Weight Management Program on Self-Esteem in Adolescent Females Classified as Obese

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Abstract

Today, nearly 20.5% of young people in America are overweight or obese, affecting roughly 12.7 million children and adolescents. The obesity trend has been shown to be a precursor not only to physiological ailments but also a major contributor to psychosocial issues. Obesity may be a trigger for low self-esteem with female adolescents presenting unique concerns with regard to the psychological effects of being overweight or obese. The purpose of this Doctor of Nursing Practice project was to determine if participation in a comprehensive weight management program for 50 female adolescents who are classified as overweight or obese significantly improves their self-esteem. The comparison study design measured self-esteem both prior to implementation of the weight management program and following completion of 12 weeks of the program. While the results were not significant, likely due to an unexpectedly low post-intervention survey return, many lessons were learned regarding interventions that improve self-esteem and benefit the psychosocial well-being of adolescent females as they transition to adulthood. Providers must refocus their attention on obesity in children, actively addressing quality of life concerns with as much fervor as physical concerns.

Keywords: obesity, overweight, adolescent, childhood, self-esteem, female, self-concept, body image
Weight Management Program on Self-Esteem in Adolescent Females Classified as Obese

According to the Centers for Disease Control and Prevention (CDC), childhood obesity has more than quadrupled in adolescents in the past 30 years, and today, nearly one out of every three young people in America, ages 2 to 19, is overweight or obese, affecting roughly 12.7 million children and adolescents. Obesity during childhood has been shown to be a precursor to numerous health problems in adulthood including bone and joint problems, sleep apnea, cancer, type 2 diabetes, hypertension and cardiovascular disease, as well as exhibiting a relationship to a diminished perception of quality of life (Griffiths, Parsons & Hill, 2010; Swallen, Reither, Haas & Meier, 2005; Zeller & Modi, 2006) and other psychosocial issues such as negative body image and body dissatisfaction, low self-esteem and depressive symptoms (Biro & Wien, 2010; Boutelle, Hannan, Fulkerson, Crow & Stice, 2010; CDC, 2014; Goldfield et al., 2010; O’Dea, 2006; Pesa, Syre & Jones, 2000; Phillips & Hill, 1998; Perrin, Boone-Heinonen, Field, Coyne-Beasley, 2010; Wang, Wild, Kipp, Kuhle & Veugelers, 2009; Xie et al., 2010).

Significance

The dramatic increase in the incidence of childhood obesity and sequela are associated with both physical and financial burdens that heighten awareness for the need to dedicate attention to swift and broad prevention and treatment strategies (Pomietto et al., 2009). Average annual medical expenditures are estimated to be roughly $732 higher for obese individuals than for normal weight individuals, and the cost of health care for patients with a BMI greater than 35 is estimated at 44% more than those who are not obese, further emphasizing the link between elevated BMI and the cost of health care (Bhattacharya & Bundorf, 2009; Speiser et al., 2005).
Negative stereotypes of overweight and obese individuals, in combination with a romanticized ideal of the ideal female physique and the stigma over being overweight as less-desirable, can affect girls’ body image and body satisfaction, which are correlated with lower self-esteem (Furnham, Badmin & Snead, 2002; Perrin et al., 2010; Xie et al., 2010). Obese and overweight adolescents may be at an increased risk of developing anxiety, low self-esteem, body dissatisfaction and depressive symptoms when compared to their overweight or normal weight counterparts, and the unique health needs of adolescent females require specific consideration when compared to their male peers (Boutelle et al., 2010; Brown, 2009; Chilton, Haas & Gosselin, 2014; Goldfield et al., 2010).

Local Issue

According to Blue Cross and Blue Shield of Kansas City (2012), the states of Missouri and Kansas rank 10th and 11th, making them two of the most overweight and obese states in the country with as many as 30% of the youth affected in the 2 states. Those living in the Midwest are not isolated from this phenomenon and must be prepared to confidently address weight issues in daily practice.

Diversity Considerations

According to Caprio et al. (2008), eating habits can be heavily influenced by cultural considerations. Racial, cultural and ethnic differences in obesity perception may influence motivation for treatment and change. Lifestyle is also influenced by culture with parental role modeling and environment impacting access to healthy foods and encouragement of regular physical activity. Open and honest conversation is needed between the child, their family, and the provider to ensure everyone is working toward the same goal (Spear et al., 2007). Additionally, there is documented cultural disparity in access to and availability of health care
for treatment for obesity. The absence of insurance coverage could substantially impact the willingness of families to seek healthcare related to obesity due to out of pocket expenses incurred. Even for those with insurance coverage, the availability and quality of healthcare for different populations can be variable. Inadequate or even non-existent reimbursement is also a noteworthy barrier to the treatment of obesity in children (Caprio, et al., 2008).

In their 2015 Equity and Diversity Report, the Midwest children’s hospital at which this study was conducted, speaks to a number of details surrounding diversity initiatives. The vision of the hospital speaks to their commitment by including the provision of culturally competent care in an inclusive environment as one of their goals. This is important to consider because the sites for this proposed project will be within this health system. This report also breaks down patient demographics, showing that 57.5% of the patient population is Caucasian, and 42.5% of patients identify themselves as African-American (20.3%), Hispanic (12.7%), Multi-Racial (4.3%), other (3%), Asian (1.7%), Native American (0.3%) or Pacific Islander (0.2%.

Problem and Purpose

Problem Statement

Today, nearly 20.5% of young people in America, ages 12-19, are overweight or obese, affecting roughly 12.7 million children and adolescents. Obesity has been shown to be a precursor not only to physiological ailments, but it is also a major contributor to psychosocial issues such as diminished self-esteem, negative self-image, and body dissatisfaction (Biro & Wien, 2010; CDC, 2016; Ogden, Carroll, Fryar & Flegal, 2015). Studies addressing self-esteem or self-concept in obese adolescent females consistently show a correlation between elevated Body Mass Index (BMI) and low self-esteem when compared to lower-BMI peers.
Purpose

As childhood obesity has more than quadrupled in adolescents in the past 30 years, universal agreement exists that obesity starting in the early years of life must be addressed in order to curtail effects that could negatively impact health in the future. The purpose of this DNP project was to evaluate if participation in a weight loss program for female adolescents who are classified as overweight or obese significantly improves their self-esteem through participation in a weight management program rather than focusing solely on weight loss.

Facilitators and Barriers

Facilitators for this project included study participants’ peers and family members, healthcare providers and staff, and the weight management program at a Midwest children’s hospital. This hospital provides multiple healthcare services and the PHIT clinic is the department that will be utilized for this project. The PHIT Clinic facilitators for this project were the Director of Health and Wellness and one of the staff nurses within the clinic. The economic component is a project facilitator. No costs were incurred by the participants of their families, and the education provided is of no expense to them. Only minimal cost was incurred by the PHIT clinic (see Appendix A).

The well-established nature of the PHIT clinic promoted sustainability of the intervention during this project. The DNP student met with Director of Health and Wellness and engaged in written correspondence with the PHIT clinic nurse prior to the start of the study. The PHIT clinic team was eager to have an additional project as well as additional student support. The main concern with sustainability was securing participants initially and securing participants who would complete the program.
Potential barriers related to this project included the lack of participants due to patients not meeting criteria or unwillingness to complete the weight management program. Lack of provider engagement and perhaps bias to aid in identifications and referral were identified as a potential barrier to secure participants. Time constraints were also thought to be an issue in the busy project setting as providers may fear that referral and conversation would be time consuming and keep them from other important tasks. An additional potential barrier for this project is that of transportation. The intake location for study participants was located in the northern part of the city, but the weight management program location is in an urban area of the city.

**Review of Evidence**

**PICOTS**

In adolescent females classified as overweight or obese, does participation in a weight loss program improve self-esteem from baseline measurement to post-intervention measurement following 12 weeks of treatment in a weight management clinic?

**Search Strategies**

The literature search began with basic terms of self-esteem, adolescent, female, obesity and overweight. Then, self-esteem, body image and self-concept were added as body image and self-concept were closely aligned. As studies were further analyzed, search terms broadened to include quality of life, depression, weight management, exercise, treatment guidelines, and nurse practitioner. The initial exploration of the topic using the search words both individually and in a variety of combinations yielding 22,500 results; however more specific search criteria with a tighter date range, 2006 to present, narrowed the search 350 studies. Ultimately, the final list of
27 studies was selected based on significance and applicability to the current study question, and one study from 1998 was retained because of relevance (see Appendix B).

Study designs and levels of evidence were variable among the 27 studies used. Levels of evidence classified from level one to level seven with fifteen of the studies categorized as level four. Two level one studies were explored, three level two studies were noted, levels three studies were represented with one study, four level five studies were utilized, and levels six and seven were each represented with one study (Melnyk & Fineout-Overholt, 2015). Three studies were experimental in nature, while 21 of the studies were non-experimental and only one was classified as quasi-experimental. Two of the studies examined were evidence-based guidelines. Twenty-three studies were quantitative, and these included a variety of types: longitudinal, prospective, correlational, cohort, systematic reviews, randomized controlled trials (RCT) and a cluster RCT, integrative review, and one quality improvement study. Only one study included was qualitative.

Evidence by Sub-Topics

The sub-topics addressed in this synthesis include self-esteem/self-concept, body image/body dissatisfaction, depressive symptoms; perception, quality of life; weight loss programs; evidence-based guidelines; prevention and treatment of childhood obesity (see Appendix C).

Self-esteem/self-concept, body image/body dissatisfaction, depressive symptoms.

Studies addressing self-esteem or self-concept in overweight or obese adolescent females consistently show a correlation between elevated Body Mass Index (BMI) and low self-esteem when compared to lower-BMI peers. Four studies addressed the concept of self-esteem and self-concept with a combined total of 15,000 subjects, and findings indicated that overweight and
obesity have a significant impact on how young women in adolescence feel about themselves (O’Dea, 2006; Perrin, et al., 2010; Phillips & Hill, 1998 & Wang et al., 2009). An additional study addressing psychosocial issues associated with body weight pointed to a relationship between low self-esteem and being overweight (Pesa et al., 2000).

Data from nearly 11,000 overweight and obese female adolescents were collectively evaluated, finding that weight status had a strong relationship to body dissatisfaction and that body image perception and satisfaction ultimately play a significant role in self-esteem and the overall well-being of adolescents (Goldfield et al., 2010; Neumark-Sztainer, Paxton, Hannan, Haines & Story, 2006; Perrin et al., 2010; Pesa et al., 2000; van den Berg, , Mond, Eisenberg, Ackard & Neumark-Sztainer, 2010; Xie et al., 2010). Specifically, van den Berg et al. (2010) examined data from 4,700 adolescents and found that the association between body dissatisfaction and self-esteem was substantial in overweight and obese girls. Work by both Boutelle et al. (2010) and Pesa et al. (2010) also acknowledged the contribution of weight status to body dissatisfaction, and ultimately low self-esteem, may all factor in collectively as mentioned prior with regard to self-esteem.

Boutelle et al. (2010), Goldfield et al. (2010) and Xie et al. (2010) collectively evaluated data from over 2000 overweight and obese adolescent females and found a relationship between obesity and an increase in depressive symptoms, with body image perception identified as an important factor. Boutelle et al. (2010) acknowledge that weight status alone may not be responsible for the relationship between obesity and depressive symptoms; rather, the contribution of weight status to body dissatisfaction, and ultimately low self-esteem, may all factor in collectively to self-esteem.
Perception. Perception was a powerful theme in five of the studies. Females misperceive themselves as overweight more often than their male counterparts and also have higher body image dissatisfaction than males, which can in turn contribute to lower self-esteem (Perrin et al., 2010; Xie et al., 2010). Almeida et al. (2012) noted the power of perception, finding that self-perceived body image had a stronger association with depressive symptoms than actual BMI. Research findings indicate that those with existing low self-esteem were twice as likely to misperceive themselves as overweight, opening the question of which phenomenon comes first (Perrin et al., 2010).

Quality of life. The emotional consequences of being overweight or obese as a female have far-reaching effects. One of these effects is the increased risk for an impaired health-related quality of life (HRQOL) which includes factors such as perception of general health, functional limitations, illness symptoms, depression, self-esteem, social functioning, and other psychological implications (Griffiths et al., 2010; Sullivan, 2010; Swallen et al., 2005; Zeller & Modi, 2005).

Four studies reviewed for the inquiry demonstrated inconsistent findings, indicating a need for additional research pertaining to HRQOL. In a large cross-sectional analysis (n=4743) by Swallen et al. (2005), no statistically significant relationship between BMI and the psychosocial components of HRQOL were found. Contrary to the Swallen study, results from a systematic review performed by Griffiths et al. (2010) encompassing a total number of subjects surpassing 15,000, supported the impact of obesity on all quality of life domains as did a smaller study of 166 obese youth conducted by Zeller and Modi (2005). These findings were further supported by Sullivan (2010) whose review of the psychological implications of obesity generated the overall statement that the QOL is worse in obese children.
**Weight loss programs.** Two RCTs with a combined total of 702 adolescent females were reviewed, each with the objective to evaluate school-based obesity prevention programs (Nutrition and Enjoyable Activity for Teen [NEAT] Girls and New Moves; Lubans, Morgan, Okely, Dewar & Collins, 2012 and Neumark-Sztainer et al., 2010). Additionally, a larger study addressing 14,000 students participating in the Pennsylvania Department of Health Active Schools Program (ASP) was reviewed, and the purpose of the study was identified as evaluation of the ASP’s effects on physical fitness and weight status (Erfle & Gamble, 2015). Outcome measures were similar for both the NEAT Girls and New Moves programs, and neither study yielded statistically significant results with regard to self-esteem measures or reduction in percentage body fat or BMI. Erfle and Gamble, however, did note a significant improvement on BMI percentile in their ASP intervention group. The 2010 Neumark-Sztainer study (New Moves) noted improvements in factors such as sedentary activity, eating patterns, unhealthy weight control behaviors and body/self-image, but the absence of significant change in percentage body fat and BMI could be explained by the presence of only 46% of subjects being overweight or obese.

**Evidence-based guidelines.** One clinical practice guideline, cosponsored by the European Society of Endocrinology and the Pediatric Endocrine Society, was included in this synthesis (Styne, et al., 2017). In addition to the guidelines, one White Paper from the American Nurse Practitioner Foundation (ANPF) was also included (ANPF, 2013). Both were developed by a panel or task force of nurse practitioners or experts in the prevention and treatment of obesity. The White Paper was specific to the prevention and treatment of adult obesity, but the information was found to be useful due to strategies presented and the possibility that some of
the strategies could be translated to the pediatric population. The use of an adult-specific White Paper could certainly be considered a limitation in evidence.

**Diagnosis.** The summary of recommendations in both guidelines is comprehensive. Both cite the importance of diagnosing overweight and obesity through both measurement and assessment. BMI is the gold-standard for diagnosis of overweight and obesity. The CDC defines overweight as a BMI \( \geq \) the 85th percentile but < 95th percentile for age and sex, and defines obese as a BMI \( \geq \) the 95th percentile and extremely obese as a BMI \( \geq \) 120% of the 95th percentile (2016). In addition to BMI measurement and encouragement of plotting these measurements on a graph for visual representation, both guidelines encourage assessment of comorbidities and current medication regimen.

**Treatment.** Recommendations from ANPF (2013) and Styne et al. (2017) emphasize the importance of treating the patient as a whole with individualized and patient/family centered care and interventions. Both highlight the importance of reduced appropriate caloric intake, portion control, additional counseling with allied health professionals when needed and reduction of inactivity/increase of physical activity for weight loss. Styne et al. (2017) further expand upon physical activity recommendations by using those set forth by the U.S. Department of Health and Human Services in 2008. The recommendations encourage a goal of 60 minutes of physical activity daily, whereas the emphasis on physical activity by the ANPF focuses on individualized, incremental and achievable goals leading up to the final goal of regular physical activity-30-60 minutes of moderate physical activity on most days a week.

**Prevention and treatment.** In evaluating studies regarding prevention and treatment recommendations for childhood and adolescent obesity, two studies spoke directly to the use of screening tools to start conversations with both patients and family members about pediatric
obesity. Sharpe, Bishop, Devries and Derouin (2016) reported the results of their quality improvement study which involved implementation of the Starting the Conversation (STC) 4-12 tool in a primary care setting. Gauthier (2014) provided insight into the use of a health information technology-based system (Heartsmart Kids [HSK]) used to provide a means for starting conversations about weight and weight-related behaviors between children, their parents and their provider. Both of these interventions spoke specifically to the nurse practitioner population of providers.

**Prevention.** Four studies were reviewed with regard to prevention. In a systematic review performed by Reilly (2006), a review of 6 RCTs by Seal and Broome (2011), and a cluster RCT by Taveras (2011), summarization of interventions recommended for the prevention and treatment of pediatric obesity were identified. Both studies stressed the importance of avoiding overweight and obesity in order to circumvent the associated complications, as does a review conducted by Calamaro and Waite (2009). The Calamaro and Waite (2009) and Seal and Broome (2011) studies emphasized the importance of preventing obesity, but also place strong emphasis on secondary prevention of the psychosocial effects of overweight and obesity, specifically that of depression. Styne et al. (2017) suggest that clinicians promote the ongoing healthy dietary and physical activity education of children and adolescents and their families, communities and schools (2017), and the ANPF also emphasizes the importance of community-level interventions to ensure an infrastructure that can help individuals and communities achieve health goals (2013). Healthy eating habits and physical activity are emphasized in both sets of recommendations, as are healthy sleep patterns and balance of unavoidable screen time with electronic devices. Another common theme was that of involvement of family members and other support systems.
Treatment. The importance of family-based interventions was a common theme between studies, and treatment success has been found to be most probable when the whole family is treated and not just the child. Consistent treatment recommendations included healthy eating such as increased consumption of fruits and vegetables and decreased consumption of high energy density foods, increased physical activity and reduced sedentary activities, and self-monitoring of lifestyle and weight (Reilly, 2006; Seal & Broome, 2011).

Theory

The theory to support the foundation of this study was Dorothea Orem’s Theory of Self-Care Deficit. This theory explains why people care for themselves, and self-care is reference to the actions in which people engage to promote life, health and well-being. Self-care is conceptualized as a deliberate action, and when thought of in reference to childhood overweight and obesity, one can make the connection of self-care to nutritional intake, portion control, physical activity and other components of weight management (Berbiglia & Banfield, 2010). Nursing agency empowers nurses to represent themselves as educated professionals, form a relationship with a person, and aid the individuals in developing their own self-care agency or their ability to meet their own health-related requirements. This theory has been used in countless studies and can be applied to many situations involving the need for individuals to engage in actions that will ultimately promote their health and well-being.

Methods

IRB Approval, Site Approval, Ethical Issues and Funding

The subjects were from a vulnerable population, necessitating IRB approval and careful consideration of study ethics. The primary IRB for the project was the site IRB. The primary on-site facilitators for this project had already engaged in dialogue with the student investigator and
were supportive not only of the study, but of the intent behind the study, hoping to utilize the data gathered for long-term benefit in the PHIT clinic.

Ethical considerations were reviewed with the PHIT clinic team, and agreement was reached that no ethical dilemmas were present. Self-esteem assessment provided minimal risk of harm to subjects, and participation was voluntary. The student investigator had no conflict of interest, only interest in enhancing the health and well-being of youth in our community. Full financial support was offered from PHIT clinic administration to assist with this project.

**Setting and Participants**

Participants meeting inclusion criteria consisted of female adolescents, ages 12-17 classified as overweight or obese according to body mass index (BMI) criteria set forth by the Centers for Disease Control and Prevention (CDC). Additional inclusion criteria was willingness to participate, parental willingness to participate, and ability to participate in a weight management program focused in the PHIT clinic. Exclusion criteria included males, females under the age of 12 and over the age of 17, and potential participants who do not have the willingness or ability to participate in all aspects of the weight management program. The sampling method was inclusive of all female adolescents meeting the BMI criteria. The goal was to identify a minimum of 30 participants to take part in this project.

**EBP Intervention**

The primary intervention for this project was the work of the PHIT Kids weight management program. Patients in the program receive individualized and inter-professional care from a dedicated team of clinical and academic experts that includes registered dietitians, physical therapists, pediatric psychologists, education coordinators, social workers, pediatricians, nurses, and nurse practitioners. The Weight Management program is part of an area Center for
Children’s Healthy Lifestyles & Nutrition. As a partnership among the Midwestern children’s hospital, a local university and other academic institutions, the Center represents an extension of the community’s collaboration in the area of pediatric obesity research. Evidence based interventions used in the program included educational modules related to nutrition, portion control, physical activity and behavior change.

Recruitment of subjects was offered for all adolescent females within the PHIT clinic weight management program meeting inclusion criteria and occurred on a voluntary basis. Following identification of potential participants, child and parent interest was assessed with informed parental consent obtained for participation. As part of the intake process, and prior to any intervention or education, measurement of the adolescent’s baseline self-esteem was evaluated. Only a designated number of PHIT clinic team members administered the pre-and post-intervention self-esteem assessment, and each of those parties received training specific to the tool and how to administer and consistently score. The data were kept confidential and secure for comparison to the post-intervention score. The PHIT clinic provided educational topics including nutrition, portion control, physical activity and behavior change, all of which are covered throughout the complete program consisting of 18 weekly sessions with monthly follow up for a total of two years (see Appendix D). The student investigator collected data after 12 weeks of participation to evaluate the presence of any short-term effects, and participants were not asked to complete a post-weight management program self-esteem assessment if they did not complete the full 12 weeks.

Change Process and EBP Model

According to the social cognitive theory (SCT), behavioral change is determined by interactions between environmental, personal, and behavioral elements and an individual's
behavior may change their environment as well as the way they think or feel (Bandura, 1986).

SCT applies to this project as it addresses the interaction between personal factors such as self-esteem and self-concept along with behavioral concepts involved in a weight management program such as eating habits and physical activity as well as environmental factors that might come into play such as peer support/acceptance (see Appendix E). With regard to change theory and evidence-based practice model, the Model for Evidence-Based Practice Change is a six-step process used to guide the change during the project (Melnyk & Fineout-Overholt, 2011).

**Study Design**

The study design of this project was a non-experimental, comparison, cohort study. Adolescent females enrolled in the PHIT clinic program that met the criteria of either overweight or obese according to BMI parameters were identified, and a self-esteem assessment was obtained both pre-and post-participation following the completion of 12 weeks of an 18-week weight management program to ascertain if there was a statistically significant difference in self-esteem after completion of the program. Establishing a foundation of evidence that supports an improvement in self-esteem related to completion of a weight management program could motivate further research into the topic to determine the effects of weight loss on psychosocial wellness.

**Validity**

Internal validity of this study was well controlled through partnership with a stable already-existing weight management program with highly trained staff conducting the interventions. The self-esteem assessment tool was also a strength as it is a commonly used, reliable and valid measure. It was only administered by professionals who received training.
specific to the tool. Concerns with this type of program included support at home and buy-in from the family to ensure appropriate encouragement, compliance and success.

External validity was promoted through a representative sample of adolescent females. Those who seek care from facilities affiliated with the Midwestern children’s hospital are generally diverse and representative of the community, therefore generalizability was expected. Despite efforts to secure the most robust sample size possible, the smaller sample size caused concern for decreased generalizability. Additional efforts toward optimizing validity involved the consistency demonstrated in a well-established program. While education and interventions were unique and individualized to each participant’s needs, evidence-based practice interventions were used in the study.

**Outcomes to be Measured**

The project outcomes measured included recruitment, participation and completion of the weight management program, and self-esteem. The data compared were collected from a pre-and post-self-esteem survey using the Rosenberg Self-Esteem Scale.

**Measurement Instruments**

The Rosenberg Self-Esteem Scale (RSES) has been identified as a tool for assessing global self-esteem. Psychologists and sociologists commonly use this instrument as a vital part of self-esteem measurement in social science research and it is used with adolescents, the population of focus in the study.

Validity and reliability of the RSES are well documented. Test-retest reliability demonstrates correlations of .85 and .88, and the Guttman scale coefficient demonstrates reproducibility at .92, showing strong internal consistency. The RSES correlates strongly with other measures of self-esteem, and it has an inverse relationship with measures of depression and
anxiety (Rosenberg, 1989). Participant completion of this 10-item scale is relatively simple, grading the series of questions on a 4-point Likert scale ranging from answers of strongly disagree to strongly agree (see Appendix F). Scoring is more cumbersome than participant use, but detailed directions are available to preserve accuracy.

Permission is not required for use of the RSES, nor are there any applicable fees. Florence Rosenberg, the wife of the RSES’s late creator, has given permission for use of the RSES, provided use is for educational and professional research. The only request of Mrs. Rosenberg is that credit is given to Dr. Rosenberg for use of the scale through citation in publications, papers, and reports. The foundation that supports use of the RSES requests copies of any published works resulting from use of the RSES (Psytoolkit, 2017).

**Quality of Data**

The desired number of participants for this study was set at 50 adolescent females who meet the BMI requirements for intervention. Using a power calculator with the assumption that the mean for the sample was a score of 20 (range of the scale is 0-40 with a score of 15-25 considered average), and the expected score of the study sample was 15, the power was calculated as 1.0.

Baseline data from the RSES and post-intervention data were gathered following 12 weeks of participation in the weight management program. The primary concern with post-intervention data collection was the possibility that participants might complete the scale and score the questions in a manner they believed the team wanted to see, such as improved self-esteem. There was no plan to compare study data to benchmarked data, as the goal was to see effects of the weight management program post-completion when compared to pre-implementation.
Analysis Plan

Descriptive statistics were used for the demographic data to describe the participant sample. It was also important to capture demographic descriptions of which participants are overweight versus obese, and information such as age, race and socioeconomic status were gathered. A paired t-test was used to determine if there were statistically significant differences between the pre-and post-intervention assessments. SPSS was used in data analysis for this project.

Results

Setting & Participants

Participants were surveyed on three different occasions from August, 2017 until February, 2018. This time period included three intervention groups through the PHIT Clinic. The group numbers totaled 38 children of which 19 met the inclusion criteria. Study participants represented multiple races and diverse economic backgrounds, allowing a comprehensive look at the effects of the program on a wide-range of children. The children were able to make friends and feel at ease with others their own age through team building activities which were both educational and fun.

The setting was not only key in this program, but also intentional. The facility is a stand-alone building and the children meet there after 5 o’clock when most of the employees have gone home, optimizing privacy. One of the comments that overweight and obese patients often tell providers about an unsatisfactory visit to the doctor is that they always have to weigh me in front of other people. This clinic setting is intended to put children at ease and instill a sense of safety from discrimination secondary to weight. The staff is educated to avoid talking about weight during the classes and participants are only weighed in a private room with no one else except
parents present. The facility, staff, and practices at the PHIT clinic are an integral part of the success of the program and the children.

Participant data were collected in a pre and post intervention format with the RSES. As anticipated, the post-intervention survey response rate was lower than the pre-intervention response. Even though this was anticipated, the post-intervention response was substantially lower than expected. A total number of 6 post-intervention surveys, of the 19 original pre-intervention surveys at the onset of the program, were returned. This is considered a weakness in this study and provides less data than desired.

**Intervention Course**

The intervention aspects of the PHIT clinic included education in areas such as exercise routines, food label education, portion control, discussion about the prevalence of childhood obesity, and a support system within the group when needed. During group time, the education topics were discussed with the hope of helping participants develop a better understanding of how we move and what we consume affects the way we feel and the way we look. The children worked on the interventions without complete awareness due to the fact that facilitators made learning fun and productive; never punitive or shaming.

Peak participation was noted at the onset of the program. The weight management program runs over a duration of 12-weeks which presents a challenge for participants to attend all of the classes. The PHIT team understands this and is lenient with attendance, but the value of giving these children comprehensive information for optimal success is of utmost importance. Participant numbers were affected by the weather such as driving conditions in inclement weather or the distraction of a beautiful spring day. Activities like parent teacher conferences, family commitments, sporting events in which the children participated, or professional sporting
events were all factors on attendance, and the PHIT clinic staff anticipated these barriers. The significance of post-intervention attrition was not anticipated.

Outcome Data by Sub-Topic

Scoring from the RSES was utilized for statistical analysis, with higher scores indicating higher self-esteem. Paired sample statistics revealed a mean raw score of 30 pre-intervention and 32 post-intervention, demonstrating what appears to be a slight increase in self-esteem. However, the post-intervention n was only 6, affecting the power of the sample. Significance was set at .010, and the 2-tailed paired samples t-test was not significant ($p=.087$).

Discussion

Successes

Data demonstrated that simply attending the program led to a slight increase in self-reported self-esteem over time, although the results were not statistically significant. Also, one of the points of success in this research study was learning and believing in the processes needed to produce useful data. Presenting an idea to professionals who not only see benefit in the idea of studying self-esteem, but also back the project as if it was part of their core program curriculum is an important success that cannot be overlooked. Having a data set at the conclusion has been rewarding. Looking at interventions that improve self-esteem in these teenagers will benefit them as they transition to adulthood. Arming children with the tools to be successful and health-conscious potentially improves their outlook on difficult issues and can improve their response and promote the power to evoke positive change on their own.

Study Strengths

The urban pediatric hospital serving as the site for this study is part of the fabric that makes up the metropolitan community. The main campus is centrally located and a number of
satellite facilities exist throughout the city. Most of the care is delivered in the downtown area, and in this researcher’s opinion, that is no accident. The area housing the hospital contains two major hospitals and an allied health school located within very close proximity. The campus is located in a lower socio-economic area and all of the entities within have chosen to stay at their locations to better serve all the citizens in the area, including numerous underserved populations. The geographic position of the PHIT clinic within the main campus is a strength that demonstrates the hospital’s commitment to serving all children in the metropolitan area.

The PHIT clinic has an impressive record of success because of the organizational commitment to treating the childhood obesity epidemic. The study site hospital sees the importance of the topic and chooses to invest in the promotion of positive lifestyle changes in children. Staff members within the PHIT clinic are dedicated to each individual child and family that comes to them for help and a group of providers have made the PHIT clinic mission their professional calling.

Positivity is a cornerstone of strength in this study thanks to the team of professionals that have been assembled to perform the work. The children in the program are encouraged to voice their opinion or share concerns and even be negative, but they are quickly redirected by the staff to turn negative thoughts into positive thoughts by talking with their peers to come up with solutions. This was a common theme in most of the group activities witnessed by the investigator and it was evident that this type of ambiance was not accidental. The patience and positivity of the staff were one of the greatest strengths to the intervention component.

**Results Compared to Evidence in the Literature**

Previously published studies focusing on the relationship between weight status, body dissatisfaction, and low self-esteem yielded results more significant than those achieved in this
The most defining study shared data from nearly 11,000 overweight and obese female adolescents. The study found that weight status had a strong relationship to body dissatisfaction and that body image perception and satisfaction ultimately play a significant role in self-esteem and the overall well-being of adolescents (Goldfield et al., 2010; Neumark-Sztainer, Paxton, Hannan, Haines & Story, 2006; Perrin et al., 2010; Pesa et al., 2000; van den Berg, Mond, Eisenberg, Ackard & Neumark-Sztainer, 2010; Xie et al., 2010).

Limitations

Internal Validity Effects

One of the possible sources of internal validity effects could have been inflated self-esteem scoring by participants who answered survey questions in a manner that reflected a higher-than-actual self-esteem. Additional confounding factors could have been the pure effect of weight loss if applicable, or it could have also been a result of the teamwork and bonds built between participants who share commonalities. Bias was largely protected through extensive training of staff within the PHIT clinic, although participants could not be fully sheltered from any conscious or unconscious bias in other areas of the hospital. One of the largest concerns regarding collection of data involved unreliable collection. Because this investigator was not present for data collection, PHIT clinic staff members were trained to administer the Rosenberg self-esteem scale both pre and post-intervention. One of the weaknesses identified was the post-intervention response rate, and it is a concern that PHIT clinic personnel were simply not as engaged in the need for robust follow-up data.

External Validity Effects

The PHIT program has a defined regimen and routine, so this would enhance generalizability. Participation in the PHIT clinic program is dependent upon referral, so it is the
motivated children and families that will follow up with the referral, leading to possible effects of generalizability. And while the composition of participants is diverse, generalizability could have certainly been affected by access to transportation and educational preparation of parents. Additionally, the small post-intervention response rate could affect generalizability in that it did not allow for a strong sample size for comparison data.

**Sustainability of Effects and Plans to Maintain Effects**

Sustainability has been a concern as there is minimal control or follow-up with participants once they graduate from the PHIT clinic program. It is the hope that at the conclusion of the entire program, participants and their families will be armed with skills and motivation to continue living a healthy lifestyle and focusing on weight management, but there is no oversight.

**Efforts to Minimize the Study Limitations**

Despite efforts to engage staff members in charge of data collection aware of the importance of post-intervention survey completion both at the onset of the study and between start dates for each enrollment class, application of results is admittedly difficult due to the lower-than-expected response rate post-intervention. While the scores demonstrated a slight increase between pre and post-intervention (30 and 32, respectively), the results ultimately did not support what had previously been found in the literature. The mean pre-intervention score of 30 was actually higher than the RSES average scoring range of 15-25, indicating the study subjects began the program with a baseline self-esteem considered above average. Admittedly, it is difficult to apply results with such a low n post-intervention.
Interpretation

Expected & Actual Outcomes

Expected results included data that supports the relationship between overweight and obesity and low self-esteem and poor body satisfaction. This is a phenomenon supported in literature, and one that this investigator hoped to replicate. Actual results included the low response rate post-intervention and a higher-than expected pre-survey self-esteem mean. Perhaps it was naivety or inexperience, but there was simply an assumption that there would be a stronger degree of motivation to participate in this study from start to finish.

Another unexpected turn in this study was that of provider bias against overweight and obese children and the role that can play in both children’s and parents’ willingness to seek healthcare and resources to battle overweight and obesity. This topic, which manifested as a concern later in the study, is one that could have potentially affected the participants’ willingness to answer the survey questions honestly, and one that CMH plans to address in future research.

The investigator in this study was not an employee within the PHIT clinic, nor continually present in the care environment. It is speculated that these two factors led to an absence of passion on the part of designees to routinely administer the self-esteem scale at identified times.

Intervention Effectiveness

Observed and expected outcomes were not as congruent as hoped. The strength of study data was a limitation due to the small response rate of post-intervention participants. Causal mechanisms for change in self-esteem could have been weight loss rather than the other interventions that took place within the program. The effectiveness of the interventions could
have been optimized through a consistent setting, consistent staff and a conscious reduction of provider bias in the PHIT clinic environment.

Intervention is most likely to be effective in a setting that focuses on education presented over a period of time. There must be opportunity for education and fellowship over a span of time in order to decipher if there is a difference in state-of-mind upon intake into a weight management program and again upon exit.

**Intervention Revision**

Improvement in attainment of outcomes is not dependent upon modification of interventions. What could be beneficial is a change in the approach to participants and their parents with regard to completing both pre and post-intervention surveys. For example, it could be largely beneficial to send follow-up surveys via email at designated intervals in order to encourage a response. One could also consider incentivizing response through some sort of reward program.

**Expected and Actual Impact to Health System, Costs and Policy**

Literature strongly supports the high cost of healthcare for overweight and obese individuals; particularly those who experience this epidemic in childhood and have the sequelae follow them into adulthood. The expected and actual impact of the PHIT clinic interventions on weight loss is one positive aspect of the program, but the expected and actual impact of the program on self-esteem and body satisfaction is under investigation. Improved psychosocial health of youth is a benefit to any health system and can reduce costs both directly and indirectly through improved overall well-being and motivation for sustained health maintenance of a healthy weight.
The estimated costs of this intervention were minimal as the PHIT clinic simply absorbed the cost and integrated study aspects in their daily routine with participants. Economic sustainability would likely have minimal costs associated as well, given that follow-up over the long-term is not included in the program. The CMH PHIT clinic served as the sole funding source for this study.

Conclusions

Practical Usefulness

Not only are the effects of overweight and obesity in adolescence potentially devastating on the physical being of children, they can be equally damaging to the psychosocial being of these children. Literature supports that overweight and obese female adolescents suffer from lower self-esteem than their normal-weight peers. What is not clear is if the act of weight loss aids in reparation of self-esteem levels or rather, a more comprehensive approach by way of a weight management program. Through baseline evaluation of self-esteem and then subsequent completion of the weight management program within the PHIT clinic followed by post-intervention self-esteem assessment, a better understanding of the effects of program completion on self-esteem can be gleaned. This will be useful to healthcare providers as steps are taken and interventions identified to aid children in their battle with being overweight or obese.

Further Study or Implementation of Intervention

Because the PHIT clinic is already an established program within the study site hospital, no further implementation is needed, however introspection of the entire process in needed to ensure desired outcomes. This study could well be extended and expanded through the clinic in order to gather a more robust data pool. An interesting concept to evaluate on a long-term basis is that of possible commonalities between children who do not complete the program at baseline.
and post-dropout scoring for participants who might enroll in the program and not complete it. Longitudinal information about weight maintenance and self-esteem would be beneficial to gather as well.

During the primary investigation phase of this project, provider bias toward overweight and obese children was identified as an area of concern. Provider bias could potentially and dramatically affect the self-esteem of overweight and obese children and the environmental makeup of the clinic where these patients are treated could also have a profound effect on willingness to seek care. In a study of 400 physicians, one of every three respondents listed obesity as a condition to which they respond negatively. They ranked it behind only drug addiction, alcoholism, and mental illness. Those surveyed also associated obesity with noncompliance, hostility, weak will, dishonesty, and poor hygiene, further fueling this student investigator’s concern that bias could have a negative impact on self-esteem during healthcare interactions that should provide comfort and lack of judgement (Friedman and Puhl, 2012). The urban pediatric hospital serving as the location for this study is currently conducting provider surveys to evaluate the environment for provider bias within the organization. The student investigator is working with the hospital in evaluating provider bias and the affect it might have on not only the results of this project, but how bias might affect the system in general.

The social cognitive theory (SCT) relies on the environment, along with person and behavior, as one of the pillars of treatment. The environment of care, in the context of the SCT, is particularly important as it is the characteristics of the environment that influence one’s ability to successfully complete a behavior. In the case of this project, the healthcare environment must be conducive to learning and promotion of change by providing appropriate support. The environmental makeup of the clinic where care is given will need to be evaluated using a method
called Failure Mode and Effect Analysis (FMEA) to ensure that the proper equipment and facilities are appropriate for the care of this population. Every element from the doorway used to enter the clinic to the lab devices used to draw blood will need to be assessed for appropriateness in use with obese clients. Both provider bias and the environment of care were not part of the original plans for this project, but in order to ensure the SCT is maximally utilized to guarantee optimal care, both aspects must be investigated and results disseminated to primary care sites.

**Dissemination**

The dissemination of the data will be shared with PHIT clinic team members, medical directors and other administrative team members at Children’s Mercy Hospital as well as with this student investigator’s faculty advisor. There are also plans to submit study findings for publication and possibly present at a conference by way of poster and/or podium presentation. The goal will be to focus the audience on the basic needs that vulnerable patients face when accessing healthcare. Providing the tools, a welcoming environment and compassionate providers aware of the patients’ needs are all necessary to ensure a healthy outlook on life.
WEIGHT MANAGEMENT AND SELF-ESTEEM

References


WEIGHT MANAGEMENT AND SELF-ESTEEM


Appendix A

Cost Table

<table>
<thead>
<tr>
<th>Item(s)</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project training luncheon for staff members</td>
<td>$200.00</td>
</tr>
<tr>
<td>Written materials for staff members</td>
<td>$100.00</td>
</tr>
<tr>
<td>Clinician training costs (estimations for 30min presentation to 10 staff members)</td>
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<tr>
<td>Written materials for participants (Study information, Copies of survey, information about available apps)</td>
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<tr>
<td>AV technology such as projectors, PCs and other items</td>
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<tr>
<td>Personnel costs</td>
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<tr>
<td>Assessment items for height and weight</td>
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### Appendix B Evidence Table

<table>
<thead>
<tr>
<th>Study</th>
<th>Purpose</th>
<th>Methodology</th>
<th>Sample</th>
<th>Measures</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perin (2010)</td>
<td>Examine the relationship between self-esteem and weight perception in adolescents.</td>
<td>Quantitative, non-experimental; Correlational study, level 4.</td>
<td>Sample consisted of 15,001 adolescents from The National Longitudinal Study of Adolescent Health.</td>
<td>Rosenberg Self-Esteem Inventory used; measures degree of agreement with 6 item questionnaires. No mention of reliability assessed.</td>
<td>The cross-sectional design did not allow for determination of causal relationships; however, the sample was nationally representative. This research is important because of the increasing rates of psychosocial consequences due to low self-esteem in our multicultural society.</td>
</tr>
<tr>
<td>Wang (2009)</td>
<td>To examine the longitudinal relationship between body weight and self-esteem.</td>
<td>Quantitative, non-experimental; Longitudinal Study, level 4.</td>
<td>The data were gathered from a Canadian prospective cohort survey (National Longitudinal Survey of Children and Youth). The survey described the well-being and health of youth. The subgroup comprised 2,001 children who were aged 10 or 11.</td>
<td>Rosenberg Self-Esteem Inventory used; measures degree of agreement with 6 item questionnaires. No mention of reliability assessed.</td>
<td>Self-esteem was measured with a four-item scale that evaluated youth’s self-esteem (Cronbach Alpha = 0.73). At six points in time, children answered questions about their feelings of well-being and health of self-esteem. This study expands previous research showing that obese children have a higher risk of low self-esteem. Multivariate regression analyses were used to examine the relationships between body weight and self-esteem. This study is important because of the increasing rates of psychosocial consequences due to low self-esteem in our multicultural society.</td>
</tr>
<tr>
<td>O’Dea (2006)</td>
<td>Examines the differences in self-concept domains among female adolescents, including self-concept. Secondary purpose was to examine the self-concept domain and body weight.</td>
<td>Quantitative, non-experimental; Longitudinal Study, level 4.</td>
<td>Participants: A cohort of 82 female students in Sydney, Australia. All students were in their 7th year at a private girls' school located in urban Sydney. Students were assessed annually for three years.</td>
<td>Self-concept was assessed using the Self-Perception Profile for Adolescents, but no reliability information was available. Self-concept was scored on a 4-point scale.</td>
<td>All self-concept domains scored lower in the group with the highest BMI when compared to the group with lower BMI. Girls in the highest BMI category scored significantly lower on all domain scales. Limitations: Small sample size gathered from only one private girls' school which limits generalizability of the findings. Findings suggest the importance of body weight on female adolescents may be more significant than initially expected. This impact could be linked to the overall self-perception.</td>
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<td><strong>Purpose:</strong> To analyze the effect of body weight on self-esteem and peer approval in pre-adolescent females. <strong>Quantitative, Non-experimental, Cross-sectional study, Level 4.</strong> Variables included: Body weight, height, desired body shape, self-esteem, dietary control and peer choices of popularity and attractiveness. <strong>Sample consisted of a total of 333 girls, all 9 years of age, from 9 junior schools in areas in the North of England.</strong> A pictorial scale was used for subjects to select body shape preferences. The girls selected which drawing they felt was closest to their own body. Self-esteem was evaluated using the Self-Perception Profile for Children, a 36-item questionnaire with documentation of good reliability. Dietary restraint was measured using the Dutch Eating Behavior Questionnaire, consisting of 33 items. A peer nomination questionnaire was developed to measure peer choices, so no reliability data was available. Both obese and overweight girls had lower self-esteem than normal weight girls in relation to physical appearance and athletic competence. Body weight was shown to have no impact on how the girls determined the impact of self-esteem domains. Participants with higher body weight were less likely to be called “pretty” by their peers, but did not differ in their popularity. MANOVA was used to evaluate the effects of weight on measures of self-esteem, and one-way ANOVA, Kruskal-Wallis and Mann-Whitney U tests were used as well. Multiple regression analysis used to evaluate predictors of popularity and attractiveness. Higher body weight is associated with lower self-esteem, and this was related to both physical appearance and athletic competence. Overweight and obese girls were also rated by peers as less attractive. This information is useful to providers so that steps can be taken to preserve self-esteem and self-worth. <strong>Limitations:</strong> Generalizability of findings would be difficult due to the limited area of the study. Also, the n was relatively large, but only 16 of the participants were classified as “obese.”</td>
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<td><strong>Purpose:</strong> To evaluate the difference between perceived and ideal body image and depressive symptoms in a sample of urban 13-year-old adolescent. Additional purpose was to evaluate the possible altering effect of BMI in this relationship. <strong>Quantitative, non-experimental, Cohort Study, Level 4.</strong> Variables: Body image, Dissatisfaction and Depressive symptoms, gender and BMI. <strong>The study was conducted in Porto, Portugal and carried out under the EPITeen cohort. Sample-1688 adolescents, represented at every public and private school in Porto.</strong> The Beck Disorder Inventory was used to evaluate depressive symptoms. This tool consists of 21 items, scored from 0-3; Reliability coefficient of 0.86. The Figure Rating Scale was used to evaluate perceived body image, and this inventory consists of nine body figure drawings, each with a scoring scale of 1-9. Authors state it has good test-retest reliability. Body image dissatisfaction was found to be more significant than actual weight in predicting depressive symptoms. The relationship between depressive symptoms and body satisfaction was similar in both overweight and non-overweight participants. When comparing two independent samples, the Mann-Whitney and the Kruskal-Wallis tests were used. Chi-square test was used to compare proportions and linear regression coefficients quantified the relationship between BMI scores and the differences in figure ratings. Unable to determine whether or not body dissatisfaction actually precipitates depressive symptoms or if the opposite is true. Understanding this relationship more fully could provide interesting and useful information considering the increasing pressure about appearance and body image and the increasing prevalence of depression.</td>
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<tr>
<td>Authors</td>
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<tr>
<td>Xie, (2010)</td>
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<td>Van den Berg, (2010)</td>
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<td>Study</td>
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<tr>
<td>Goldfield, (2010).</td>
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<tr>
<td>Neumark-Sztainer, (2010).</td>
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<td>Pesa, (2000).</td>
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**ADOLESCENT OBESITY**

<table>
<thead>
<tr>
<th>Reference</th>
<th>Title</th>
<th>Purpose</th>
<th>Design</th>
<th>Sample</th>
<th>Measures</th>
<th>Findings</th>
<th>Usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erfle, (2015).</td>
<td>Effects of daily physical education on physical fitness and weight status in middle school adolescents. Journal of School Health.</td>
<td>Report outcomes of the ASP evaluation. Secondary purpose is to add to the knowledge base related to what is known about daily physical activity and weight status.</td>
<td>Quantitative, Quasi-Experimental, Level 3. Variables included physical fitness and weight status.</td>
<td>Study participants were Pennsylvania middle school students (6-8th grade). 9722 students and 4883 students were in the intervention and control groups respectively. Intervention Schools were competitively selected for their obesity rates which were higher than the statewide average.</td>
<td>Physical fitness was evaluated using the 1-mile run time, curl-ups, and push-ups. No reports of reliability available.</td>
<td>Thirty minutes of daily physical activity could be an effective strategy to improve health. 1-sample t-test was performed on each measure to look at changes within groups. Multiple linear regression analysis assessed the effects of daily physical activity on BMI. Independent samples t-tests used to determine differences between groups on each measure.</td>
<td>Study supports an in-school initiative to reduce impact of behavioral risk factors and childhood obesity. Limitations: Compliance was not monitored, so program adherence was unknown; Time spent involving moderate-to-vigorous physical activity was not evaluated and physical activities outside of school were not assessed.</td>
</tr>
<tr>
<td>Lubans, (2012).</td>
<td>Preventing obesity among adolescent girls: One year outcomes of the nutrition and enjoyable activity for teen girls (NEAT Girls) cluster randomized controlled trial. Archives of Pediatrics and Adolescent Medicine.</td>
<td>Assessment of the effectiveness of a 12-month school-based obesity prevention program for adolescent girls.</td>
<td>RCT, Experimental, Level 2.</td>
<td>Sample was comprised of 357 adolescent girls, ages 12-14 years. Study was conducted in 12 secondary schools in New South Wales, Australia; all in low-income communities.</td>
<td>Measures included BMI, BMI z-score, body fat percentage, physical activity, time spent watching television or playing video games, nutritional intake and self-esteem. Australian Eating Survey, The Adolescent Sedentary Activity Questionnaire and Marsh’s Physical Self-Description Questionnaire also used.</td>
<td>After 12 months, changes in BMI, BMI z-score and percentage body fat indicated favor toward the program, but no statistical significance was identified. Decrease in screen time was statistically significant. Differences between the groups were evaluated using chi squares and independent samples t-tests.</td>
<td>Significant reduction in BMI noted, but changes in body composition possibly associated with improved health outcomes. Limitations: Setting was low-income only, minimal utilizable pedometer data was available, dietary intake tool lacked sensitivity and screen time self-reported.</td>
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<tr>
<td>Neumark-Sztainer, (2006).</td>
<td>Does body satisfaction matter? Five-year longitudinal associations between body satisfaction and health behaviors in adolescent females and males. Journal of Adolescent Health.</td>
<td>Examined the longitudinal relationships between body satisfaction and weight-related behaviors</td>
<td>Quantitative, Non-experimental, longitudinal cohort study, Level 4. Variables include: Body satisfaction, weight management behaviors, binge eating, smoking, physical activity, fruit and vegetable intake, BMI and sociodemographics.</td>
<td>1130 males and 1386 females from 31 schools in Minnesota were included in the study, all of whom completed surveys for both a prior study and the current study.</td>
<td>Measures included BMI, BMI z-score, body fat percentage, physical activity, time spent watching television or playing video games, nutritional intake and self-esteem.</td>
<td>In females, lower body satisfaction predicted aggressive dieting, unhealthy weight control and binge eating. They engaged in less physical activity and consumption of fruits and vegetables. In males, lower body satisfaction was predictive of more aggressive dieting, and binge eating. This population also experienced lower levels of physical activity. Descriptive summaries used, as were general linear models.</td>
<td>General findings indicate lower body satisfaction does not necessarily motivate engagement in healthy weight management behaviors. Lower body satisfaction predicts risky behaviors for weight gain and poorer health. Limitations include: Attrition from the original study, self-reporting on surveys and inability to establish causality.</td>
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<tr>
<td>Author (Year)</td>
<td>Title</td>
<td>Study Type</td>
<td>Level</td>
<td>Inclusion/Exclusion Criteria</td>
<td>Scoring System</td>
<td>Importance of Praise</td>
<td>Treatment Considerations</td>
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<td>Sullivan (2010)</td>
<td>Last one picked: Psychological implications of childhood obesity</td>
<td>Qualitative, non-experimental, Review</td>
<td>Level 5</td>
<td>No search strategies listed, nor were inclusion/exclusion criteria listed for this review</td>
<td>No validated scoring system used</td>
<td>The importance of praise from healthcare providers was emphasized. Family psychotherapy is also encouraged in order to understand the myriad of other problems that often accompany obesity.</td>
<td>Treatment must take into consideration underlying illnesses such as behavior and emotional problems. Usefulness: Full understanding of the detrimental impact of obesity on the psychological well-being of children.</td>
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<tr>
<td>Griffiths (2010)</td>
<td>Self-esteem and quality of life in obese children and adolescents: A systematic review</td>
<td>Systematic Review - Quantitative</td>
<td>Level 5</td>
<td>All cross-sectional, prospective and intervention studies exploring the relationship between obesity and self-esteem or quality of life in youths were explored.</td>
<td>NA</td>
<td>Pediatric obesity has a significant impact on self-esteem and quality of life. The components primarily affected by childhood obesity were physical competence, appearance and social functioning. Improvements occurred both with and without weight loss, the need for further investigation.</td>
<td>One of the limitations identified was the strict inclusion criteria which could have led to some studies being unduly excluded. The usefulness lies in this reviews look at the competences specifically affected, especially the perception of physical appearance, athletic competence and social functioning.</td>
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<tr>
<td>Swallen (2005)</td>
<td>Overweight, obesity and health-related quality of life among adolescents</td>
<td>Quantitative, Non-experimental, cross-sectional study</td>
<td>Level 4</td>
<td>Variables were BMI, and 4 dimensions of health-related quality of life: general health, physical health, emotional health and school and social functioning.</td>
<td>General health and physical health were assessed through simple questions requiring self-reporting on a Likert type scale. Emotional health was assessed using portions of the Center for Epidemiological Studies Depression Scale and Rosenberg’s self-esteem scale. School and social functioning assessed from a shortened version of the Add Health survey, and this had a Cronbach’s alpha of .73.</td>
<td>The relationship between BMI and general health was statistically significant, but the relationship between BMI and psychosocial outcomes was not. Both overweight and obese adolescents had significantly poorer health according to their self-reports. Functional limitations were more prevalent in the overweight and obese population. Analyses completed using descriptive statistics.</td>
<td>This information is useful because it was conducted with a nationally representative sample. The sample was also diverse which allowed researchers to examine varied effects of BMI by a number of factors. Limitations included self-reporting, and the school-based sample excluded those not in school</td>
</tr>
<tr>
<td>Zeller, (2006). Predictors of health-related quality of life in obese youth. Obesity.</td>
<td>Identify health-related quality of life (HRQOL) scores, depressive symptoms and perceived social support in a sample of obese children and adolescents. An additional purpose was to evaluate the degree of agreement between study participants and their parents regarding HRQOL. Lastly, another purpose was to find predictors of improved HRQOL youth classified as obese.</td>
<td>Quantitative, non-experimental, correlational study, Level 4; Variables include pediatric quality of life, depression, and perceived social support.</td>
<td>166 obese youth (and parents) referred to a pediatric weight management program.</td>
<td>Demographic Background Questionnaire used; PedsQL (internal consistency reliability coefficients at or &gt; .70); CDI (depression inventory) used and has extensive data to support validity and reliability; Perceived SSSC also used to assess perceived support with good internal consistency (0.72-0.88).</td>
<td>Z-tests used to compare scores between healthy youth and obese youth. Intra-class correlations and paired Student’s t-tests used to compare parent and child reports of HRQOL. Paired Student’s t-tests used to identify differences in perceived social support. Results: Poor HRQOL was prevalent in all domains. Obese youth showed significant deficiencies in HRQOL compared with normal-weight youth.</td>
<td>Limitations: Only families seeking treatment involved in study. The tight range of weight status (BMI &gt;/=95th percentile) evaluated only obese children and their psychosocial functioning and perceived social support rather than the overweight population as well. Usefulness includes clear impact of obesity on HRQOL regardless of respondent (youth, parent, racial group).</td>
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<tr>
<td>Boutelle, (2010). Obesity as a prospective predictor of depression in adolescent females. Health Psychology</td>
<td>Evaluation of the possibility that overweight and obesity increases the risk for future depression in females during adolescent years.</td>
<td>Quantitative, non-experimental; Longitudinal Study, Level 4. Variables were depression and weight status.</td>
<td>Sample consisted of 496 adolescent girls in the Austin, TX area from both 4 public and 4 private middle school. Ages ranged from 11-15 and height and weight were measured annually for 4 years.</td>
<td>The Schedule for Affective Disorders and Schizophrenia for School-Age Children was used in this study. Response options for this scale ranged from 1 to 4. Internal consistency Cronbach alpha of .68-.85.</td>
<td>No significant associations with overweight and obese adolescents and major depression; Relationship found between obese status and depressive symptoms. Repeated measures logistic regressions used.</td>
<td>Limitations included only one report of depression and the subjective, self-reporting that occurred in interviews. Findings are useful as we consider that weight status might not be a lone stressor, but very well could contribute to self-esteem or body satisfaction issues that could in turn contribute to risk for depression.</td>
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</tr>
<tr>
<td>Styne, (2017). Pediatric obesity- Assessment, treatment and prevention: An endocrine society clinical practice guideline. Journal of Clinical Endocrinology and Metabolism.</td>
<td>To formulate clinical practice guidelines for the assessment, treatment and prevention of pediatric obesity.</td>
<td>EBP Guideline based on SR, Level 1.</td>
<td>The Endocrine Society-appointed Task Force consisted of 6 experts, a methodologist and a medical writer.</td>
<td>Grading of Recommendations, Assessment, Development and Evaluation approach used to explain the strength of recommendations and evaluate the quality of evidence. The task force used the best available evidence from published reviews and studies in their development.</td>
<td>Prevention of pediatric obesity through promotion of a healthful diet, physical activity and environment should be a primary goal. Recommendations for diagnosing overweight and obesity, genetic obesity syndromes, prevention of obesity and treating obesity published.</td>
<td>Limitations: Additional research into effective methods for preventing and treating pediatric obesity is needed. Also needed are more studies to better understand the genetic and biological factors that can cause an obese individual to manifest one comorbidity vs. another. Usefulness includes the clear guidelines presented.</td>
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<tr>
<td>Author and Year</td>
<td>Article Title and Excerpt</td>
<td>Study Design</td>
<td>Population</td>
<td>Methods</td>
<td>Main Findings</td>
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<td>Sharpe, L. (2016)</td>
<td>Quick screen to intervene: Starting the conversation about pediatric obesity.</td>
<td>Quantitative, non-experimental, quality-improvement study, Level 6.</td>
<td>Convenience Sample of 60 children ages 3-16 being seen for routine medical care at a school-based community health center located in rural North Carolina</td>
<td>STC 4-12 tool used, which consists of 20 questions, each with 3 Likert-type responses. Tool has a reliability coefficient of .75 and has been previously validated.</td>
<td>No findings were statistically significant, but total STC score decreased (lower scores indicate healthier intervention) from pre-intervention to post-intervention, indicating a positive change in dietary habits or physical activity. BMI decreased as well. The STC-4-12 can quickly and efficiently identify dietary patterns and barriers to healthy eating and physical exercise and provide opportunities for targeted interventions.</td>
<td>Usefulness: Analysis identified barriers to healthy weight, which might be useful from an educational perspective. The STC 4-12 proved to be a valuable tool in facilitating a nonthreatening discussion with pediatric patients and families. Limitations: Different parents could have completed the STC form pre and post-intervention. Responses from parents could have been biased. Another limitation was the lack of specification about the serving size of sweetened drinks and food portions.</td>
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<tr>
<td>Gauthier, (2014)</td>
<td>Starting the conversation: A health information technology tool to address pediatric obesity.</td>
<td>Non-experimental, Integrative Review, Level 7.</td>
<td>The Heartsmart Kids (HSK) HIT based decision support system was evaluated.</td>
<td>The HSK compares reported lifestyle details with clinical practice guidelines. Once completed, it provides a HeartPrint which consists of CDC growth charts.</td>
<td>Review of the tool suggests it is an strong example of innovative technology that can be used in practice by both nurses and nurse practitioners. Authors suggest this tool is a strong addition to the NP’s toolkit.</td>
<td>Limitations: Review did not specify which clinical practice guidelines are used for comparison, although they are listed in the references section. It does offer a practical suggestion to use in practice.</td>
<td></td>
</tr>
</tbody>
</table>

Provide PNP's with better understanding of how to evaluate the generalizability of recent RCTs that demonstrated significant long-term weight control in children and adolescents.

SR, Quantitative, Non-experimental. Level 5. There were no variables manipulated in this review.

2 phases: First phase was an in-depth review of studies in a meta-analysis of 64 studies. Only 6 studies met researcher criteria and were included in this review. The second phase was an evaluation of a framework applied to assess the generalizability of the selected interventions.

Inclusion and exclusion criteria were identified for each trial, as were sample size and drop-out rates. BMI, weight, waist circumference measurements for 12 months or longer were the inclusion criteria.

Most of the long-term significance failed to show improvement; however, 6 significantly improved; 4 were lifestyle changes and 2 were drug trials.

Usefulness: Evidence demonstrates that family-based lifestyle interventions w/behavior modifications focused on modifying diet and exercise patterns can prompt significant weight loss. Limitations: NP must have a clear understanding of selected interventions and how they will work in the setting, with the particular culture and given the resources available.


Purpose was examination of the effectiveness of an obesity treatment intervention based in a primary-care setting. Evaluation occurred over the first year of a 2-year study.

Quantitative, Experimental, cluster RCT. Level 2. Variables included: BMI, daily television and video viewing; daily sugar sweetened beverage intake, fast food frequency, daily fruit/vegetable intake.

Setting: 10 primary care pediatric practices. 5 clinics were intervention locations and 5 provided usual care. Sample: children aged 2-6.9 years with a BMI in the 95th percentile or higher. Children also included if their BMI was in the 85th –<95th percentile and at least one parent was overweight.

Primary outcome was BMI from baseline to one year. Previously validated questions used to assess daily television and video viewing. Sugary beverage intake evaluation performed with valid questionnaire. Fast food intake was measured using one question associated with BMI in an adolescent cohort. Daily fruit/vegetable intake and outdoor physical activity time also measured.

Results: When compared with children who received usual care, the intervention group had a small, nonsignificant change in BMI, greater decreases in reported television viewing, and slightly higher reductions in fast food and sugar-sweetened beverage consumption. Post-hoc analysis found significant effects on BMI in girls, but not boys. Among participants with lower household incomes, significant effects found on BMI.

Usefulness: Identification of gender differences and consideration given to the effect of income. Limitation: Narrow age range of the subjects, but perhaps study could be repeated in older children for translation. Another limitation identified as the EMR-it was not available in all pediatric practices. Parental report of behaviors rather than objective measures are considered another limitation.
<table>
<thead>
<tr>
<th>Author and Year</th>
<th>Title</th>
<th>Summary</th>
<th>Methodology</th>
<th>Findings</th>
<th>Conclusion</th>
<th>Usefulness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reilly, (2006).</td>
<td>Obesity in childhood and adolescence: Evidence based clinical and public health perspectives. Postgraduate Medical Journal.</td>
<td>Summarization of recent systematic reviews related to best evidence in the treatment of childhood and adolescent obesity.</td>
<td>SR-Quantitative, Non-experimental, Level 5. Variables discussed include BMI, obesity consequences, obesity perceptions and preventive interventions.</td>
<td>Recent Cochrane reviews on prevention and treatment of pediatric obesity were evaluated, as were recent SRs and critical appraisal exercises. None reported</td>
<td>Principal consequences of pediatric obesity compiled, as were treatment guidelines, key points and key references. The evidence base on strategies for prevention and treatment is limited at present, highlighting the need for greater research on improved approaches to prevention and treatment across the world.</td>
<td>Usefulness: Clinical Implications, including both primary care approach and referral process were clearly identified. Limitations include an absence of a scientific foundation mentioned, although the information is quite valuable.</td>
</tr>
<tr>
<td>Calamaro, (2009).</td>
<td>Depression and obesity in adolescents: What can primary providers do? The Journal for Nurse Practitioners.</td>
<td>Discuss the relationship between obesity and depression in the adolescent population and examine ways primary care providers can incorporate obesity treatment and management into practice.</td>
<td>SR, Quantitative, non-experimental, Level 4. Variables include: Depression, self-image, sleep, sedentary behavior, appetite and food intake.</td>
<td>No search strategies listed, nor were inclusion/exclusion criteria listed for this review. NA</td>
<td>Conclusion: To address the complex concerns (both physical and psychological) related to obesity and depression in children, primary care providers must take a more proactive approach to prevent overweight and obesity and initiate early intervention. Collaboration across professional groups is also encouraged in these efforts to prevent and treat childhood obesity.</td>
<td>Usefulness: Clinical Implications, including both primary care approach and referral process were clearly identified. Limitations include an absence of a scientific foundation mentioned, although the information is quite valuable.</td>
</tr>
</tbody>
</table>
### Logic Model for DNP Project

**Student:** Jason Moburg, RN, BSN

**Inquiry, PICOTS:** In adolescent females classified as overweight or obese, does participation in a weight loss program yield a significant improvement on self-esteem from baseline measurement to post-intervention measurement following 3 months of treatment in a weight management clinic?

<table>
<thead>
<tr>
<th>Inputs</th>
<th>Intervention(s)</th>
<th>Outputs</th>
<th>Outcomes -- Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evidence, sub-topics</td>
<td>EBP intervention which is supported by the evidence in the input column</td>
<td>The participants (subjects)</td>
<td>(Completed during DNP Project)</td>
</tr>
<tr>
<td>1. Self-Esteem/Self-Concept, Body Image, Depressive Symptoms: Overweight and obese adolescent females have been shown to have poorer self-esteem/self-concept, poorer body image and more depressive symptoms than their normal weight peers.</td>
<td>Participation in a weight loss program will positively affect the self-esteem of overweight and obese adolescent females.</td>
<td>Adolescent females between the ages of 12 and 17 years who meet BMI criteria for being overweight or obese according to CDC guidelines.</td>
<td></td>
</tr>
<tr>
<td>2. Quality of life: Although findings pertaining to the different domains were inconsistent, quality of life in adolescent females is negatively affected in overweight and obese youths.</td>
<td>Major steps of the intervention</td>
<td>Site: Pediatric urgent care setting in the north part of Kansas City, MO</td>
<td></td>
</tr>
<tr>
<td>3. Weight Loss Programs: Good benefit from multi-component programs achieved-components should address nutrition, self-empowerment, physical activity and involvement of family and other support persons.</td>
<td>1. Identify adolescent females between the ages of 12 and 17 who meet CDC BMI criteria for being overweight or obese.</td>
<td>Time Frame: 3 months of participation in PHIT clinic, but total anticipated time frame for project is 8-10 months.</td>
<td></td>
</tr>
<tr>
<td>4. Evidence-Based Guidelines: Must include prevention, diagnosis and treatment. Prevention and treatment recommendations involve lifestyle modification to include healthy eating habits and physical activity. Diagnosis</td>
<td>2. Obtain baseline self-esteem measurement</td>
<td>Consent or assent Needed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Education of patient and family</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Measurement tool(s)</th>
<th>(after student DNP)</th>
<th>Outcomes to be measured</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Height and Weight for BMI calculation</td>
<td>1) Follow-up assessment of self-esteem following completion of the 18-week PHIT program.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) Assess knowledge of referral guidelines in CMH providers including physicians, resident physicians, advanced practice nurses and physician assistants.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) Assess feasibility of</td>
<td></td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Site</th>
<th>Short</th>
<th>Medium</th>
<th>Long</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site: Pediatric urgent care setting in the north part of Kansas City, MO</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Inputs**

- Evidence, sub-topics
  1. Self-Esteem/Self-Concept, Body Image, Depressive Symptoms: Overweight and obese adolescent females have been shown to have poorer self-esteem/self-concept, poorer body image and more depressive symptoms than their normal weight peers.
  2. Quality of life: Although findings pertaining to the different domains were inconsistent, quality of life in adolescent females is negatively affected in overweight and obese youths.
  3. Weight Loss Programs: Good benefit from multi-component programs achieved-components should address nutrition, self-empowerment, physical activity and involvement of family and other support persons.
  4. Evidence-Based Guidelines: Must include prevention, diagnosis and treatment. Prevention and treatment recommendations involve lifestyle modification to include healthy eating habits and physical activity. Diagnosis

**Intervention(s)**

- EBP intervention which is supported by the evidence in the input column
  - Participation in a weight loss program will positively affect the self-esteem of overweight and obese adolescent females.

**Outputs**

- The participants (subjects)
  - Adolescent females between the ages of 12 and 17 years who meet BMI criteria for being overweight or obese according to CDC guidelines.

**Outcomes -- Impact**

- Site: Pediatric urgent care setting in the north part of Kansas City, MO
  - Time Frame: 3 months of participation in PHIT clinic, but total anticipated time frame for project is 8-10 months.

**Measurement tool(s)**

- 1. Height and Weight for BMI calculation
  - Consent or assent Needed
involves BMI measurement and assessment of comorbidities and medications.

5. Prevention and Treatment: Must involve the adolescent’s support system and involve multiple factors such as healthy eating, physical activity and self-monitoring.

**Major Facilitators or Contributors**
1. DNP Student
2. DNP Advisor
3. DNP Faculty
4. Study Participants’ Peers and Family Members
5. Healthcare Providers and Staff
6. PHIT Clinic

**Major Barriers or Challenges**
1. Inadequate number of participants due to lack of parental support or participant motivation
2. Reluctance of providers
3. Participant fear of bias

<table>
<thead>
<tr>
<th>Event</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>on referral to PHIT clinic and importance of participation to achieve and maintain a healthy weight</td>
<td>IRB approval will be needed, and assent from patients/guardians will be needed since this is a pediatric population. Consent for treatment through PHIT clinic needed.</td>
</tr>
<tr>
<td>Participation in PHIT program x3 months</td>
<td>Other person(s) collecting data Yes-DNP Student, Physicians and Advanced Practice Nurses employed by Children’s Mercy Hospital and PHIT Clinic staff.</td>
</tr>
<tr>
<td>Re-assessment of self-esteem measurement following 3 months of participation</td>
<td>Others directly involved in consent or data collection Yes-As above</td>
</tr>
</tbody>
</table>

**Rosenberg self-esteem assessment**

**Statistical analysis to be used**
1. Chi-square
2. T-test

**Reviewing historical referral rates to PHIT clinic for patient meeting study criteria in order to compare with post-study referral rates.**

5. Improved patient and family satisfaction in healthcare and time spent during interactions

6. Improved provider satisfaction in encouraging them to take time to address health promotion
Appendix D

Intervention Flow Diagram and Timeline
Appendix E

Theory to Application Diagram

Personal Factors
Knowledge about weight management strategies, overweight and obesity; expectations regarding propensity for success or failure; and attitudes about weight, physical activity dietary management.

Behavior
Skills related to physical activity and dietary restrictions, practice of recommended strategies; and self-efficacy

Environmental
Social norms related to overweight and obesity expectations; access to physical activity and healthy dietary options in the community; and influence on others and the environment to exercise healthy choices.
Dr. Florence Rosenberg has given permission to use the Self-Esteem Scale for educational and professional research.

<table>
<thead>
<tr>
<th></th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
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<tbody>
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<td>1</td>
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<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>2</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>3</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
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<td>SD</td>
</tr>
<tr>
<td>5</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
<td>6</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
<tr>
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<td>9</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
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<tr>
<td>10</td>
<td>SA</td>
<td>A</td>
<td>D</td>
<td>SD</td>
</tr>
</tbody>
</table>
Appendix G

Definition of Terms

Adolescent: A young person who is developing into an adult. For the purposes of this study, children ages 12-17.

Body Image: A subjective perception of one's own physical appearance recognized by both by self-observation and by the reactions of others.

Depression: A state of feeling sad.

Exercise: Bodily exertion for the sake of developing and maintaining physical fitness.

Female: Characteristic of girls, women, or the female sex.

Nurse Practitioner: A registered nurse who is qualified through advanced education to engage in advanced assessment, diagnosis and treatment of a variety of disease states and illnesses.

Obesity: A condition characterized by the excessive accumulation and storage of fat in the body.

Overweight: Excessive or burdensome weight.

Quality of Life: How good or bad a person’s life is.

Self-Concept: The mental image one has of oneself.

Self-Esteem: A confidence and satisfaction in oneself.

Treatment Guidelines: Expert recommendations based on evidence and research intended to guide practice and treatment of conditions and disease processes.

Weight Management: The practice of participating in activities and educational opportunities to achieve and maintain a body weight considered healthy.
Appendix H

Intervention Material, example of education program

FIT-TASTIC FEEDBACK FORM: CHECK IT OUT!

1. Physical activity: On a typical day, how many minutes do you (does your child) spend in active play/exercise (biking, running or swimming)?
   - [ ] 0 min
   - [ ] 15 min
   - [ ] 30 min
   - [ ] 45 min
   - [ ] 60 min
   - [ ] 90 min (1.5 hours)
   - [ ] 90 min (1.5 hours) or more
   - [ ] None
   - [ ] N/A

2. Screen time: On a typical day, how many hours are you (does your child) in front of a screen (TV, computer, video game, cell phone)?
   - [ ] 1 hour or less
   - [ ] 1.5 hours
   - [ ] 2 hours
   - [ ] 2.5 hours
   - [ ] 3 hours
   - [ ] 3.5 hours
   - [ ] 4 hours
   - [ ] 5 or more hours
   - [ ] None
   - [ ] N/A

3. Milk and yogurt: On a typical day, how many times do you (does your child) drink milk (cheese, one)?
   - [ ] 1 time/day or less (1 cup or less)
   - [ ] Twice/day (2 cups)
   - [ ] Three times/day (3 cups)
   - [ ] 4 cups or more
   - [ ] None
   - [ ] N/A
   - [ ] Other:

   A. What type of milk does your child drink? (check all that apply)
      - [ ] Whole milk
      - [ ] 2% milk
      - [ ] Low fat
      - [ ] Nonfat
      - [ ] Skim milk
      - [ ] Other:

4. Water and beverages: On a typical day, how many times do you (does your child) drink plain water (check one)?
   - [ ] Twice/day (2 cups)
   - [ ] Three times/day (3 cups)
   - [ ] 4 cups or more
   - [ ] None
   - [ ] N/A
   - [ ] Other:

   A. What other beverages do you (does your child) drink in a typical day? Check all that apply:
      - [ ] Water
      - [ ] Juice (100%)
      - [ ] Soda, fruited or sports drink (such as Fanta, Sprite, Gatorade, Powerade®)
      - [ ] Milk
      - [ ] Other:

5. Fruits and vegetables: On a typical day, how many times do you (does your child) usually eat fruits and vegetables?
   - [ ] 0 or less
   - [ ] 1
   - [ ] 2
   - [ ] 3
   - [ ] 4
   - [ ] 5 or more
   - [ ] None
   - [ ] N/A
   - [ ] Other:

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Fresh, frozen or canned fruits and vegetables are full of important vitamins, minerals, water and fiber that help keep your body healthy. Be sure to include three to five servings each day.
1 HOUR OR MORE OF PHYSICAL ACTIVITY

FIT-TASTIC!

BENEFITS OF BEING ACTIVE:
BEING ACTIVE AT LEAST 1 HOUR A DAY HELPS:
- You sleep better
- You have more energy
- Exercise your heart and lungs
- Build strong bones and muscles
- You maintain a healthy weight
- Boost your mood
- You feel good about yourself

DAILY WAYS TO INCREASE ACTIVITY:
- Stand instead of sitting, walk instead of standing, run instead of walking.
- Take the stairs or walk up the escalator.
- Walk your dog or a neighbor's dog.
- Walk with a friend.
- Walk or bike to and from school.
- Use a pedometer to track your steps.
- Pack the car far away to get in extra steps.

BE MORE ACTIVE:
INDOOR ACTIVITIES
- Turn on music and dance.
- Try an exercise DVD at home.
- Sign up for a class at a community center.
- Play musical chairs.
- Play Twister®.
- Play hidey seek.
- Do karate or gymnastics moves.
- Build a fort with pillows, blankets and more.
- Try a hula hoop or mini trampoline.
- Go bowling or play indoor miniature golf.
- Play laser tag or paintball.
- Try active video games like Xbox Kinect® and Wii Fit

OUTDOOR ACTIVITIES
- Go to a nearby park or playground.
- Make an obstacle course or fitness trail.
- Ride bikes, scooters, skateboards or roller-skates/Blake.
- Play four square, tag, catch, kickball or soccer.
- Play hopscotch or draw with sidewalk chalk.
- Play Frisbee or Frisbee golf.
- Jump rope or play Skip-It.
- Run through the sprinkler.
- Garden.
- Climb trees.

N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project
WHAT THREE ACTIVITIES WILL YOU DO?

1. 

2. 

3. 

TIPS & FACTS

- You have 1,440 minutes in every day. Find 60 minutes each day to be active!
- It's okay to break up the time and not be active all at once. Try at least 10-15 minutes at a time.
- The best activity is the one you'll do.
- Make physical activity fun.
- Plan ahead and think about when you have time to be active. What days of the week and what time of the day will you be active? Where will you go to be active?
- Write it down to help make it a priority.
- When you're active, your heart should be beating faster and it should be harder to breathe.
- Plan family activities like bike rides or going to the park or zoo.
- Plan Olympics for family and friends.
- Get involved in local activities like team sports, dance, gymnastics, swimming, rock climbing... etc.

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Learn more at www.12345Fit-Tastic.org

N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project
ADOLESCENT OBESITY

May 2017

Adapted from UMKC DNP Program, Project

N5617, N5617A, LL, JW
**Benefits of Milk & Yogurt:**
- Daily products like milk and yogurt provide a lot of nutrients that are important for your health. These include calcium, vitamin D, potassium, magnesium, and protein.
- Calcium and vitamin D make your bones and teeth strong. This is very important when children are growing.
- Low and nonfat milk and yogurt provide little or no fat which is best for good health.

**Drink Milk:**
Drink 2-3 servings of 1% or skim milk a day.
(1 cup = 8 oz = 1 carton or 1/2 pint)
- Skim (nonfat) milk and 1% lowfat milk are recommended for anyone above the age of two. They have the same nutrients as 2% and whole milk.
- Drinking milk helps you meet your calcium and vitamin D needs.
- If you don’t like plain milk, try a flavored milk for one serving per day.
- Serve milk at each meal.
- Keep milk ice cold. Kids are more likely to drink it.
- Use milk to cook oatmeal or other hot cereals.
- Use milk to make pudding for an occasional treat.

**Eat Yogurt:**
- Yogurt can be used as one or more of your daily milk servings.
- Use fruit-flavored yogurt as a fruit dip.
- Have yogurt as a snack.
- Make your own smoothies by blending your favorite frozen fruit with yogurt and milk.
- Make your own parfait by layering fruit and yogurt. You can even top it off with granola.
- Some yogurts have probiotics. This helps keep the balance of bacteria in your gut. This can help keep your immune system healthy.
- Use plain yogurt instead of sour cream or mayonnaise in recipes or on a belied potato.
- Not all yogurts have vitamin D in them. Check the label to see if your dose.

**How Much Do I Need?**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Calcium (mg)</th>
<th>Vitamin D (IU)</th>
<th>Servings</th>
<th># of Servings</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-3 years</td>
<td>700</td>
<td>600</td>
<td>3/4 cup</td>
<td>3</td>
</tr>
<tr>
<td>4-8 years</td>
<td>1000</td>
<td>600</td>
<td>1 cup</td>
<td>3</td>
</tr>
<tr>
<td>9-18 years</td>
<td>1300</td>
<td>600</td>
<td>1 cup</td>
<td>3-4</td>
</tr>
</tbody>
</table>

*This table is adapted from the DR. Rogers (Dietary Reference Intakes for Calcium and Vitamin D). This Report may be accessed at www.nfco.gov/vitamins.*
ADOLESCENT OBESITY

WHAT'S IN YOUR CUP?

<table>
<thead>
<tr>
<th></th>
<th>Skim (0% fat)</th>
<th>1% (lowfat)</th>
<th>2% (reduced fat)</th>
<th>Whole</th>
<th>Chocolate skim milk</th>
<th>Chocolate whole milk</th>
<th>Soy milk, plain fortified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calories</td>
<td>85</td>
<td>100</td>
<td>125</td>
<td>150</td>
<td>140</td>
<td>210</td>
<td>300</td>
</tr>
<tr>
<td>Fat</td>
<td>0g</td>
<td>2.5g</td>
<td>5g</td>
<td>8g</td>
<td>1g</td>
<td>9g</td>
<td>4g</td>
</tr>
<tr>
<td>Protein</td>
<td>8g</td>
<td>8g</td>
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<td>8g</td>
<td>9g</td>
<td>8g</td>
<td>7g</td>
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<tr>
<td>Calcium</td>
<td>300mg</td>
<td>300mg</td>
<td>280mg</td>
<td>275mg</td>
<td>290mg</td>
<td>280mg</td>
<td>300mg</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>115(µg)</td>
<td>115(µg)</td>
<td>120(µg)</td>
<td>125(µg)</td>
<td>115(µg)</td>
<td>120(µg)</td>
<td>120(µg)</td>
</tr>
</tbody>
</table>

DON'T LIKE MILK OR IT HURTS YOUR STOMACH?

Some people have trouble digesting lactose. This is the natural sugar found in milk and dairy products. If you have trouble with this, try these tips:

- Try milk in smaller amounts. About a 4 ounce (1/2 cup) glass at a time.
- Try to eat 3 servings a day of other high calcium foods. These include: lactaid milk, enriched soy products, low-fat cheese, low-fat cottage cheese, yogurt or tofu.
- Try foods with added calcium (calcium fortified foods). These include: orange and apple juice, breakfast cereal bran, English muffins and other breads, oatmeal, cream of wheat, and hot chocolate.
- Other good sources of calcium are green leafy vegetables like kale, broccoli and Chinese cabbage, but are not absorbed as well as milk and yogurt.
- Talk to your doctor or a dietitian for a calcium and vitamin D supplement recommendation if you cannot eat these calcium rich foods.

TIPS & FACTS

- Drink milk with your meal.
- Choose snacks that include yogurt like parfait or as a dip for fruit.
- The average person drinks 45 gallons of sugary drinks a year, often replacing milk or water.
- It is difficult to get in enough calcium, which is an important nutrient for your bones, if you do not drink milk each day.
- When choosing drinks other than milk, choose water, not sugary drinks.
- It is better to avoid coffee but if you choose a drink with coffee, limit it to once a day.
- Use skim milk instead of cream or whole milk in coffee drinks.
- Avoid energy drinks. They contain caffeine and other stimulants in high amounts, as well as sugar, and they have few nutrients.
- Your body may lose calcium when you drink caffeinated beverages.

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May 2017
Adapted from UMKC DNP Program, Project
**BENEFITS OF WATER:**
Water is one of the most important nutrients in the body.
- It quenches thirst.
- It carries nutrients through the body.
- It cools the body.
- It helps absorb foods.
- It helps improve skin.
- It helps keep you regular.
- It can help prevent tooth decay.

**HOW MUCH DO I NEED?**

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Adequate Daily Intake for Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3 years</td>
<td>about 4 cups</td>
</tr>
<tr>
<td>4-8 years</td>
<td>about 5 cups</td>
</tr>
<tr>
<td>9-13 years</td>
<td>about 8 cups for boys</td>
</tr>
<tr>
<td>14 years &amp; older</td>
<td>about 11 cups for boys</td>
</tr>
</tbody>
</table>

*This table is adapted from the CDC’s “2016-2020 Dietary Reference Intakes for Water, Potassium, Sodium, Chloride, and Sulfate.” The report may be found at www.nal.usda.gov.

**WHAT ABOUT JUICE?**
- Fruit juice has vitamins but can have as many calories as soda. Choose whole fruit instead of juice.
- If you do drink juice, limit it to 4-6 oz of 100% fruit juice a day.

**WHAT ABOUT DIET SODA?**
- If you do drink diet soda, limit it to one serving a day.
- Diet soda does not contain sugar, but it has acid that can cause cavities and tooth decay.
- When you drink diet soda, you are not drinking milk, which is important for strong bones.

**DRINK MORE WATER:**
- Keep a pitcher of water in the fridge.
- Add slices of fruit like lemons, limes, or oranges to the water if you don’t like plain water.
- Fill a reusable bottle of water to take on the go.
- Try sugar-free, flavored waters.
- Serve only water between meals.
- Drink a glass of water when you brush your teeth.
- Order water with your restaurant meal.
- Tap water is free!

**INSTEAD OF SUGARY DRINKS:**
Sugary drinks can sneak up on you. They can add extra calories each day without ever filling you up.

**SUGAR DRINKS INCLUDE:**
- Soda
- Kool-Aid™
- fruit drinks such as Sunny Delight™, CapriSun™, Hawaiian Punch™, Hi-C™
- fruit punch
- lemonade
- sweet tea
- sports drinks such as Gatorade™ or Powerade™
- energy drinks
- vitamin waters™

Adapted from UMKC DNP Program, Project
### What's in Your Cup?

**Check out this chart to see how much weight you might gain in one year if you drink sugary drinks!**

<table>
<thead>
<tr>
<th>Daily Soda Size</th>
<th>Calories</th>
<th>tsp of sugar</th>
<th>Wt gain in 1 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 oz</td>
<td>108</td>
<td>7 tsp</td>
<td>11 pounds</td>
</tr>
<tr>
<td>12 oz</td>
<td>156</td>
<td>10 tsp</td>
<td>16 pounds</td>
</tr>
<tr>
<td>20 oz</td>
<td>260</td>
<td>15 tsp</td>
<td>27 pounds</td>
</tr>
<tr>
<td>1 liter</td>
<td>432</td>
<td>27 tsp</td>
<td>45 pounds</td>
</tr>
<tr>
<td>2 liters</td>
<td>884</td>
<td>54 tsp</td>
<td>90 pounds</td>
</tr>
</tbody>
</table>

**Any size water**

0 | 0 tsp | 0 pounds

### Don't Be Fooled!

- Water is best for hydration.
- Sports drinks like Gatorade™ and Powerade™ have sugar, sodium and calories and can lead to weight gain.
- Energy drinks are also sports drinks but also have caffeine and other stimulants that can be harmful.
- Sugar-sweetened drinks are basically sugar-water and have no vitamins, minerals or protein.
- Don't be fooled by vitamin waters that have vitamins added to them. The vitamin content can be too much for children and most have added sugars.
- The chances of becoming obese increases 1.8 times for every sugar-sweetened drink you have per day.

### Tips & Facts

- The average person drinks 45 gallons of sugary drinks a year. This replaces drinking milk or water.
- Your body may lose calcium when you drink caffeinated drinks.
- When you choose drinks other than milk or water, choose decaffeinated, diet soda, and unsweetened coffee or tea drinks.
- Caffeine can cause you to be nervous and disturb your nighttime sleep.
- Avoid energy drinks. They contain caffeine, other stimulants, sugar and few nutrients.
- Carry a reusable bottle of water with you everywhere you go.
- Make water your main drink during the day.

---

**Choose Healthy Habits for a Healthy Future!**

[Learn more at www.12345Fit-Tastic.org](http://www.12345Fit-Tastic.org)
ADOLESCENT OBESITY

N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project

BENEFITS OF FRUITS & VEGETABLES:
- Helps prevent certain types of diseases such as cancer.
- Contains water and fiber.
- They are full of vitamins and minerals.
- Helps make blood and keep bones and muscles strong.
- Helps give you a healthy complexion.

TIPS TO INCREASE INTAKE:
- Plan dinner around two veggies.
- Carry dried fruit or a quick snack.
- Eat fresh fruit or veggies for a snack.
- Add fruit to a light yogurt smoothie.
- Add chopped apricots, apples or pears to a green salad.
- Add frozen or fresh veggies to canned soup.
- Ask for tomatoes or other veggies on sandwiches.
- Use chopped fruit in breads or muffins.
- Add fruit to cereal or pancakes.
- Try veggie pizza or top cheese pizza with onions, peppers, tomatoes or broccoli.

KEEPING FOOD FROM SPOILING:
- Serve fresh fruits and veggies first; save the frozen and canned ones for later.
- Buy both late and non-rice fruits and veggies. Eat first ones first and allow the others to last a few days longer.
- Keep fruits and veggies in sight in the refrigerator or on the kitchen table.
- Plan your meals ahead of time to include fruits and veggies.

QUICK & EASY PREPARATION:
- Wash and cut fruits and veggies ahead of time.
- Keep canned, frozen and dried fruit on hand.
- Stock up on frozen veggies for easy microwave cooking.
- Buy ready-to-eat fruits and veggies from the grocery store salad bar.
- Buy pre-sliced, prewashed bagged salad from the store.
- Pick fruits or veggies that don’t need any prep like bananas and apples!
TASTE THE RAINBOW!

RED
- APPLE
- CHERRIES
- TOMATO
- PEPPER
- STRAWBERRY
- WATERMELON
- GRAPEFRUIT
- POMEGRANATE

ORANGE
- PUMPKIN
- ORANGE
- CANTALOUPE
- TANGERINE
- CARROT
- SWEET POTATO
- MANGO
- PAPAYA

GREEN
- BROCCOLI
- PEPPER
- SPINACH
- GREEN BEANS
- PEA
- KOMI
- GRAPES
- LETTUCE/GREENS

YELLOW
- PEACH
- APRICOT
- MANGO
- PINEAPPLE

BLUE/PURPLE
- PLUM
- GRAPE
- PRUNE
- RAISINS
- BLUEBERRIES
- EGGPLANT

WHITE
- CAULIFLOWER
- POTATO
- PEAR
- ONION
- SPROUTS
- JICAMA
- BANANA

CONCERNED ABOUT COST?
- Watch ads for sales.
- Cut coupons from newspapers.
- Buy fresh fruits and vegetables in season and freeze for later.
- Compare prices of canned, frozen and fresh fruits and vegetables, and buy the cheapest.
- Try growing your own fruits and vegetables.
- Consider going to a local farmer's market.

ONE SERVING IS:
- 1 medium fruit (tennis ball).
- 1 cup small or cut up fruit like grapes.
- 1/2 cup dried fruit.
- 2 cups raw leafy vegetables (lettuce).
- 1 cup non-leafy cooked vegetables.

TIPS & FACTS
- Buy or make lowfat smoothies or fruit and yogurt parfaits with your friends.
- Try frozen yogurt with fruit such as strawberries, raspberries or blueberries.
- Drop up fresh fruits and vegetables for get togethers or parties.
- Choose a side salad with your meal when eating out or replace French fries with seasonal veggies.
- Serve raw veggies with lowfat or nonfat dip.
- Cut fruits and vegetables into fun shapes or try kebabs.
- Have baked apples or pears for dessert.
- Offer various textures such as crunchy (apples) and smooth (bananas).
- Eat the whole fruit and vegetable instead of juice. They are higher in fiber, lower in calories and can be more filling.
- Freeze berries, grapes or bananas for a quick snack.
- Keep trying and offering them! You never know, you may like it the second time around.

CHOOSE HEALTHY HABITS FOR A HEALTHY FUTURE!
Learn more at www.12345Fit-Tastic.org

Follow us on:

N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project
PHIT Kids
S.M.A.R.T Goal Setting

Begin with the end in mind....
What do you want to be different in six months when this class is finished for yourself, and your family?
Make a list.

*  
*  
*  

Pick one thing from this list to make a S.M.A.R.T. goal about for the next week.

My goal should be S.M.A.R.T.
Specific what is the exact behavior you want to focus on?
Measurable there is a measurable quantity, such as time, distance or quantities?
Attainable are there steps I can take to reach my goal?
Realistic does it fit in my lifestyle, is it something I am able to achieve?
Timely how long do I have to reach my goal, what is my deadline?

My Goal for this week is:


My PHIT family member’s goal is:


How can we support each other’s goal this week?


N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project
PHIT Kids

Parent Communication Skill-building

Give effective directions and set limits for children’s behavior. Remember you are the captain of your ship!

- Be clear and specific
- Avoid giving multiple instructions within one instruction
- Avoid saying instructions in the form of questions or suggestions
- Use “when-then statements to get children to comply
- Try the broken record technique

When parents set limits, it is common that kids will whine, fuss, pout, complain, demand, beg, or throw a tantrum. Don’t let yourself feel guilty and worry about the limits you set.

- Ignore consistently
- Don’t accidentally reward bad behavior
- Give lots of attention when the misbehavior stops
- Use other strategies, when necessary

As parents, we should reward our children’s good behavior often because rewarded behavior is likely to happen again! People repeat behaviors that are rewarded. Children’s self-esteem also is greatly influenced by the feedback they receive from their parents.

- Use plenty of social rewards
- Give positive attention right away
- Use powerful rewards
- Follow through with promises
- Praise and reward frequently

List 5 non-food related rewards, remember they don’t need to be expensive.

- 
- 
- 
- 
- 

- Be a positive influence on your child: Model the behavior that you expect of your child. Be more physically active yourself. Eat more healthfully yourself. When doing these behaviors, do it with a positive attitude so that your child will want to imitate you.
10 tips
Nutrition Education Series

be a healthy role model for children

10 tips for setting good examples

You are the most important influence on your child. You can do many things to help your children develop healthy eating habits for life. Offering a variety of foods helps children get the nutrients they need from every food group. They will also be more likely to try new foods and to like more foods. When children develop a taste for many types of foods, it's easier to plan family meals. Cook together, eat together, talk together, and make mealtime a family time.

1. **show by example**
   - Eat vegetables, fruits, and whole grains with meals or as snacks. Let your child see that you like to munch on raw vegetables.

2. **go food shopping together**
   - Grocery shopping can teach your child about food and nutrition. Discuss where vegetables, fruits, grains, dairy, and protein foods come from. Let your children make healthy choices.

3. **get creative in the kitchen**
   - Cut food into fun and easy shapes with cookie cutters. Name a food your child helps make. Serve "Jenny's Salad" or "Jennie's Sweet Potatoes" for dinner. Encourage your child to invent new snacks. Make your own trail mix from dry whole-grain, low-sugar cereal and dried fruit.

4. **offer the same foods for everyone**
   - Skip being a "short-order cook" by making different dishes to please children. It's easier to plan family meals when everyone eats the same foods.

5. **reward with attention, not food**
   - Show your love with hugs and kisses. Comfort with hugs and talks. Choose not to offer sweets as rewards. It lets your child think sweets or dessert foods are better than other foods. When meals are not eaten, kids do not need "extra"—such as candy or cookies—as replacement foods.

6. **focus on each other at the table**
   - Talk about fun and happy things at mealtime. Turn off the television. Take phone calls later. Try to make eating meals a stress-free time.

7. **listen to your child**
   - If your child says he or she is hungry, offer a small, healthy snack—even if it is not a scheduled time to eat. Offer choices. Ask "Which would you like for dinner: broccoli or cauliflower?" instead of "Do you want broccoli for dinner?"

8. **limit screen time**
   - Allow no more than 2 hours a day of screen time like TV and computer games. Get up and move during commercials to get some physical activity.

9. **encourage physical activity**
   - Make physical activity fun for the whole family. Involve your children in the planning. Walk, run, and play with your children—instead of sitting on the sidelines. Set an example by being physically active and using safety gear, like bike helmets.

10. **be a good food role model**
    - Try new foods yourself. Describe its taste, texture, and smell. Offer one new food at a time. Serve something your child likes along with the new food. Offer new foods at the beginning of a meal, when your child is very hungry. Avoid lecturing or forcing your child to eat.

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Adapted from UMKC DNP Program, Project 70

May 2017
Stop Light Diet

As we’ve talked about, fresh fruits and vegetables are GREEN foods in the stop light diet program. We use the stop light diet program as research has shown it is the most effective diet to use with children. Actually, though, the stop light diet is not a diet at all. It’s a way to think about what you’re eating, as a red food, a yellow food, or a green food. So, we’re recommending this diet to you as well!

Green foods
- Green foods are very healthy — they’re GO foods. You can eat as many as you want, as often as you want and you don’t have to be cautious about portion size or number of servings.
- Green foods include fresh fruits, fresh vegetables, frozen 100% fruit, frozen vegetables, canned fruit (as long as they’re packaged in 100% juice) and canned vegetables (as long as they don’t have any added ingredients).

Red Foods
- As we’ve talked about, red foods are STOP foods. They are unhealthy and you do not need them to survive. They typically are packed with calories and have little nutrient value.
- The basic rule for red foods is that they have more than 12 grams of sugar or 7 grams of fat per serving.
- Red foods include cookies, cake, candy, peanut butter, chips, pop, sports drinks, juice drinks, most crackers, white bread, whole milk, red meat, and many others.
- During this program you should try to limit your consumption of red foods to no more than 1 serving per day. The official stop light program recommends no more than 4 red foods per week.

Yellow Foods
- Yellow foods are CAUTION foods. You can eat them, and may need them to survive, but you have to be cautious about portion size and number of servings per day.
- Yellow foods include lean meats, eggs, low-fat cheese and milk, and whole grain breads/cereals/pastas.
- If a food has more than 12 grams of sugar or 7 grams of fat per serving it is not a yellow food. If it has less than this, then it is a yellow food. This still means you need to watch your serving size and number of servings per day.
Eating a packaged food? Look on the label for the calories and fat grams to determine if the food was a yellow food or a red food.

First, look at the Total Fat grams PER SERVING

Next, look at the sugars PER SERVING

If the Total Fat is over 7 grams OR the sugars is over 12 grams PER SERVING - You are eating a red food.

For your log, count the number of servings of that food you eat, and be sure to record the information.

What kinds of foods do you eat that are in the red category?

1
2
3
4
5
6
Let's brainstorm about what you can do to decrease the number of red foods you eat. Write down 3 ideas that you have to cut down the number of red foods. Then, we'll talk about these as a group.

1

2

3
Stoplight Diet Challenge

Directions: For each food listed choose which category it belongs in by circling either the thumbs up, thumbs neutral, or thumbs down sign. Leave the last column blank to check your answers at the end.

Review:
- **Green **"Go" **Foods**—high nutrient, high energy foods, with medium and low calorie content that should be eaten often.
- **Yellow "Slow" Foods**—snacky calories, easy snack foods that should be eaten in moderation.
- **Red "Whoa" Foods**—high-fat, high-calorie foods that should be eaten only occasionally.

<table>
<thead>
<tr>
<th>Foods</th>
<th>Green®Go</th>
<th>Yellow®Slow</th>
<th>Red®Whoa</th>
<th>✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steamed Carrots</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheeseburger</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salad with Light Dressing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soft Pop</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cheese</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apple</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grilled Chicken Breast</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steak</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Rice</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Whole Wheat Cereal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Candy Bar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White Bread</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eggs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banana</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green Beans</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black Bean Soup</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muffins</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fried Chicken</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grilled Fish</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Number Answered Correctly: ___
### Stop Light Diet

#### Quick Tips:
- Only fruits and vegetables are green foods.
- If you add sugar or fat to fruits or vegetables, they are no longer green foods.
- Red foods have >7g fat and/or >12g sugar per serving.

#### Grains, Grains and Cereals
- **Yellow Foods**
  - Whole grain bread, peas, corn, and rice
  - Oatmeal
  - Tortillas
  - Whole grain crackers

#### Fruits
- **Green Foods**
  - Apples, Apricots, Berries, Bananas, Canned/Preserved Tomatoes, Cherries, Cranberries, Grapes, Kiwis, Mangos, Oranges, Peaches, Peas, Plums, Tangerines

#### Vegetables
- **Green Foods**
  - Asparagus, Broccoli, Cabbage, Cauliflower, Celery, Cucumbers, Green beans, Green peas, Mushrooms, Onions, Peas, Spinach, Squash and zucchini, Sweet potato and yam, Tomatoes, Peppers

#### Meats, Eggs, Beans, Nuts
- **Yellow Foods**
  - Lean beef
  - Chicken (white meat, no skin)
  - Turkey (no skin)
  - Pork

#### Lean Foods
- **White meats no fat**
  - Cereals with no added sugar
  - White rice
  - Croutons or other bread products
  - Crackers
  - Maltodextrin, Cornstarch

#### Fat Foods
- **Whole grain crackers**
  - Canned fruits with added sugar or in syrup
  - Frozen fruits with no added sugar

---

N5617, N5617A, LL, JW  
May 2017  
Adapted from UMKC DNP Program, Project
## ADOLESCENT OBESITY

### Nutrition Guide

<table>
<thead>
<tr>
<th>Foods</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Fats</em></td>
<td>Fat (poultry, shrimp, scallops)</td>
</tr>
<tr>
<td><em>High-fat meats</em></td>
<td>High-fat beef</td>
</tr>
<tr>
<td><em>Fried vegetables</em></td>
<td>Fried vegetables and</td>
</tr>
<tr>
<td><em>Fried</em></td>
<td>Fried tomatoes</td>
</tr>
</tbody>
</table>

### Milk and Dairy

<table>
<thead>
<tr>
<th>Foods</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Yellow Meats</em></td>
<td>Cheese</td>
</tr>
<tr>
<td><em>Whole milk</em></td>
<td>Low-fat milk</td>
</tr>
<tr>
<td><em>Yogurt (no sugar added)</em></td>
<td>Yogurt (no sugar added)</td>
</tr>
<tr>
<td><em>Eggs</em></td>
<td>Eggs</td>
</tr>
<tr>
<td><em>Butter</em></td>
<td>Butter</td>
</tr>
</tbody>
</table>

### Fruits and Vegetables

<table>
<thead>
<tr>
<th>Foods</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Seeds</em></td>
<td>Sesame</td>
</tr>
<tr>
<td><em>Sauce</em></td>
<td>Barbecue sauce</td>
</tr>
<tr>
<td><em>Sauce</em></td>
<td>Tomato sauce</td>
</tr>
</tbody>
</table>

### Sweets

<table>
<thead>
<tr>
<th>Foods</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Fruits</em></td>
<td>Fruits</td>
</tr>
<tr>
<td><em>Vegetables</em></td>
<td>Vegetables</td>
</tr>
<tr>
<td><em>Cheese</em></td>
<td>Cottage cheese</td>
</tr>
</tbody>
</table>

### Beverages

<table>
<thead>
<tr>
<th>Foods</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>100% fruit juice</em></td>
<td>100% fruit juice</td>
</tr>
<tr>
<td><em>Low-fat milk</em></td>
<td>Low-fat milk</td>
</tr>
<tr>
<td><em>Unsweetened tea</em></td>
<td>Unsweetened tea</td>
</tr>
<tr>
<td><em>Regular tea</em></td>
<td>Regular tea</td>
</tr>
<tr>
<td><em>Soda with lime flavor</em></td>
<td>Soda with lime flavor</td>
</tr>
<tr>
<td><em>caffeinated</em></td>
<td>Caffeinated</td>
</tr>
<tr>
<td><em>Soda with added sugar</em></td>
<td>Soda with added sugar</td>
</tr>
</tbody>
</table>

---

N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project
Eat A Healthy Breakfast

BREAKFAST IS THE MOST IMPORTANT MEAL OF THE DAY, BUT FOR SOME FAMILIES MORNING IS THE BUSIEST TIME OF DAY.

Kids who eat breakfast are more likely to:
• Have more energy.
• Maintain a healthy body weight.
• Work faster, make fewer mistakes, be more creative, and even score higher on tests.
• Not overeat later in the day.
• Make fewer trips to the nurse’s office complaining of stomach aches.
• Meet their daily protein requirements and have higher nutrient intakes.

TEEN TIPS

- Lean ham, low-fat cheese, or peanut butter on whole wheat toast
- Hard boiled egg with fruit
- String cheese with whole wheat pita bread, reduced fat cheese sticks, reduced fat Wheat Thins®, or reduced fat Wheat Thins®
- Corn or whole wheat tortilla with mixed low-fat cheese
- Breakfast smoothie; blend 1% or skim milk or rice or non-fat yogurt with fresh and/or frozen fruits
- Pizza (whole wheat; English muffin with low-fat cheese and pizza sauce)
- Mozzarella sandwich with low-fat bread and low-fat cheese and a whole grain cereal

HUNGER CONTROL

Choose whole grain breads and cereals. The fiber in them may help you feel full longer. On the food label, look for:
• A whole grain (e.g., whole wheat flour or whole grain oats listed as the first ingredient)
• Cereals with 3 or more grams of fiber per serving
• Breads with 2 or more grams of fiber per serving
• Crackers with 3 or more grams of fiber per serving

Be careful of foods that have added fiber but do not have a whole grain listed as the first ingredient. This added fiber has not been found to have health benefits.

BREAKFAST CEREALS/BARS

The following cereals/bars contain at least 3 grams of fiber and less than 12 grams of sugar per serving.
- Kix™
- Cheerios & Multi Grain Cheerios™
- Toasted Oats
- Quaker Crunchy Corn Bran™
- Fiber One Original™
- Wheaties™
- Total 100% Whole Grain™
- Honey Sunshine/Go Lean™
- Quaker Oat Bran™
- Total Raisin Bran™
- Raisin Bran™
- Wheat Chex & Multi-Chex™
- Mini-Wheats™
- Quaker Oatmeal Squares™
- Hot Cereals
- Oatmeal Low-Sugar Instant Oatmeal
- Kashi Heart to Heart
- Cereal Bars
- Quaker 25% Reduced Sugar Bars™
- FIB chocolate chips/Chocolate chip

MY GOAL:  

Adapted from UMKC DNP Program, Project
**Family Meals At Home**

**TO IMPROVE HEALTH TRY THESE CHANGES**

<table>
<thead>
<tr>
<th>INSTEAD OF:</th>
<th>CHOOSE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Milk, 2%, Chocolate or Strawberry Milk</td>
<td>1% or Fat-Free Milk</td>
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<tr>
<td>Fruit drinks, Soda Pop, Juice, Kool-Aid™, Gatorade™</td>
<td>Water, Sugar-Free Kool-Aid™, Crystal Light™</td>
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<tr>
<td>Cake, Shortening</td>
<td>Oils (small amounts)</td>
</tr>
<tr>
<td>Flour Tortillas</td>
<td>Whole Wheat Flour Tortillas or Corn Tortillas</td>
</tr>
<tr>
<td>Regular Hamburger</td>
<td>Lean Ground Beef, Chicken, Turkey or Lean Pork</td>
</tr>
<tr>
<td>Whole Chicken</td>
<td>Chicken (remove skin or use breasts)</td>
</tr>
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</table>

**QUICK HEALTHY MEALS**

1. Crock pot meals with meat, potato, and carrots, salad, and peach
2. Frozen stir-fry vegetables with leftover meat, brown rice, sliced tomatoes, pineapple
3. Vegetable omelet with salsa, tortilla, steamed zucchini, sliced orange
4. Frozen fish or chicken, frozen vegetables, microwaved potato, bagged salad, frozen strawberries
5. Spaghetti, sauce, mixed vegetables, green pepper sticks, pear
6. Sandwich with lean meat on whole wheat bread, tomato soup, celery sticks, grapes
7. Soft-shell taco with lean meat or beans, lettuce, tomato, steamed broccoli, cantaloupe
8. Frozen pizza, toasted salad, baby carrots, yogurt with frozen berries
9. Rotisserie chicken, whole wheat roll, green beans, salad bar salad, salad bar fruit
10. Small fast food burger, side salad, carrot chips, apple slices

**FAST FOOD TIPS**

- Eat out rarely.
- Choose small burger or grilled chicken sandwich with no cheese or mayo.
- Choose low-fat milk or water.
- Choose salad with light dressing instead of fries.
- Avoid value meals.
- Choose fruit as a side.

**DON'T SUPERSIZE!**

**TEEN TIPS:**

- Eat out less - SAVES MONEY and SAVES CALORIES (typical lunch meal = 1400 calories).
- Enjoy your meals, don't drink them - avoid sweet drinks and soda pops.
- Take along a fruit and a high yogurt to have with a small burger or chicken sandwich (no mayo, no dressing).
- Choose quick foods at home: spinach, oranges, cucumber, baby carrots, 1% or skim milk, whole wheat bread, lean deli meats.
- Breakfast at home helps control hunger later in the day (try cereal and fruit).
- Learn to cook healthy meals; volunteer to fix family dinners and share occasionally.

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N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project
Appendix I

Recruitment Materials

N5617, N5617A, LL, JW
May 2017
Adapted from UMKC DNP Program, Project
PHIT KIDS

PHIT Kids Group

Once you and your child commit to making family-based changes, you are ready to take the next step in your family’s healthy lifestyle journey. The clinic staff may offer you and your child the unique opportunity to join the PHIT Kids group. In group, health coaches provide your family education on nutrition, physical activity, and behavioral topics in a fun atmosphere. Because classes are separated into age groups, you and your child will find age-appropriate support from other families determined to improve their lifestyles. These families meet weekly for two-hour-long classes that are dedicated to interactive learning and working up a sweat. In the group, families are committed to being healthy, supporting each other and having fun!

PROMOTING HEALTH IN TEENS AND KIDS

What to Bring

In PHIT Kids Group, you and your child can expect to get moving. Please bring a bottle of water and wear comfortable athletic clothes and athletic shoes. You and your child will be provided with success notebooks and daily food and exercise trackers that you should bring to class every week. Most importantly, PHIT Kids wants you and your family to bring a positive attitude, willingness to try new foods and exercises, and motivation to challenge yourself.

May 2017

Adapted from UMKC DNP Program, Project
PHITNESS IN ACTION!

After completing the weekly meetings in the PHIT Kids Group, you and your child will advance to the final step of the program: PHITness in Action. At PHITness in Action, families get to continue implementing their new skills with a fun activity held once a month. You and your child will be energized to start your day and put into practice what you learned through the week.

May 2017
Adapted from UMKC DNP Program, Project
### Data Collection Template

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### Appendix K

**Statistical Analysis**

Analysis Rosenberg Results

**Patient Self-Esteem (Paired t-test)**

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<th>Pre-Intervention Score</th>
<th>Post-Intervention Score</th>
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