guardian will rate their attitude toward healthy lifestyles on a scale of “Very Important”, “Moderately Important”, “Important”, “Slightly Important”, “Unimportant”

1. How important is it for your child to get at least 8 hours of sleep per night?
2. How important is it for your child to not skip breakfast?
3. How important is it for your child to exercise at least 1 hour every day?
4. How important is it for your child to eat 5 servings of fruits and / or vegetables per day?
5. How important is it for your child to drink enough water every day?
6. How important is it for your child to avoid juices and sodas?
7. How important is it for your child to avoid cookies and chips?
8. How important is it for your child to limit electronics to less than 2 hours per day?
9. How important is it for your child to avoid skipping meals during the day?
10. How important is it for your child to maintain a healthy weight?
11. How important is it for your child to understand healthy eating?
12. How important is it for your child to have a healthy well balanced diet?
HEALTHY DO’S AND DON’TS OF WEIGHT LOSS

Ready to live a healthy lifestyle? Start with a plan. The more you prepare for your weight loss journey, the more successful you’ll likely be. Follow these “do’s” and “don’ts” to get started.

**DO’S**

- **KEEP A FOOD DIARY**
  People often underestimate how much they eat in a day. Write down what you eat and when you eat it to account for all meals, snacks, drinks, and desserts. MyFitnessPal is a great app to help track.

- **EAT SOME FAT**
  Healthy fats, like Omega-3 and Omega-6, help you burn body fat while maintaining muscle. They’ll make you feel fuller and may reduce your absorption of carbohydrates.

- **DRINK PLENTY OF WATER**
  Drink at least 6 glasses per day to stay hydrated, feel full, and increase the rate at which you burn calories.

- **WATCH YOUR PORTION SIZE**
  Fruits and vegetables should fill half your plate, with grains and protein on the other half.

- **MAKE A MEAL PLAN**
  Create a menu of healthy foods for the week. Take it with you when you shop, and only purchase items on the list so you stick to it.

- **SLEEP BETTER**
  A good 8 hours of sleep helps regulate your appetite hormones, so you recognize when you’re full. Lack of sleep can slow your metabolism making it hard to lose weight.

- **EAT FIBER**
  Keep your gut healthy and burn more belly fat with plenty of fiber. Find it in almonds, flaxseed, and veggies.

- **EXERCISE**
  Regular physical exercise is important for weight loss success. It burns calories and increases lean body mass to rev up your metabolism. Try to exercise at least 1 hour every day.
SWITCH JUNK FOOD FOR HEALTHY FOOD
Swap potato chips for popcorn and bacon burgers for grilled salmon or chicken. Fill the plate with veggies, whole grains, and lean meats.

ADD VARIETY
Find a wide range of healthy recipes and foods to try. Sticking with the same few foods can get boring and may drive you to make unhealthy choices.
**DON’TS**

- **STARVE YOURSELF**
  You need to eat to lose weight. When you don’t eat your metabolism slows down and your body starts to keep energy in the form of sugars, fats, and glucose.

- **DEPRIVE YOURSELF**
  Deprivation leads to craving-induced binge eating, which can damage your metabolism. Small treats are allowed on occasion.

- **EXPECT A QUICK FIX**
  Losing weight and keeping it off requires a lifestyle change. That takes time and commitment. Ease into a plan and allow yourself some “free” meals or snacks of your choice to keep you motivated.

- **DRINK TOO MUCH SUGARY DRINKS**
  Sugary drinks like soda and juices are high in calories, reduce nutrient absorption, and can slow down metabolism.

- **EAT SUGAR, REFINED CARBOHYDRATES, AND PROCESSED FOOD**
  These calorie-dense foods have little nutritional value and may make you feel hungrier. Choose fruits, veggies, and whole grains instead.

- **EAT WHEN YOU’RE NOT HUNGRY**
  Check in with yourself before you reach for a snack. Are you really hungry, or are you just bored, tired, frustrated, or anxious? Start to understand emotional eating.

- **SKIP BREAKFAST**
  Eating breakfast fills you up and gets your metabolism going, so you won’t be hungry later in the day. It is the most important meal of the day.

- **FOCUS ONLY ON CALORIES**
  Cutting calories is important to weight loss, but so is eating healthy. Make sure you eat enough to generate energy and build muscle.

- **GIVE IN TO TEMPTATION**
  Get rid of sweets, chips, ice cream, and anything else in the house so you don’t eat it just because it’s there.

- **COMPARE YOURSELF WITH OTHERS**
  Losing weight with a friend or group can be very supportive, but don’t make it a competition. Judge your progress over time, not compared yourself to others around you.
WEIGHT MANAGEMENT

A healthy lifestyle is important to start at a young age. Taking small steps now will help prevent illnesses such as diabetes, high blood pressure, heart disease, and high cholesterol as you get older. We want you to live a long and healthy life and that begins with eating healthy and exercising.

Understanding your weight

Today your weight was:

Your BMI is:

Your ideal weight is between:

Weight to lose:

Your goal is to lose 1 to 2 pounds per week and follow up in 1 month for weight recheck and discussion.

Goals

1. Moderate-to-vigorous exercise for at least 1 hour everyday
2. Avoid juices and soda, grab a drink of water instead
3. Limit screen time (TV and cellphone) to less than 2 hours per day
4. Make healthy food swaps with each meal
5. Get at least 8 hours of sleep per night
6. Plan out meals for the week to avoid eating fast food
7. Eat at least 5 servings of fruits and or vegetables per day
8. Take a multivitamin everyday

Tools

Visit our website at pcpmds.com to find links to YouTube exercise videos

Visit myplate.gov for serving size recommendations

Visit nutrition.gov for information on healthy eating choices

Food Swap

Switch from this to that
Icecream → Yogurt
Milkshake → Smoothie
Candy → Fruits
White Rice → Brown Rice
Potato → Sweet Potato
Whole Milk → Low Fat Milk
White Bread → Wheat Bread
Fried Chicken → Baked Chicken
Community Resources

Boys & Girls Club "Healthy Lifestyles" Program
- William E. Slaughter Jr
- Thomas D. Stephanis
- Lauderhill Boys & Girls Club

Community Parks with walking and exercise trails
- Coral Gate Park
- Firefighters Park
- Kaye Stevens Park
- Margate Sports Complex
- Rock Island Fitness Park
- Serino Park

Food Resources

Access to nutritious meals including fruits and vegetables are important to living a healthy life. Below are some resources for meals:

Summer Meals
- Coconut Creek High
- Coral Glades High
- Coral Springs K-8
- Liberty Elementary
- Millennium Middle
- Tradewinds Elementary

Mobileschoolpantry.org provides nutritious grocery items throughout South Florida