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## Feasibility of Family Focused Obesity Screening in Primary Care

Adrienne Griffiths

University of San Diego, [adavidoski@sandiego.edu](mailto:adavidoski@sandiego.edu)

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UNIVERSITY OF SAN DIEGO

Hahn School of Nursing and Health Science: Beyster Institute for Nursing

Research

DOCTOR OF NURSING PRACTICE PORTFOLIO

**Feasibility of Family Focused Obesity Screening in Primary Care**

By

Adrienne Griffiths

A portfolio presented to the

FACULTY OF THE HAHN SCHOOL OF NURSING AND HEALTH SCIENCE:

BEYSTER INSTITUTE FOR NURSING RESEARCH

UNIVERSITY OF SAN DIEGO

In partial fulfillment of the

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DOCTOR OF NURSING PRACTICE

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Kevin J Maxwell, PhD, DNP, FNP-BC, RN

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## Abstract

**Background:** Obesity is associated with serious medical conditions including diabetes, hypertension, and heart disease. It also contributes to decreased productivity at work and school, financial strain, and reduced quality of life.

**Purpose of Project:** To address this problem, a nurse practitioner-led screening and intervention program was piloted at a primary care clinic in southern San Diego. The tool provides a standardized method for screening individuals and their families for nutrition and physical activity deficits associated with obesity, as well as appropriate and effective interventions to prevent and manage obesity.

**Methods:** The Family Nutrition and Physical Activity (FNPA) screening tool is a behaviorally based assessment which evaluates multiple constructs of health. It has demonstrated consistent utility for predicting children's risk of becoming overweight or developing obesity. Both the screening evaluation and interventions can be applied to the entire family.

**Results:** Across the participants, preintervention data revealed an average BMI of 34.3, and initial FNPA scores averaged 57 out of 80 possible points. After the prescription of interventions, average BMI dropped to 32.5 and average FNPA scores increased to 61 points. All participants reported comfortability discussing the results of the survey and agreed that the interventions were realistic for them.

**Evaluation:** The FNPA is a standardized screening tool which identifies obesogenic behaviors and assists providers as they identify interventions designed to optimize nutrition, exercise, and lifestyle habits. These interventions may help prevent and reduce obesity prevalence rates among

primary care patients. Additional research is needed to further explore the use of the FNPA tool in the primary care setting.

*Keywords:* obesity, Family Nutrition and Physical Activity Screening Tool, primary prevention, secondary prevention, family

## **Feasibility of Family Focused Obesity Screening in Primary Care**

### **Background and Significance**

In the United States, body mass index (BMI) is the measurement commonly used to evaluate an adult's weight status (Centers for Disease Control and Prevention [CDC], 2022a). It is measured by dividing weight in kilograms by the height in meters squared, mathematically written as:  $\text{kg/m}^2$  (CDC, 2022b). Other modalities of weight measurements exist, including skinfold thickness with calipers, dual-energy x-rays (DEXA scan), hydrostatic weights (in a water tank), and bioelectrical impedance analysis. Many of these measurement tools are difficult to employ due to high out-of-pocket expenses, challenges with trending and standardizing results, and the need for trained individuals to administer the tests. Unfortunately, BMI does not differentiate well between fat and muscle, making it an especially poor tool for athletes and the elderly. Despite its limitations, BMI remains the commonly used measurement to assess weight status in adults (CDC, 2022a).

The CDC (2022a) categorizes severity of weight based on BMI. More specifically, a BMI between 18.5 and 24.9 is considered healthy weight, whereas a BMI between 25 and 29.9 is classified as overweight. Obesity is expressed as a BMI greater than or equal to 30. Over the last 20 years, the United States has seen an increase in obesity prevalence from 30.5% to 41.9%. Further, the CDC (2022e) acknowledges many serious obesity-related comorbidities including stroke, cardiovascular disease, diabetes mellitus (Type 2), gallbladder disease, breathing problems (such as sleep apnea), and certain cancers. These consequences of obesity effect physical activity capacity, productivity at work, and even military enlistment eligibility. It is worth mentioning that the CDC estimates obesity-related costs reached \$173 million dollars in

2018, with individuals paying \$1,861 dollars more than people with healthy weights. It is evident that the physical and financial ramifications of obesity and the associated sequelae are profound.

Children are an essential part of the obesity epidemic. Similar to adults, BMI is used to determine weight status for children over 2 years old (CDC, 2022f). This is due to its reliability, cost-effectiveness, and quick utility (American Academy of Pediatrics [AAP], 2023). Dissimilar to adults, a child's BMI is controlled for age and sex to account for their unique growth patterns (CDC, 2022f). The CDC defines childhood obesity as a BMI greater than the 95<sup>th</sup> percentile in a BMI-for-age growth chart. Between 2017 and 2020, the CDC (2022d) found nearly 20% of children were obese. In addition, the CDC has discovered that childhood obesity is more prevalent in families with decreased education levels or income; obesity is also more common among Hispanic and Black families. The CDC (2022e) warns children with obesity are more likely to have obesity as adults, further perpetuating the cycle of obesity in the United States.

Lee et al. (2022) conducted a meta-analysis of 23 studies and found parents with obesity are more likely to have children who develop obesity. Additionally, James et al. (2013) conducted a study on participants with children living at home. They found maternal obesity is a clinically significant predictor of having children who develop obesity. These studies highlight the importance of parental participation in the prevention and management of obesogenic environments for children.

The consequences of obesity in children are like those observed in adults, including diabetes, cardiovascular disease, and breathing problems. However, the CDC (2022e) also notes certain mental health conditions associated with childhood obesity, such as anxiety, depression, and subjective poor quality of life. Therefore, the burden of obesity on children is substantial, and the long-term effects can be especially devastating.

No single population is immune to obesity or its devastating effects. Further, the prevalence of obesity has continued to rise in recent years, further highlighting the magnitude of this issue for all individuals: health care professionals, law makers, school administrators, and health care consumers (CDC, 2022e). As current data demonstrates, obesity affects entire families and should be managed as such (CDC 2022e; James et al., 2013; Lee et al., 2022). Peyer et al. (2020) suggested the key to tackling the obesity epidemic is primary prevention.

### **Purpose**

The purpose of this evidence-based practice project was to review the available and current data surrounding obesity and overweight prevention, screening, and management. The goal of this project was to provide families with a clear assessment of modifiable risk factors for developing obesity and actionable recommendations to mitigate those risks.

### **PICOT Question**

The question which directed this project is as follows: In adult patients with children ages 2-18 in an outpatient adult primary care setting, does the use of the FNPA tool and associated interventions, compared to tracking BMI and encouraging general lifestyle modifications, affect obesity prevalence and lifestyle modifications within 6 weeks?

### **Design**

The FNPA tool (see Figure A1) is a 20-question survey developed by researchers at Iowa State University in collaboration with the Academy of Nutrition and Dietetics. The questionnaire uses a Likert scale to evaluate a family's health status based on 10 constructs of health: family meals, family eating practices, food choices, beverage choices, restriction/reward habits, screen time, healthy environment, family activity behaviors, child activity behaviors, and family sleep schedule (Ihmels et al., 2009). Responses are scored with each question valuing a total of 1-4



points and total scores ranging from 20-80 points. A lower score is indicative of a higher obesogenic environment; therefore, risk of obesity or overweightness. In contrast, a higher score is indicative of a lower obesogenic environment and lower risk of obesity or overweightness.

A set of recommendations are included with the survey and are sorted by construct (see Figure A1). For example, in the screen time category, the authors encourage limiting screen time to less than 2 hours per day because excessive screen time is associated with increased overweightness in children and adolescents (Ihmels et al., 2009).

### **Evidence-Based Practice Model**

I have chosen to apply the Stetler model of research utilization to my evidence-based practice (EBP) project (see Figure A2). It is straight-forward, research-driven, and highly favorable of sustainable practice changes – all of which are fundamental pillars of my study (Stetler, 2001).

The Stetler model of research utilization aligns well with my project for a variety of reasons. First, Phases 1 and 2 of the model focus not only on research, but on the highest caliber of research in the focus area. Stetler (2001) outlined steps for practitioners to take, ensuring the research they use to guide their study is credible, high-quality, and comprehensive of both external and internal sources. Given this project focuses on the long-standing, progressively worsening issue of obesity, it was important to select an EBP model that values quality research to support sustainable practice changes.

In addition to its focus on quality research, Stetler's model also prioritizes the feasibility of implementing the study's practice change throughout the design process (Stetler, 2001). In fact, Stetler urges practitioners to reject research that is not high-quality and remain in the Validation phase of the design process until more valuable research is collected. Next, she

mentions the importance of discovering an appropriate setting for the study and feasibility of its use in the Comparative Evaluation phase. Further, in the practitioner's consideration of how the findings of the study can be used in practice, Stetler reviews formal, informal, direct, and indirect applications. Through the variety of ways in which study findings can be used in practice, Stetler's model showcases the versatility of research, making each study clinically useful in one way or another. The practicality of implementing the practice change is an imperative part of research because it validates the work being done.

The Stetler model is further strengthened by its history of revisions, description of each phase, and strategic approach of implementation into practice (Stetler, 2001). It has been updated since its original publication in 1994. The refined model describes, in succinct detail, how to work through each phase of the model, ensuring no step is missed or rushed. Further, Stetler's most updated EBP model identifies several assumptions that should be acknowledged throughout the research process. For instance, some of these assumptions allow the researcher's data to encompass experiential and local clinic findings, along with any peer-reviewed research. Additional assumptions demonstrate that study findings provide probabilistic data, rather than absolute data. In other words, project findings are not meant to yield unconditional truths but, rather generalizations. Last, Stetler outlined the proper implementation of a practice change, such as through actual changes in practice, changing the way others think about the topic, or increasing awareness (Melnik & Fineout-Overholt, 2019). By broadening the methods of implementation into practice, the Stetler model bridges the gap between research utilization and evidence-based practice far better than other EBP models.

### **Literature Review**

A literature review was conducted on PubMed, Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Google Scholar. The aim of this review was to synthesize the current data on obesity and overweight prevention and management, as well as identify reliable screening tools available. Last, the development and validity of the FNPA survey tool is reviewed in detail. For these reasons, search criteria included the following key terms: obesity, overweight, management, screening, primary prevention, secondary prevention, primary care, and FNPA. Except for articles that outline the history of the FNPA tool development, publications were limited to the last 6 years, available in English, and specific to populations within the United States.

### **National Organizations on Obesity Management and Prevention**

The CDC endorses the *Dietary Guidelines for Americans* developed by the U.S. Department of Agriculture and U.S. Department of Health and Human Services (2020). The guidelines are comprehensive and outline various ways to improve nutrition across the lifespan. Generally, the guidelines encourage individuals to limit sugar and alcohol, and consume ample calcium in the form of low-fat or fat-free dairy products. Maintaining optimal calories is also promoted. Additionally, the CDC (2022c) highlights three initiatives in support of family based healthy weight programs. These include the Childhood Obesity Research Demonstration Projects (CORD), the Clinical and Community Data Initiative (CODI), and COMMIT. All these programs aim to provide low-income families with evidence-based healthy weight programs but are limited by government and organizational funding.

The U.S. Preventive Services Task Force (USPSTF, 2018) recommends clinicians counsel their patients with obesity or refer them to specialists. The Task Force also suggests that clinicians provide general wellness interventions, like increasing physical activity and

consuming healthy food. However, patients are rarely counseled on their weight in the primary care setting, and the rates of weight-based behavioral counseling have been declining in recent years (Antognoli et al., 2017).

In January 2023, the AAP published a new clinical practice guideline regarding the treatment and management of children and adolescents with obesity. The guideline is comprehensive and reviews everything from epidemiology and prevalence of obesity to motivational interviewing and treatment options. In their discussion of treatment, the AAP argues that structured pediatric obesity treatment programs reduce the risk of eating disorders. Additionally, the AAP highlights the challenges providers face in trying to deliver healthy behavior and lifestyle modification recommendations to their patients. These challenges include lack of specially trained clinicians, difficulty for families to maintain recurring follow-up appointments amidst a busy school and/or work schedule, and even discordance between parent and provider expectations for treatment. To combat this, they suggested implementing group-based counseling and clinic-community partnerships, both of which are active in many areas of the United States today. The authors touched upon pharmacotherapy as well as bariatric surgery as safe options in extreme cases of pediatric obesity refractory to intensive behavior and lifestyle changes. Through these modalities, data has supported healthy weight loss and improvement in obesity-related comorbidities.

Barlow and Expert Committee (2007) reviewed the convention of an expert committee in 2005 to address child and youth obesity. Experts across 15 national health care organizations developed anticipatory guidance for practitioners to educate their youth on overweight and obesity. The recommendations included annual assessment of weight status, dietary habits, and physical activity for all children. Further, the experts encouraged providers to discuss healthy

behavioral practices with families (e.g., limited screen time and fast food, encouraging family meals and consumption of breakfast). Interestingly, the experts also suggest more community involvement as a key to addressing the obesity epidemic. Specifically, they call on schools to offer more opportunities for physical activity.

Despite recommendations and practice guidelines set forth by credible organizations like the CDC, USPSTF, and AAP, no single approach has been implemented as a standard of care across the United States. The importance of screening for obesity annually is clear (USPSTF, 2018). However, once BMI is measured and weight status is determined, there is a lack of prescribed lifestyle changes (Antognoli et al., 2017). Therefore, this evidence-based practice project focuses upon implementing the FNPA screening tool in a primary care setting.

### **The Development of the FNPA Tool**

In 2001, the American Dietetic Association Foundation revealed their intention to take a meaningful stand against the obesity epidemic (Myers & Johnson, 2001). They started this journey by assembling a group of specialists in the following fields: child nutrition, public health, maternal health, consumer insight. They performed a systematic literature review to identify the main constructs positively associated with overweight and obesity (Ihmels et al., 2009). Based on this review, 10 constructs were selected and used to develop the original FNPA survey. The experts created at least two questions per construct and ultimately established a 21-question survey. Since 2009, the survey has been revised to include more current verbiage related to types of screen time and was condensed to just 20 questions (Peyer et al., 2020).

### **Application of the FNPA Tool**

Ihmels et al. (2009) disseminated the FNPA survey to parents of first-grade students among 39 urban schools. After obtaining 1,085 surveys, the researchers performed statistical

analysis of the results. They determined the constructs within the tool adequately capture risk factors correlated with childhood overweightness. Notably, they also found that overall scores were better indices of BMI than any one specific construct on its own.

James et al. (2013) conducted a cross-sectional study to observe the risk of childhood obesity among families in which the mother had obesity or overweightness. Additionally, the authors sought to determine the feasibility of using the FNPA tool in a clinic setting. Follow-up evaluation was not a part of this study. Ultimately, the survey was completed by 98 mothers at an outpatient weight loss clinic. The participants were also given the appropriate recommendations from the AAP. The results demonstrated that higher obesogenic environments were associated with lower family income, lower education, African American race, Hispanic race, mixed races, and higher maternal BMI. The authors concluded that the FNPA survey is reliable for use in the clinic setting and demonstrates a relationship between elevated childhood BMI and mothers with obesity or overweight.

Tucker et al. (2017) sought to demonstrate the relationship between the FNPA tool and obesity severity in pediatric patients at a weight management clinic. Participants in this study were enrolled in a program called “FitKids360” through the clinic. This 7-week program was designed to treat underserved youth and their families. Over 500 participants enrolled. The study revealed a distinct predictive relationship between lower FNPA scores (higher obesogenic environment) and overweightness or obesity in youth.

Bailey-Davis et al. (2017) completed a randomized trial in which they disseminated the FNPA survey across 31 schools in Pennsylvania. As the authors explain, Pennsylvania schools perform mandatory BMI measurements of students in collaboration with trained school nurses. Results are communicated to parents with CDC guidance on BMI interpretation, risks associated

with higher BMIs, and a recommendation to follow-up with their primary care provider. In this specific study, some schools were randomly selected to also provide parents with online access to the FNPA survey and the accompanying education. The authors found parents who received the additional resources associated with the FNPA survey self-reported stronger intentions to change at least one construct-related behavior. Parents who had access to the FNPA survey also found the standardized BMI screening more useful compared to parents without access.

Herbenick et al. (2018) surveyed parents using the FNPA tool at a community-based health center in San Diego, California. Overall, 27 children, ages 4-11 were included in the screening process. All participants received AAP-endorsed recommendations after completing the survey and were scheduled for a follow-up visit in 2 months. Of note, 64% of participants were lost at follow-up. At the follow-up encounter, the researchers concluded that the average FNPA score improved from 64 to 70 out of 80 total points. Herbenick et al. concluded the FNPA survey may be used as a tool to personalize anticipatory guidance. Additionally, they found the tool to be a reasonable adjunct or alternative to BMI tracking.

In summary, the FNPA survey has repeatedly demonstrated reliability and validity both in the community and in the clinic setting (Bailey-Davis et al., 2017; Herbenick et al, 2018; Ihmels et al., 2009; James et al., 2013; Tucker et al., 2017). Consequently, it is a reasonable way to predict obesogenic environments in families. Therefore, the question is not whether the tool deserves a role in primary care. Rather, the question is how can it be incorporated more regularly into primary care and communities in a meaningful and feasible manner?

### **Measured Outcomes**

This evidence-based practice project aims to evaluate the feasibility of the FNPA survey in the adult primary care setting. For this project, feasibility is measured both objectively and

subjectively. Specifically, encounters were timed for efficiency, participants were given the opportunity to anonymously submit their opinions regarding the survey, and pre and postintervention scores were obtained.

Each of the initial participant encounters was timed, and total time was recorded as part of the data collection process. The intent was to determine whether the survey and interventions could be administered and discussed within a regularly scheduled wellness appointment. This specific clinic site allows for 20–40-minute appointments depending on patient complexity and extent of procedural care expected during the appointment. Secondarily, Medicare reimburses for 15-minute obesity counseling visits for eligible patients (License for use of current procedural terminology, 4th edition [Cpt®], 2023). For these reasons, a goal of less than 15 minutes was established for efficiency.

Additionally, an anonymous Survey Monkey questionnaire was disseminated to each participant following completion of the 6-week project. The intent of the Likert-based survey was to determine whether the FNPA was well received among participants, especially given the potentially vulnerable nature of weight management and family based obesity interventions.

Last, feasibility was measured by changes in total FNPA scores. This demonstrates feasibility by capturing how much or how little participants were able to mitigate obesity risk using the FNPA tool and associated interventions. Many studies have demonstrated the reliability of this survey across communities and weight-based clinics (Bailey-Davis et al., 2017; Herbenick et al., 2018; Ihmels et al., 2009; James et al., 2013; Tucker et al., 2017). However, this is the first study to implement the FNPA tool in an adult primary care setting.

## **Method**



This evidence-based practice project began as a stakeholder meeting with a university-affiliated nurse practitioner and physician at a busy Internal Medicine outpatient clinic in southern California. Once both stakeholders verbalized their support, a comprehensive Institutional Review Board process began through the clinic medical group. Following approval, participant recruitment occurred over three clinic days. Recruitment eligibility included the following: current patient of the nurse practitioner stakeholder, parent/guardian to children between the ages of 2–18 who live at home, can speak/read English or Spanish, and agreement to participate.

First, patients were greeted by the medical assistant for their scheduled appointment. Height and weight were recorded as is the standard of care at this site. During intake, the medical assistant provided patients with an IRB-approved flyer detailing the study. If they met criteria and agreed to participate, the survey was administered after their scheduled appointment. Participants spent less than 5 minutes completing the 20-question FNPA survey and providing their preferred contact information (i.e., cell phone, house phone, or email address). The survey was scored in real-time, and results were then shared with each participant. Anticipatory guidance was provided using the FNPA recommendations and customized according to the FNPA scores. For example, if a participant scored the lowest on the meal choices and screen time constructs, guidance would be directed at how to prepare healthier meals and limit screen time. Shared decision making was used to choose which intervention was best suited for each individual family. Each participant was informed he/she would be contacted in approximately 3 weeks to follow-up on the interventions provided, and again in 6 weeks to readminister the FNPA survey. Afterwards, the 5-year net change in BMI for each participant was calculated using the electronic health record.

At the initial 3-week follow-up, each participant was contacted by their preferred means of communication. A brief discussion reviewed any challenges regarding the interventions, and modifications were made as needed to support families in achieving their goals. At the final 6-week follow-up, participants were again contacted by their preferred means of communication. At this time, the FNPA survey was readministered electronically along with a link to an anonymous Survey Monkey questionnaire to report their opinions about the project (See Figure A3). Participants were also requested to share a current weight from their home scale for data trending purposes.

### **Results**

Sustainability was evaluated through the measures of feasibility: duration of initial encounter, participants' responses toward the survey and interventions, as well as pre and postintervention FNPA scores. Across the eight participants in this project, the average appointment duration was 8 minutes and 15 seconds.

Six of eight participants completed the online anonymous questionnaire at completion of the project (See Figure A3). Two participants noted no provider had discussed weight with them in the past, and one participant noted that no provider had discussed diet with them in the past. All participants reported their providers had previously discussed exercise habits with them. Last, all participants reported feeling comfortable discussing their FNPA results with the student and felt the selected interventions were realistic for them.

Preintervention FNPA scores averaged 57 out of 80 points. Postintervention FNPA scores averaged 61 out of 80 points, demonstrating a 4-point improvement (See Figure A4). Although it was not used as a measure of feasibility or sustainability, BMI scores were collected as well for tracking purposes. Preintervention BMI scores averaged 34.3, and postintervention BMI scores

averaged 32.5. Additionally, the average net change in BMI among the participants over the last 5 years was 1.6, with just one participant reflecting a total net decrease in weight.

### **CBA**

The costs associated with this project were minimal due to the work being completed by the project investigator (DNP student). However, few small costs would be associated with implementing this project at the clinic in the future. First, two NP's would be elected as superusers of the FNPA survey and charged with teaching the other clinic staff proper implementation. An estimated wage of \$75/hour for 2 hours per NP was calculated, totaling \$300 dollars. Additionally, the NPs would perform this training during the daily staff meetings that are already in place, thereby avoiding any additional fees associated with staff training outside of the workday. Printing costs were considered but not included in the cost benefit analysis because the printing would be completed in the clinic at no cost. The survey is two pages, and the interventions are listed on one page. One packet would be printed for each provider and laminated to allow for repetitive use among their patients. Any follow-up appointments via telehealth may provide the survey electronically.

Financial benefits of this project include both tangible and intangible gains. More specifically, Medicare Part B offers an average national reimbursement of \$23.04 for each 15-minute behavioral counseling appointment directed at obesity management (Cpt®, 2023). This service is free to patients with a BMI of 30 or greater. It includes one face-to-face visit every week for 1 month, followed by one face-to-face visit every other week for the next 5 months, followed by one face-to-face visit every month for the last 6 months (U.S. Centers for Medicare & Medicaid Services [CMS], 2022). Therefore, given the assumption that a 15-minute appointment costs approximately \$18.75 (based on an average hourly provider cost of

\$75.00/hour), and the national average CMS reimbursement of \$23.04/visit, this could result in a zero net charge to the clinic or the patient for the screening/intervention. It is worth mentioning that the Medicaid based obesity counseling options vary by state. In the state of California, CPT 99401 may be used for the preventive counseling of an individual and offers a reimbursement rate of \$12.94 (State of California, 2023).

Other cost savings associated with this project involve mitigated medical costs to the individual. As previously mentioned, the CDC (2022e) has reported medical costs for adults with obesity in the United States was \$1,861 higher than individuals without obesity in 2019. Therefore, an estimated \$1,861 could be saved per patient.

Ultimately, the program benefits are \$1,861/per patient and the total costs of the program are approximately \$300, which indicates for every dollar spent, there is a \$6.20 cost savings/avoidance.

### **Limitations**

This project was not without its limitations. Several participants commented the survey was difficult to follow for a couple of reasons. One issue was the printout version of the tool lost its alignment about halfway down the page and the responses were slightly misaligned with the questions. Another issue is that some of the questions were reverse scored and many participants caught themselves responding incorrectly to the questions for this reason. After this evidence-based practice project was underway, the FNPA creators updated their website to include a newer version of the tool. This version of the tool has improved graphics and color-coded rows to ensure the responses and questions line up well.

Another limitation discovered during the progression of this project was a lack of recruitment days for participants. The 1st week of January was carefully selected to pilot this

project with the intention that individuals would be more receptive to healthy lifestyle modifications after the holiday season. Unfortunately, the clinic site was closed for the first 2 days of the recruitment week; therefore, participants only had 3 days to join. Additionally, recruitment was limited to the patients of the stakeholder Nurse Practitioner, further restricting the participant population. This led to a small group of eight participants. Unfortunately, only seven of the participants completed the Survey Monkey questionnaire, and only six submitted their postintervention weights and FNPA tool responses.

It should also be noted the initial FNPA survey was completed by hand with paper and pencil during an in-office encounter. Any questions pertaining to the survey were addressed at that time. The second and final FNPA survey was completed electronically through Google Forms. Similarly, initial weights were collected in the office and final weights were self-reported from home. This was done intentionally to allow patients to complete their follow-up care without returning to the clinic and being billed for a sequential appointment.

### **Discussion**

Despite the limitations described, this project demonstrates incredible potential for continued future use. The patients felt comfortable completing the interview and interventions; the initial encounter was completed in under 10 minutes; there were decreases in overall weight among the participants; and overall FNPA scores improved over time. Therefore, implementing a family based obesity screening tool in primary care is feasible.

### **Implications for Nursing Practice**

The FNPA is a standardized screening tool which identifies obesogenic behaviors in families. This tool supports providers in the sensitive discussion surrounding weight management by encouraging shared decision making and alleviating the burden of navigating

this process blindly. The associated interventions may help prevent and reduce obesity prevalence rates among primary care patients. Future research can explore the implementation of the FNPA tool at larger clinics or institutions to further corroborate findings.

## References

Antognoli, E. L., Seeholzer, E. L., Gullett, H., Jackson, B., Smith, S., & Flocke, S. A. (2017).

Primary care resident training for obesity, nutrition, and physical activity counseling: A mixed-methods study. *Health Promotion Practice, 18*(5), 672–680.

<https://doi.org/10.1177/1524839916658025>

Bailey-Davis, L., Peyer, K. L., Fang, Y., Kim, J.-K., & Welk, G. J. (2017). Effects of enhancing

school-based body mass index screening reports with parent education on report utility and parental intent to modify obesity risk factors. *Childhood Obesity, 13*(2), 164–171.

<https://doi.org/10.1089/chi.2016.0177>

Cal: Medi-Cal Rates Information. *Medi-Cal Providers, 2023*, [https://files.medi-](https://files.medi-cal.ca.gov/Rates/rates_information.aspx?num=22&first=94799&last=99600)

[cal.ca.gov/Rates/rates\\_information.aspx?num=22&first=94799&last=99600](https://files.medi-cal.ca.gov/Rates/rates_information.aspx?num=22&first=94799&last=99600)

Centers for Disease Control and Prevention. (2022a, June 3). *Defining adult overweight &*

*obesity*. <https://www.cdc.gov/obesity/basics/adult-defining.html>

Centers for Disease Control and Prevention. (2022b, June 3). *About adult BMI*.

[https://www.cdc.gov/healthyweight/assessing/bmi/adult\\_bmi/index.html#OtherWays](https://www.cdc.gov/healthyweight/assessing/bmi/adult_bmi/index.html#OtherWays)

Centers for Disease Control and Prevention. (2022c, July 11). *CDC initiatives to prevent or*

*manage childhood obesity in healthcare*.

[https://www.cdc.gov/obesity/initiatives/index.html?CDC\\_AA\\_refVal=https%3A%2F%2F](https://www.cdc.gov/obesity/initiatives/index.html?CDC_AA_refVal=https%3A%2F%2F)

[www.cdc.gov%2Fobesity%2Fstrategies%2Fhealthcare%2Fcdc-initiatives.html](https://www.cdc.gov/obesity/initiatives/index.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fobesity%2Fstrategies%2Fhealthcare%2Fcdc-initiatives.html)

Centers for Disease Control and Prevention. (2022d, May 17). *Childhood obesity facts*. Centers for Disease Control and Prevention. Retrieved May 7, 2023, from <https://www.cdc.gov/obesity/data/childhood.html>

Centers for Disease Control and Prevention. (2022e, July 15). *Consequences of obesity*. <https://www.cdc.gov/obesity/basics/consequences.html>

Centers for Disease Control and Prevention. (2022f, December 14). *Defining childhood weight status*. <https://www.cdc.gov/obesity/basics/childhood-defining.html>

Hampl, S. E., Hassink, S. G., Skinner, A. C., Armstrong, S. C., Barlow, S. E., Bolling, C. F., Avila Edwards, K. C., Eneli, I., Hamre, R., Joseph, M. M., Lunsford, D., Mendonca, E., Michalsky, M. P., Mirza, N., Ochoa, E. R., Sharifi, M., Staiano, A. E., Weedn, A. E., Flinn, S. K., ... Okechukwu, K. (2023). Clinical practice guideline for the evaluation and treatment of children and adolescents with obesity. *Pediatrics*, *151*. <https://doi.org/10.1542/peds.2022-060640>

Herbenick, S. K., James, K., Milton, J., & Cannon, D. (2018). Effects of family nutrition and physical activity screening for obesity risk in school-age children. *Journal for Specialists in Pediatric Nursing*, *23*. <https://doi.org/10.1111/jspn.12229>

Ihmels, M. A., Welk, G. J., Eisenmann, J. C., & Nusser, S. M. (2009). Development and preliminary validation of a family nutrition and physical activity (FNPA) screening tool. *International Journal of Behavioral Nutrition and Physical Activity*, *6*(1). <https://doi.org/10.1186/1479-5868-6-14>



Iowa State University. (2009). *Family nutrition and physical activity (FNPA)*. Family Nutrition and Physical Activity (FNPA). Retrieved from <http://www.myfnpa.org/>

James, K. S., Matsangas, P., & Connelly, C. D. (2013). Childhood obesity risk in overweight mothers. *ICAN: Infant, Child, & Adolescent Nutrition*, 5(6), 375–382.  
<https://doi.org/10.1177/1941406413501865>

Lee, J. S., Jin, M. H., & Lee, H. J. (2022). Global relationship between parent and child obesity: A systematic review and meta-analysis. *Clinical and Experimental Pediatrics*, 65(1), 35–46. <https://doi.org/10.3345/cep.2020.01620>

U. S. Centers for Medicare & Medicaid Services. (2023). *License for Use of Current Procedural Terminology, 4<sup>th</sup> ed. (Cpt®)*. CMS.gov. <https://www.cms.gov/medicare/physician-fee-schedule/search?Y=0&T=0&HT=0&CT=0&H1=G0447&M=5>

Myers, E. F., & Johnson, G. H. (2001). ADAF takes first steps toward childhood healthy weight initiative. *Journal of the American Dietetic Association*, 101(5).  
[https://doi.org/10.1016/s0002-8223\(01\)00148-1](https://doi.org/10.1016/s0002-8223(01)00148-1)

U.S. Centers for Medicare & Medicaid Services. (Retrieved Nov 2022). *Obesity Behavioral Therapy: Obesity Screening Coverage*. <https://www.medicare.gov/coverage/obesity-behavioral-therapy>

U. S. Preventive Services Task Force. (2010). Screening for obesity in children and adolescents: US preventive services task force recommendation statement. *Pediatrics*, 125(2), 361–367. <https://doi.org/10.1542/peds.2009-2037>

State of California. (2022, February). *Medi-Cal rates*. Medi-Cal Providers. Retrieved March 8, 2022, from <https://www.medi-cal.ca.gov/>

Stetler CB. (2001). Updating the Stetler Model of Research Utilization to facilitate evidence-based practice. *Nursing Outlook*, 49(6), 272–279.

Tucker, J. M., Howard, K., Guseman, E. H., Yee, K. E., Saturley, H., & Eisenmann, J. C. (2017). Association between the Family Nutrition and Physical Activity Screening Tool and obesity severity in youth referred to weight management. *Obesity Research & Clinical Practice*, 11(3), 268–275. <https://doi.org/10.1016/j.orcp.2016.09.007>

U.S. Department of Agriculture, & U.S. Department of Health and Human Services. (2020). *Dietary guidelines for Americans 2020-2025*. Dietary Guidelines. <https://www.dietaryguidelines.gov/resources/2020-2025-dietary-guidelines-online-materials>

