

CHILDHOOD OBESITY CONVERSATIONS: MOTIVATIONAL INTERVIEWING  
IN THE BRIEF PRIMARY CARE VISIT

A Dissertation  
Submitted to the Graduate Faculty  
of the  
North Dakota State University  
of Agriculture and Applied Science

By

Nora Cecelia Mettler

In Partial Fulfillment of the Requirements  
for the Degree of  
DOCTOR OF NURSING PRACTICE

Major Department:  
Nursing

February 2024

Fargo, North Dakota

North Dakota State University  
Graduate School

---

Title

CHILDHOOD OBESITY CONVERSATIONS: MOTIVATIONAL  
INTERVIEWING IN THE BRIEF PRIMARY CARE VISIT

---

By

Nora Cecelia Mettler

---

The Supervisory Committee certifies that this *disquisition* complies with North Dakota  
State University's regulations and meets the accepted standards for the degree of

**DOCTOR OF NURSING PRACTICE**

SUPERVISORY COMMITTEE:

Dr. Heidi Sarrinen DNP, APRN, FNP-C

---

Chair

Dr. Abigail Brunsvold DNP, APRN, CPNP-AC/PC

---

Dr. Kerri Benning DNP, APRN, FNP-C

---

Dr. Lisa Montplaisir PhD

---

Approved:

March 18<sup>th</sup>, 2024

---

Date

Dr. Carla Gross PhD, RN

---

Department Chair

## ABSTRACT

Childhood obesity is a global epidemic that sets a child up for future health complications into adulthood. There is no current consensus on approaching weight-related conversations with patients and families. Nurse practitioners (NPs) are in a unique position to recognize obesity and initiate weight-related conversations with patients and families. Unfortunately, formative educational programs under-educate practitioners in the conduction of obesity conversations, so there is a decreased confidence and resulting avoidance of weight-related conversations.

This practice improvement project (PIP) aimed to increase provider confidence and utilize motivational interviewing techniques to initiate and sustain weight-related conversations with children and families with overweight or obesity. The PIP consisted of an hour-long educational video sponsored by the American Academy of Pediatrics (AAP) electronically sent out to new family practice providers in a Nurse Practitioner Fellowship Program (NFPF) and experienced providers in the rural weight-management clinic. Pre- and post-surveys were employed to evaluate perceived confidence and utilization in clinical practice. Surveys also aided in understanding obesity education through formative and continuing education.

There were ten eligible participants, six from the NFPF and four from the weight management clinic. The PIP had a total of three participants who were all from the weight-management clinic. There were no participants from the NFPF. Through descriptive statistics, the co-investigator found that 2/3 of respondents had increased levels of perceived confidence regarding weight-related conversations with children and families with overweight or obesity. One participant indicated weight-related conversational training in formative schooling and all respondents reported weight-related conversational training through continuing education. One participant completed the one-month follow-up survey. The participant indicated he/she had

implemented techniques presented in the video, but a larger population size is needed to make the results more meaningful.

Although the results supported the purpose of the PIP, the co-investigator would recommend further research targeting primary care practitioners to determine the need for further education in the primary care setting. Although limitations existed, the education and delivery method met the needs of the participants. The co-investigator recommends implementing weight-related conversation education into primary care formative education and encourages practicing practitioners to seek out continuing education regarding weight-related conversations with patients and families.

## **ACKNOWLEDGMENTS**

This dissertation project for the North Dakota State University's (NDSU) Doctor of Nursing Practice (DNP) program was an opportunity to learn and grow as a practitioner in the skills learned throughout the DNP program. This project utilized many resources, which I would like to acknowledge. The chair of my committee, Dr. Heidi Saarinen, was not only a wonderful resource during the project but also a much-needed mentor throughout the DNP program. She is the reason I finished this project and completed the program. I would also like to recognize the other members of my committee: Dr. Abigail Brunsvold, Dr. Kerri Benning, and Dr. Lisa Montplaisir. This project would not have been possible without the support and participation of the Essentia Health weight-management clinic and the clinic manager and nurse practitioner fellowship program coordinator, Deb Steen, who distributed and promoted the project to potential participants.

## DEDICATION

To God the Almighty—you placed on my heart the gift of service to others. Thank you for guiding me through this program and filling my heart with love through my family. Nothing is more important than you.

To Joe—thank you for your continued support throughout this whole process. Thank you for the daycare pick-ups, daddy dates when mommy needed to study or write, the comforting hug of encouragement when thoughts of quitting came to my mind, and for leading our family. Thank you for being my person. I am eternally grateful to God for placing you in my life.

To Sophia—you have been on this journey with me since you were born. You have always been my motivation for finishing. I want you to know that nothing is out of your reach if you work hard and love what you do. You are going to move mountains baby girl. I cannot wait to see what God has planned for your life.

To Dr. Saarinen—you are the sole reason I am finishing the program. Your willingness to answer all my questions and pray with me through some dark days did not go unnoticed. I could not have done this without your support and compassion. I am forever in debt to you.

Thank you to my family and friends who were my cheerleaders throughout this program and continue to be throughout my life. Thank you to all my professors and preceptors for the shared knowledge and encouragement. You helped form me into the nurse practitioner I am today.

## TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGMENTS .....	v
DEDICATION.....	vi
LIST OF TABLES.....	x
LIST OF FIGURES .....	xi
CHAPTER 1. INTRODUCTION.....	1
Background and Significance.....	1
Statement of the Problem .....	3
Purpose of the Project.....	3
Objectives .....	3
CHAPTER 2. LITERATURE REVIEW .....	5
Review of Related Literature.....	5
Introduction .....	5
Prevalence of Childhood Obesity.....	5
Communicating Weight Status Using BMI Charts .....	6
Risk Factors of Childhood Obesity .....	8
Parental Perspective.....	10
Perspectives of Practitioner .....	13
Obesity Bias.....	13
Education Gaps.....	17
Practitioner Practice Barriers.....	19
Motivational Interviewing.....	21
Goals for the Future.....	24
Nurse Practitioner Practice .....	26

Theoretical Framework .....	26
Adult Learning Theory .....	26
CHAPTER 3: METHODS.....	29
Overall Project Design .....	29
Implementation.....	29
Iowa Module.....	29
Conclusion.....	35
CHAPTER 4: RESULTS .....	36
Summary of Results .....	36
Objective One.....	45
Objective Two .....	50
Objective Three .....	51
CHAPTER 5: DISCUSSION AND RECOMMENDATIONS .....	53
Interpretation of Results .....	53
Limitations.....	55
Recommendations .....	57
Implications for Practice.....	57
Implications for Future Research .....	58
Application to the Nurse Practitioner Role .....	59
REFERENCES .....	60
APPENDIX A. APPROVAL FOR EDUCATIONAL VIDEO USE .....	71
APPENDIX B. IOWA MODULE APPROVAL .....	72
APPENDIX C. NDSU IRB APPROVAL .....	73
APPENDIX D. ESSENTIA HEALTH IRB APPROVAL.....	74
APPENDIX E. PRE-SURVEY QUESTIONNAIRE .....	75



APPENDIX F. POST-SURVEY QUESTIONNAIRE.....	93
APPENDIX G. ONE-MONTH FOLLOW-UP SURVEY QUESTIONNAIRE .....	102
APPENDIX H. EXECUTIVE SUMMARY.....	103

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1. Educational demographics. ....	37
2. Responsibility for Talking about Childhood Obesity.....	38
3. Personal Awareness Pre-Conversation. ....	40
4. Weight Bias Assessment.....	42
5. Overall Perceived Confidence in MI.....	45
6. Perceived Confidence of Weight Conversation Components.....	47
7. Prior Types of Obesity Education Completed.....	50
8. Conversation Preparedness. ....	51
9. PIP Overall Comments. ....	52

## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1. Negative feedback loop associated with childhood obesity (Haqq et al., 2022) .....	16

## CHAPTER 1. INTRODUCTION

### Background and Significance

The World Health Organization (WHO) states that obesity has “nearly tripled” worldwide since 2017 (World Health Organization [WHO], 2021, para. 1). Obesity is no longer a high-income country problem but has affected low-income countries, such as Africa, which saw a 24% increase in obesity rates since 2000 (WHO, 2021). The Centers for Disease Control (CDC) defines overweight as a body mass index (BMI) between the 84-95 percentile and obesity to be a BMI greater than the 95th percentile (Centers for Disease Control and Prevention [CDC], 2022c). A goal of *Healthy People 2030* is to reduce overweight and obese individuals by increasing healthy eating and physical activity. Still, none of the related seven stated objectives are being met (U.S. Department of Health and Human Services, n.d.).

Childhood obesity has reached epidemic numbers and has become an increasing concern for healthcare professionals in the United States. For children 5-19, overweight is a BMI “greater than one standard deviation above the WHO Growth Reference median” and obese is “greater than two standard deviations of the WHO Growth Reference median” (WHO, 2021, section 4). Thirty-nine million children under the age of five in 2020 were categorized as overweight or obese. The prevalence of obesity among children in the United States aged 2-to 5-year-olds between 2017-2020 was 12.7% with greater prevalence in minority populations and 20.7% among 6-to 11-year-olds (U.S. Department of Health and Human Services, 2021).

Rural America is not exempt from the childhood obesity epidemic despite increased rates of physical activity in rural children (Contreras et al., 2020). According to Contreras et al. (2020), rural youth are 30% more likely to be obese or overweight compared to urban youth. Some theories to explain this discrepancy include financial hardship, poor mental health, reduced

access to preventative care, and food insecurity (Contreras et al., 2020). The Center for Disease Control (2016) reports 14% of all children ages 2 through 4 who receive services through the Women, Infants, and Children (WIC) program in North Dakota are obese. The Robert Wood Johnson Foundation (2023) ranks North Dakota #10 for obesity in 2–4-year-olds at 15.9%, compared to the national average of 14.4%. North Dakota ranks #18 for obesity present in 10-17-year-olds at 15.1% which is below the national average of 17% (Robert Wood Johnson Foundation, 2023; Robert Wood Johnson Foundation, 2024). National data indicates 22.2% of children ages 6-11 are considered obese (CDC, 2022b). There is limited data associated with the age group of 4-10-year-olds due to collection methods and the fact most childhood obesity research targets the infant years or the ages past preschool.

Multiple complications manifest in adulthood stemming from childhood obesity including hypertension, cardiovascular disease, sleep apnea, asthma, joint stiffness, and Type II Diabetes Mellitus (Renales et al., 2021). Children who have obesity not only suffer physical factors but also psychological factors as they are subjected more to bullying and tend to be socially isolated and depressed (Durbin et al., 2018). Childhood obesity rarely has a genetic or endocrine component but manifests due to an imbalance of nutrition and physical activity (Henderson, 2021). Due to the imbalance of nutrition and physical activity, modifiable diet-related factors (foods, dietary patterns, eating behaviors) are pertinent to decrease rates of obesity (Kim & Lim, 2019).

Primary care practitioners are in the perfect position for early intervention, assessment, and treatment of childhood obesity as they see children most frequently during the first five years of life at well-child visits (Henderson, 2021). Practitioners can be influential in the trajectory of children's weight by identifying children with significant risk factors and providing anticipatory

guidance for parents managing and maintaining nutrition from infancy to early childhood (Henderson, 2021). This can only be accomplished if the primary practitioner feels confident in initiating weight-related conversations with parents.

### **Statement of the Problem**

The increase in childhood obesity rates globally and nationally, as well as the large presence of children who have obesity locally, needs to be addressed. Primary care practitioners are in a unique position to recognize obesity in their patients earlier and be able to guide and promote healthier lifestyles. Based on literature findings, a need exists to increase primary care practitioner knowledge and confidence in initiating weight-related conversations and utilizing evidence-based techniques to communicate with families of children with obesity. To address this need, this practice improvement project (PIP) will utilize an online educational video that demonstrates the weight-related communication technique of motivational interviewing to use with families of children with obesity.

### **Purpose of the Project**

The purpose of this PIP is to positively impact the reduction in the development of childhood obesity by increasing practitioner confidence in initiating weight-related conversations and increasing the use of evidence-based communication techniques with families with children who have obesity through an online educational video.

### **Objectives**

1. Increase rural nurse practitioner confidence in engaging in weight-related conversations with families surrounding childhood obesity options and management.

2. Assess rural nurse practitioner obesity conversation education received in formative and continuing education.
3. Assess practitioner intent to utilize motivational interviewing tools used in the educational video in their approach to weight-related conversations after the completion of the educational video session.

## CHAPTER 2. LITERATURE REVIEW

### Review of Related Literature

#### Introduction

A comprehensive literature review was completed to obtain evidence-based articles published after 2018 related to the PIP. Search terms included “*childhood obesity*”, “*primary care*”, “*nurse practitioners*”, “*practitioner education*”, “*rural health barriers*”, “*weight/obesity bias*”, “*motivational interviewing*”, and “*childhood obesity prevention*”. Nurse practitioner-specific articles relating to childhood obesity are limited, thus search criteria were expanded to healthcare providers practicing in primary care. Articles were limited to the United States. The target population was children with overweight or obesity less than 18 years old with no preexisting medical conditions such as cancer, heart disease, or diabetes. Children born prematurely were also excluded from the search due to tailored requirements for growth in the first two years of life. Search strategies included the use of databases including CINAHL, PubMed, and Cochrane database. Additional sources were identified from the reference lists of selected articles.

#### Prevalence of Childhood Obesity

Childhood obesity is at epidemic numbers globally with 17% percent of US children having obesity (Sanyaolu et al., 2019). According to the CDC (2022a), 12.7% of children ages 2-5, 20.7% of children ages 6-11, and 22.2% of 12–49-year-olds are classified as obese. Childhood obesity is more prevalent in Hispanic children (26.2%) and non-Hispanic black children (24.8%) compared to Caucasian children (14.1%). Non-Hispanic Asian children have the lowest prevalence at 9% (CDC, 2022a). Obesity rates are greater between boys and girls with a direct relationship between age and increasing obesity rates. Societal ideals, parental feeding practices,



body composition, and hormones may be contributory reasons for these gender differences (Shah et al., 2020). There is limited data associated with the age group of 4-10-year-olds due to collection methods and the fact most childhood obesity research targets the infant years or the ages past preschool.

There are varying conclusions as to whether living in rural communities increases a child's risk of obesity. One retrospective review in India of 1,803 school-aged children found the overweight (10.2%) and obesity (6%) prevalence of rural children to be statistically lower than urban overweight (16.6%) and obesity (7.4%) rates (Premkumar et al., 2019). Conversely, the National Survey of Children's Health 2011-2012 found that children living in rural areas were significantly more likely than urban children to be overweight or obese. When associated behaviors such as eating behaviors, dietary quality, physical activity, and screen times were analyzed between rural and urban preschoolers aged 3-5 years old, researchers found children from rural areas had more "obesity-promoting eating behaviors" and therefore higher BMz even with greater participation physical activity than their urban counterparts (Contras et al., 2020, pg. e640). One explanation is rural children manage their stress or are modeled stress management by their parents in the form of overeating. This aligns with the conclusion that parental eating habits form a child's eating habits (Mahmood et al., 2021). More research needs to be done to compare obesity prevalence in urban versus rural children.

### **Communicating Weight Status Using BMI Charts**

Primary care practitioners are in a unique position to prevent childhood obesity; however, many feel inadequate in initiating conversations in practice (Rhee et al., 2018). The USPTF (2017) recommends screening for obesity at the age of six whereas the AAP recommends screening using the BMI chart starting at two years of age (Hampl et al., 2023). BMI charts are

used as a screening and diagnostic tool to track the patient's weight over time. BMI is calculated using the height and weight of the patient. Once those are established, the patient is placed into one of the four categories: underweight, normal weight, overweight, or obese. The healthcare professional can then direct patient education and health promotion to the specific category the patient falls into.

The CDC (2022c) recommends using BMI as a screening tool and the integration of other factors such as diet evaluations, physical activity, family history, and other health screenings in the diagnosis of obesity during childhood. Although the BMI chart is the recommended screening tool, Gutin (2022) found providers perceived a child's BMI as an imprecise diagnostic of health and well-being as it can take on different meanings among children and families. The American Medical Association (2023) recently adopted a new policy clarifying the use of BMI in the clinical setting. The American Medical Association (AMA) recognizes the limitations the BMI chart has in the clinical settings among sexes, ethnic groups, age, and gender, and recommends it be used “in conjunction with other valid measures or risk” such as waist circumference, genetic and metabolic factors, and body composition (AMA, 2023, para. 2). Other researchers have come to the same conclusion, that BMI has a “high specificity and low sensitivity for detecting excess adipose” leading to an imprecise diagnosis (Hampl et al., 2023). The AAP also recognizes the limitations of BMI for use in clinical practice, but is still “recommended and central to the management and tracking of overweight and obesity in children” (Hampl et al., 2023).

Many practitioners feel constrained by the system requiring them to “put a name” on specific diagnoses rather than having the freedom to diagnose an obesogenic environment, prescribe a better diet with more exercise, or be reimbursed for an hour establishing a

relationship with the patient (Gutin, 2022, p. 6). Conversely, other researchers have found childhood BMI charts were “a good predictor for chronic disease later in life” (Khanna et al., 2022, pg. 4). Research is currently ongoing to determine the use of BMI in clinical practice.

## **Risk Factors of Childhood Obesity**

### ***Food Insecurity***

There is a disproportionate amount of obesity in rural areas which can be explained by increased poverty, poor diet quality with limited availability of fruits and vegetables, and an increase in adverse life events. There is limited evidence of a direct effect of food insecurity on the development of obesity. In a study of more than 28,000 children ages 0-4 and of various ethnicities, food insecurity was shown to affect parental feeding practices and styles, an increase in consumption of low-cost, high-energy-dense foods which led to increased obesity rates over time. (Gross & Mendelsohn, 2019). The increase was found to be related to an accumulation of unhealthy behaviors rather than causative for food insecurity. A systematic review studying the longitudinal association between food insecurity and childhood obesity also showed food insecurity affected parent and infant feeding habits which affected weight due to an accumulation of unhealthy behaviors (St. Pierre et al., 2022).

### ***Knowledge Deficit***

Having good nutritional knowledge includes knowing about “food intake and well-being, food intake and disease, foods signifying key sources of nutrients and dietary guidelines and references” (Quaidoo et al., 2018). Rural families are typically underserved concerning general nutritional education addressing the quality of food and eating behaviors of children (Contreras et al., 2020). Social media plays a large role in the influence of people’s dietary information. Every year, the International Food Information Council (IFIC) surveys the American people on

their food beliefs and health habits. In 2023, Facebook, YouTube, and Instagram were rated as the top platforms where food information was shared and viewed (International Food Information Council [IFIC], 2023). Sixty-eight percent of survey participants reported conflicting information on social media and six out of ten doubt the food choices they make as a result.

Vittrup and McClure (2018) conducted a questionnaire related to exercise, food, and lifestyle choices. The study concluded that parents are unaware of the recommended calorie intake and size of portions their children should be consuming, unable to identify what constitutes a healthy diet, and unaware of how big of an impact obesity has on the child, society, and the healthcare system. In 2021, 21% of parents with children under the age of 18 believe calories from fats are most likely to cause weight gain vs 12% in those without children (IFIC, 2021). Taste is the number one driving factor when buying food from the store followed by price with healthfulness in third (IFIC, 2023).

To identify if an increase in parental education would decrease the knowledge deficit and increase parental awareness of the obesity epidemic, Renales et al. (2021) conducted a study using a pre-and post-survey after an educational pamphlet about childhood obesity was given to parents whose child attended an after-school daycare facility. The conclusion was an increase in parents' ability to identify complications relating to childhood obesity and a positive increase in parental perception of their child's weight. Without practitioners understanding the knowledge deficits of parents and increasing education, parents will be unprepared to alter their false conceptions of childhood obesity and prevent the potential for positive outcomes (Renales et al, 2021).

A cross-sectional survey on parental health literacy and outcomes was conducted in Germany using the European Health Literacy Survey Questionnaire. Of the 4217 parent participants, 45.8% with children ages 6-10 showed problematic or inadequate health literacy (Buhr and Tannen, 2020). High parental health literacy was associated with higher-income families and older parental age. Higher health literacy in parents was found to be associated with “positive health behaviors in children” including healthier nutrition and more physical activity (Buhr and Tannen, 2020, pg. 1). More research is needed to identify and address the lack of parental knowledge related to childhood obesity.

### **Parental Perspective**

In a randomized controlled trial of 965 participants of diverse backgrounds, researchers found that 71.7% of parents accurately assessed their child’s weight, 24.7% underestimated, and 3.6% overestimated. (Brown, Howard, & Perrin, 2020). Contrary to this, a larger mixed-methods review in Australia with greater than 70,000 participants found that parents do not accurately perceive their child’s weight and often have few concerns regarding the weight of the child (O’Brien et al., 2022). Justifications from parents included a family history of obesity, comorbidity medications causing weight gain, the child is eating appropriately for height, and BMI is not a true indicator of weight status (O’Brien et al., 2022).

The lack of concern makes primary care interventions hard to implement as they may be perceived as unhelpful, irrelevant, or offensive. Inaccurate perceptions and lack of parental concern make provider-initiated weight conversations crucial to childhood obesity prevention. Practitioners may delay conversations to prevent awkward conversations or the possibility of offending patients. A survey investigating the type of conversation parents want between their provider and themselves regarding the weight of their child indicated parents prefer unoffensive

language including “at-risk weight”, “BMI is high”, “BMI is above 95%” and “unhealthy weight” (Faircloth et al., 2019). The terms “overweight” or “obese” were considered more offensive, but were also reported as more motivating for change. Faircloth et al. (2019) did not find the parental perception of the child’s weight to affect the offensiveness ratings.

### ***Parental Influence on Child Food Behaviors***

Parents act as role models for their children's future food habits and are responsible for the types of food their children consume during infancy and toddlerhood. During the first year of life, nutrition is the main interaction between the parents and child with breast or bottle feeding and at the end of the first year of life, the transition to family diet and meal behaviors begins. Moss et al. (2020) found a difference in fruit and vegetable consumption later in life when given as first food during the transition period. As the child grows and food preferences are identified, the responsibility of the parents shifts to what types of food are kept in the house (Vittrup & McClure, 2018). A review of parental dietary behaviors and practices on children’s eating habits found 70% of a child’s dietary behavior is based on parental dietary habits and exposure to fruits and vegetables in the first two years of life leads to an increase in consumption later in life (Mahmood et al., 2021). Thus, Moss et al. (2020) studied the relationship between fruit and vegetable consumption later in life to feeding behaviors in the first year of life. Researchers concluded breastfeeding was not associated with an increase in vegetable consumption, but greater than six months of breastfeeding led to higher fruit consumption than those breastfeeding for less than six months. Moss et al. (2020) also found the first complementary food of a fruit or vegetable was associated with a higher intake of fruits and vegetables later in life suggesting the first food not be cereal.

Although there is a limited number of studies, one major influence on child dietary habits is the establishment of family meals together. A review looking at the health effects of family meals found the more frequent the family meals the higher the intake of healthy nutrients and the decreased intake of lower-energy foods such as sugary carbonated beverages (Verhage et al., 2018). A structured meal time was also associated with more “food enjoyment and less fussy and emotional eating” (Verhage et al., 2018, pg. 97). The American College of Pediatricians (2021) also corroborate these findings and found family meals to also be associated with improved mental health, decreased screen time, improved nutrition, decreased obesity, and improved family relationships, all of which can help in the prevention of childhood obesity.

### ***Behavioral Factors***

Behavioral and nutritional practices of children also play a large role in childhood obesity. A meta-analysis of 199 articles with the target population being children between the ages of 5-19 found numerous links between behavioral and nutritional practices and increased weight gain in the target population (Poorolajal et al., 2020). The two greatest risks for childhood obesity were watching too much TV indicated by greater than two hours a day and not getting enough sleep. Both these factors were heightened when children had access to TV in their rooms. Eating breakfast every day and having enough physical activity were found to be most protective against weight gain (Poorolajal et al., 2020). Interestingly, the consumption of sweets and snacks was found to be associated with a decrease in obesity. A possible explanation is children usually consume sweets and snacks in between meals which decreases their appetite for meals leading to the consumption of fewer calories during meal times.

## **Perspectives of Practitioner**

A primary care practitioner will see a child 31 times in the first 21 years of life. Twenty-one of those visits will be in the critical period of the first five years of life. These preventative care visits not only monitor the growth and development of the child but also allow practitioners to discuss nutrition and guide parents in the health of their developing child (U.S. Department of Health and Human Services Administration, 2015). Practitioners recognize the importance of addressing childhood obesity during well-child visits and are well-positioned to help by emphasizing health promotion and disease prevention (Hersch et al., 2021).

There is not a current consensus on how healthcare professionals should approach weight-related conversations with patients and their families. In semi-conducted interviews completed with 20 Minnesota physicians, researchers found language and communication are critical in the weight management conversation, but there is not a “one-size-fits-all” approach. Thus, “unintended consequences may occur if the conversation is approached inappropriately” (Hersch et al., 2021, pg. 462). Physicians felt most comfortable addressing weight at well-child and 90% stated they varied their approach based upon the child’s age. In a review of best practices for communicating with families regarding weight, all communication, both verbal and non-verbal, should instill respect, trust, openness, and sensitivity and should be chosen with care. (McPherson et al., 2016).

## **Obesity Bias**

A child’s weight is a complex and sensitive topic for parents and is associated with stigma and negative perceptions. Primary care practitioners may defer obesity education and interventions because of their perceived belief parents will not implement them at home. This can be described as obesity bias which is “a negative, often discriminatory belief or behavior



based on the weight of an individual” (Hauff et al., 2019, p. 2). The two types of weight bias are implicit and explicit. Implicit bias is the unconscious response or the initial perceptions as being “bad” in an unintentional way, such as associating thin with being “good” and fat with being “bad”. Explicit bias is an intentional and deliberate thought/action on the conscious level (Fruh et al., 2019). Explicit bias can include blaming patients for their weight or categorizing patients as “lazy, less intelligent, unmotivated, medically non-compliant, slow or gluttonous” (Moore et al., 2022, p.1). Whether implicit or explicit, this stigma can be a significant barrier between patients and providers which leads to an increase in missed appointments, prevention of timely access to care, increased stress of the patient, and mistrust towards providers, as well as having a negative impact in patient engagement with their health (Roberts & Polfuss, 2022).

The formation of unbiased attitudes is not something formally taught in formational programs but is something to be gained from mentorship with clinical preceptors throughout the student’s education. A study evaluating the weight bias of nurse practitioner students’ clinical preceptors found most clinical preceptors engage in no weight bias (Hauff et al., 2020). Despite these positive findings and the requirement for the nurse practitioner students to complete weight bias lessons during their obesity management session, these students continued to have weight bias themselves. A systematic review and meta-analysis of 14 articles suggested a need for continued reinforcement in weight-bias reduction interventions in the professional nurse practitioner and challenged professional-level healthcare workers to change attitudes and beliefs about people with obesity (Moore et al., 2022).

According to Lawrence et al. (2021), no healthcare professional is exempt from having weight bias toward patients. Nurse practitioners have a reputation for their expertise in disease prevention, health promotion, and high-quality care and compared to their primary care

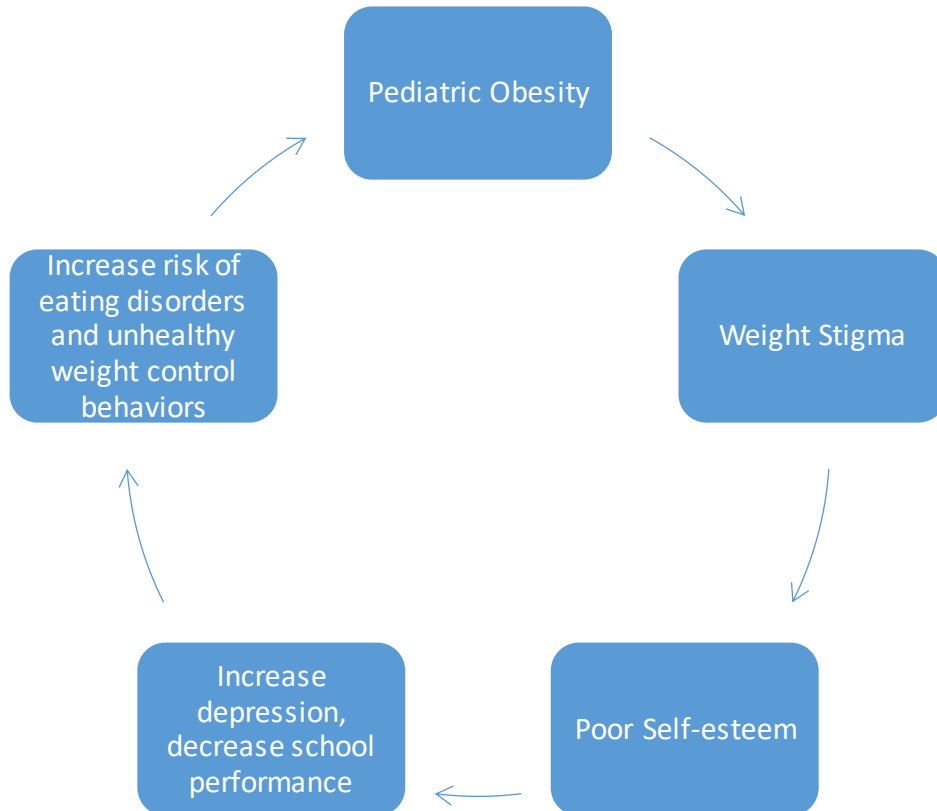
physician colleagues; nurse practitioners use the least stigmatizing language when communicating with patients about weight, physical activity, eating habits, and increased BMI (Hauff et al., 2020). Despite this, weight bias is ingrained into society with true change only coming with the change in social norms (Moore et al., 2022). By increasing awareness of obesity bias and using patient-first language, practitioners can improve communication that makes patients more comfortable and willing to participate in healthy lifestyles and provide optimal care for the obese population (Hauff et al., 2019).

Pediatric patients who have obesity have a higher risk of being stigmatized for weight compared to their peers with common expressions of this stigmatization being teasing, bullying, and victimization (Robert & Polfuss, 2022). These expressions of stigmatization lead to increased rates of depression, anxiety, body dissatisfaction, suicidal thoughts, a decrease in school performance, and an increased risk of unhealthy weight control behaviors such as binge eating. All these factors lead to an increase in weight (Haqq et al., 2022).

A negative feedback loop identified in childhood obesity creates a cyclical pattern of symptoms resulting in an overall increase in obesity (Figure 1).

**Figure 1**

*Negative feedback loop associated with childhood obesity (Haqq et al., 2022)*



There are a variety of sources, including family, peers, media, educators, and healthcare providers that express weight bias toward children with obesity (Haqq et al., 2021). Parents with obesity themselves tend to have lower weight bias towards their children with obesity, but often receive weight bias statements from other family members blaming parents for the health status of their children which can increase stress and relationship strain within the family leading to poorer outcomes (Robert & Polfuss, 2022).

## ***Combating Weight Stigma***

Healthcare providers are not exempt from weight-biased thoughts and actions. To combat implicit and explicit biases, practitioners need to strive to avoid weight bias in the healthcare setting by taking the first step of not oversimplifying the disease (Haqq et al., 2022).

Recognizing and educating parents and children that obesity requires complex and lifelong management can help reduce the stigmatization of a “lazy” patient. Healthcare professionals must challenge stereotypes and use people-first language when communicating with patients and colleagues helping patients be more trusting of healthcare providers (Robert & Polfuss, 2022).

Healthcare settings need to improve in functionality to accommodate those with obesity including appropriate blood pressure cuffs, larger gown sizes, scales in private areas, and larger, comfortable chairs in the examination rooms (Fruh et al., 2019). All these factors can help aid in decreasing weight bias in the healthcare setting and improving outcomes for children with obesity.

## **Education Gaps**

Practitioners report receiving insufficient education in their formational programs related to the treatment of obesity in childhood and do not feel confident in their ability to adequately care for overweight or obese patients (Ockene et al., 2020). There is limited literature about obesity education content in any graduate-level professional healthcare education track, but even less specifically in professional nurse practitioner preparation programs.

One study examined obesity content in educational facilities throughout the United States and found the overall faculty attitudes towards obesity education relied on educating the patient to maintain weight loss through healthy eating and physical exercise (Rogge & Merrill, 2012). Moderate and high content emphasis was on economic disparities, comorbidities, benefits of

physical exercise, behavioral and psychological influence on obesity, the importance of weight loss, and poor nutrition contribution related to overeating and portion control. Subsequently, little emphasis was found to be placed on genetics, hypothalamic regulation of hunger, indications for and complications from bariatric surgery, nondietary stimuli, barriers to clinical facilities, and characteristics of commercial weight loss programs (Rogge & Merrill, 2012).

A meta-synthesis of 13 qualitative studies was performed to examine barriers to healthcare professionals discussing child weight with parents. Healthcare providers reported they knew the dietary recommendations, but only broadly, and did not feel confident in the specifics (Bradbury et al., 2018). The personal weight challenges of the providers were also a perceived barrier to weight-related conversations. Healthcare providers engaging in regular weight-related conversations were more likely to report feeling confident speaking to parents.

The beginnings of weight bias may be started in formative education courses as most of the health care faculty believe nothing has “any real efficacy” and may lead to why there is such a low emphasis in formative course work as there is no way to “fix the problem” (Rogge & Merrill, 2012). This gap in education means practitioners will need to seek out additional training to be effective in the treatment and management of childhood obesity (Ritten & LaManna, 2017). Increasing training programs for professional nurse practitioners related to obesity bias, prevention, and management will help combat negative factors weight bias brings to the patient and subsequently the health care system.

Nurse practitioners are not the only ones with a lack of obesity training during their formative education. A systematic review of 27 studies from three different countries was conducted on medical schools, residencies, and fellowships to explore the obesity curriculum from 2005 to 2015 (Mastrocola et al, 2020). Results indicated inconsistencies in “behavioral

change coursework” and many of the articles did not state how many total hours were spent on educational interventions.

One response to the lack of education for healthcare professionals has been the development of the Obesity Medicine Education Collaborative (OMEC). OMEC was formed in 2016 whose mission is to “disseminate comprehensive obesity medicine education across the continuum” of healthcare-related fields (Obesity Medicine Association [OMA], 2023, para. 1). The six main themes of the educational modules to be used in undergraduate and graduate education include patient care and procedural skills, medical knowledge, practice-based learning and improvement, professionalism, and systems-based practice (OMA, 2023). Healthcare professionals also can view modules for continuing education credits; however, a barrier might be cost as most of the modules require a membership and course fee. Several professional organizations support the use of these educational modules including the American Association of Nurse Practitioners.

### **Practitioner Practice Barriers**

Even though practitioners express urgency for addressing childhood obesity promptly, practitioners also report barriers of lack of knowledge and confidence, lack of time, lack of resources in the office and community, and lack of motivation on behalf of the parents (Rhee et al., 2018). There is a lack of reimbursement for the prevention and treatment of obesity (Skinner et al., 2018). The more barriers a provider has, the less likely they are to engage in weight-related conversations, draw laboratory work, or refer to specialists (Darling et al., 2018).

Evidence-based interventions to help reduce obesity are available, yet the United States continues to underinvest in policies supporting these interventions (Emmons & Gandelman, 2019). The current USPTF (2017) guidelines recommend screening for obesity in all children six

years and older and offer or refer them to behavioral interventions to improve weight status. In a cross-section study of 1,023 clinicians using data from 2017, it was found that 83.6% of participants were screening for obesity in greater than 75% of their visits. Fifty-three-point-five percent provided necessary referrals which was increased when providers had hospital teaching privileges (Imoisili et al., 2019). This indicates screening for obesity is high, but the next step of referring patients for intervention is lacking.

Effective treatment is also complicated by a lack of reimbursement and problems with coverage for uninsured or underinsured patients with overweight and obesity (Ritten & LaManna, 2017). The Affordable Care Act has a mandate for the coverage of obesity treatment, but the coverage varies between the states (National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Food and Nutrition Board; Roundtable on Obesity Solutions., 2017). This variability is also seen in coverage of obesity prevention and treatment under Medicaid. These variations mean most patients are limited in obesity treatment consistent with national guidelines (Ritten & LaManna, 2017). Practitioners are also limited to the diagnosis and codes used to describe a patient's health and voice frustration in being unable to prescribe a better diet, more exercise, or "seek reimbursement for using an hour to better know a patient" (Gutin, 2022, p. 7). System-level changes, including integrative obesity care with health coaches and case managers, and a team approach are needed to help practitioners provide effective weight management for children (Rhee et al., 2018).

Although minimal, steps have been made to increase obesity coverage nationwide. The Center for Disease Control Childhood Obesity Research Demonstration (CORD) 3.0 project is a continuation of a "whole-community approach to address childhood obesity" by focusing on effective healthy weight programs that are sustainable and cost-effective for children from low-

income families (CDC, 2023, para. 5). Participating hospitals implement an evidence-based, “family-centered, weight management intervention for children” while also collaborating with Child Health Insurance Programs and Medicaid in hopes of sustainability and routine practice (CDC, 2023, para. 5). CORD 3.0 is currently ongoing in five metro hospitals throughout the United States. Future study results from this initiative could greatly impact future reimbursement of childhood obesity interventions in primary care. Future policies should consider expanding CMS reimbursement in primary care for supportive professions including psychologists and dietitians and creating initiatives for an interdisciplinary approach to overweight and obese management (Ockene et al., 2020).

Practitioners also report a deficiency in time during office visits to engage in meaningful conversations and management of obesity. In semi-constructed interviews with 20 Minnesota physicians, researchers found 70% of participants were more likely to delay weight conversations to stay on track with their schedule (Hersch et al., 2021). Engaging in weight-related conversations takes time for both the practitioner and the patient which may end up in the prioritization of more important issues (Hauff et al., 2020). Patients who have obesity require longer, more frequent appointments that may not be compensated appropriately. Uninsured patients are at a higher disadvantage for obesity as they usually lack a primary healthcare provider meaning a lack of relationship with a primary care practitioner (Ritten & LaManna, 2017). Effective interventions that are not time-consuming are needed in primary care to best serve the time constraints of office visits and well-child visits.

### **Motivational Interviewing**

The original form of obesity prevention education was the use of counterarguments against the client in hopes of eliciting a behavioral change (Gates & Amin, 2022). This resulted



in an overlook of the complex disease process, an increase in weight bias and shaming, and an overall negative impact on the patients' health with no change in behavior. Counter to this original form is the practice of motivational interviewing.

Motivational interviewing (MI) was first used in patients with alcohol addiction and is rooted in counseling and behavioral psychology (Gates & Amin, 2022). The MI process is now used in multiple settings with a variety of patients. MI is a patient-centered and goal-oriented discussion that leads the patient towards behavioral change by deep self-reflection for motivations to change. The discussion should be empathetic and non-judgmental while leading the patient towards small, attainable goals on a set timeline. There are four main components of MI including engaging, focusing, evoking, and planning (Gates & Amin, 2022)

### ***Components***

The first step in MI is engaging the patient in conversation. This step builds a relationship of trust in a non-judgmental manner between the practitioner and patient and is an important part of the weight loss process. Primary care practitioners have the unique opportunity to form long-term relationships with their clients, yet many report a fear of offending the parent or children and are concerned about bringing up weight-related topics in the office visit, especially to children of parents who also struggle with obesity. To help combat this, practitioners use visual charts, such as the BMI chart so families can have a visual of their child's weight (Adbin et al., 2021). The practitioner's role during this step is to conduct reflective listening and refrain from providing solutions to the patient.

The second step in MI is focusing. This is where the patient makes a specific goal to attain. During this step, the practitioner should not force the behavioral change too quickly, but allow the patient to arrive at the behavioral change on their own. The practitioner could ask

“Why is being healthy and looking better important to you?” to steer the reader toward the root cause of wanting to make the behavioral change and eliciting an attainable goal related to their reason. Guiding questions, such as “*What is important to you?*” and “*Why is that important to you?*” should be asked by the practitioner to allow the client to reach their goal. If the practitioner tells the patient what to do, a behavior change may not take place (Gates & Amin, 2022).

The third step is evoking the patient’s reason for the behavioral change and addressing the question of why the patient thinks they should perform the behavioral change. This can take a lot of counter-questions from the practitioner to solidify the root motivation. Asking the patient “What is important to you” and engaging the parent/guardian in the conversation by asking “Is there anything else behind why you feel it is important to be healthy and look better” will help with the process needed to complete this step. The patient may verbalize a lot of negative thoughts, but the practitioner needs to empower the patient and make them feel in control (Gates & Amin, 2022). Practitioners should ask the patient if they can share potential reasons for the behavioral change before suggesting any, thus keeping the patient in control of the conversation.

The final step in MI is the planning stage. This stage answers the question of how the behavioral change will come about and is only reached after significant engagement between the patient and provider (Gates & Amin, 2022). Replacing food rewards with a healthier option, limiting portions, or substituting food rewards for non-food rewards such as a game with mom or an extra story is a key factor in goal behavior attainment. The result of this step is a plan of action moving forward that was directed by the patient.

### ***Efficacy in Practice***

Few successful interventions have been proven effective in childhood obesity prevention and the subsequent consequences in adulthood. There are mixed results from the literature search about the effectiveness of MI in the prevention and treatment of childhood obesity. One systematic review found MI to have an effective impact on the behavioral and clinical outcomes in children ten years and younger with obesity when directed at parents (Suire et al., 2020). Although physical measurements and proportions were not significantly different, there was a significant difference in a child's eating habits with an increase in fruit and vegetable consumption after parents participated in MI. Suire et al, (2020) also found an increase in physical activity and a decrease in screen time use which over a longer period could be influential. MI stand-alone treatment has also been effective in changing parental behavior related to childhood obesity thereby leading to a reduction in the child's weight (Gates & Amin, 2022). Parents who are given feedback using MI have an increase in satisfaction with healthcare support (Ames et al., 2020). Contrary to the above findings, a meta-analysis showed that MI alone is not effective in reducing obesity in children, but did "help adolescents engage effectively with other treatments" that more directly affect nutrition, physical activity, and quality of life (Vallabhan et al., 2028, pg 12). There were limitations within the study including small sample size, delivery, and duration of MI interventions (Vallabhan et al., 2018).

### **Goals for the Future**

Childhood obesity is on the rise despite systematic reviews and meta-analyses showing a variety of interventions do help. Individualized care in obesity prevention should be utilized as not one size fits all. Sixty-four percent of nurse practitioners believe their obesity prevention

practices could be improved with further training, specifically on how to avoid offending patients and families (Hauff et al., 2020).

The Institute of Medicine released its Early Childhood Obesity Prevention Policies in June 2011. An updated version is not available. Although it is recognized that parents are the primary role models regarding the nutrition of their children, the goals are guidance for those who reside outside of the home including healthcare professionals, child-care workers, and directors of federal childcare and nutrition programs. The goals of the Institute of Medicine are as follows (McGuire, 2012).

1. Assess, monitor, and track growth from birth to age five years.
2. Increase physical activity in young children.
3. Decrease sedentary behavior in young children.
4. Help adults to increase physical activity and decrease sedentary behavior in young children
5. Promote the consumption of a variety of nutritious food and encourage and support breastfeeding during infancy.
6. Create a healthful eating environment that is responsive to children's hunger and fullness cues.
7. Ensure access to affordable healthy foods for all children.
8. Help adults to increase children's healthy eating.
9. Limit young children's screen time and exposure to food and beverage marketing.
10. Use the social market to provide consistent information and strategies for the prevention of childhood obesity in infancy and early childhood.
11. Promote age-appropriate sleep durations among children.

Implementation of the Institute of Medicine Early Childhood Obesity Prevention Policy goals will be a societal effort, but “the urgency of the issue of obesity in young children demands that action be taken now with the best available evidence” (McGuire, 2012, p. 57).

### **Nurse Practitioner Practice**

Preventative recommendations in the literature include the promotion of healthy behaviors, motivational interviewing, multi-disciplinary care, education with technology, and structured weight management (Henderson, 2021). Focusing on nutrition and healthy habits during childhood will allow the development of healthy growth and self-regulation in adulthood (Brown & Perrin, 2018). Research indicates prevention interventions are needed to address healthy eating behaviors and disparities before kindergarten (Haboush-Deloye et al., 2021). By increasing the knowledge and confidence of weight-related conversations of practitioners in rural practice, a positive impact can be made.

### **Theoretical Framework**

#### **Adult Learning Theory**

The Adult Learning Theory (ALT) was selected as the theoretical framework for this PIP. The ALT was developed by Malcolm Knowles to distinguish self-directed adult learning from authoritative child learning (Kuttner, 2022). Six assumptions make up his theory. Using these assumptions will provide the basis for an educational session regarding childhood obesity prevention by increasing motivational interviewing skills and knowledge.

#### ***Assumption One***

The first assumption is adults need to know pertinent and relevant information (Kuttner, 2022). Motivational interviewing has the potential to make a big impact on childhood obesity, yet time and education are reported barriers to weight-related conversations (Hauff et al., 2020).

The educational video using MI as a demonstration of approaching weight-related conversations was created by the AAP with the most current and up-to-date information available for practicing practitioners. The educational video will help practitioners become educated on an effective way to approach weight-related conversations during the brief primary care visit. Receiving this education will help practitioners to maximize obesity reduction in the time allowed during visits. The nurse fellowship liaison, who is also the manager of the rural weight-management clinic, is very interested in this education for the fellowship program practitioners and rural weight-management clinic healthcare providers.

### ***Assumption Two***

The second assumption is adults are self-directed and in charge of their learning needs (Kuttner, 2022). “Sixty-four percent of nurse practitioners believe they could improve their obesity management practices through further training” (Hauff et al., 2020, pg. 523). The educational video is approximately one hour long and will be provided online so participants can view that material at a time convenient for them. The PIP is voluntary so participants have autonomy in choosing to further develop their confidence in using MI as an effective technique for approaching weight-related conversations during short office visits.

### ***Assumption Three***

Adults tend to draw on previous life experiences when learning new knowledge (Kuttner, 2022). Healthcare professionals encounter MI every day with patients struggling with obesity, yet report difficulty in initiating weight-related conversations (Abdin et al., 2021). This educational video will help to better participants' MI techniques to provide more effective results for their patients. The video was produced by the AAP and draws on the knowledge of well-educated collaborators. The post-survey will allow for self-reflection and the one-month post-

intervention follow-up will allow for critical thinking about how the new knowledge changed or did not change the participant's approach to weight-related conversations.

#### ***Assumption Four***

Assumption four is adults are ready and willing to learn (Kuttner, 2022). MI is shown to be an effective and cost-effective tool for preventing childhood obesity (Woolford et al., 2022). The participant will assess if the PIP topic of weight-related conversations is something they wish to participate in to gain valuable techniques related to their approach to obesity conversations with patients. The educational video is an online format and about an hour long for practitioners to access at their convenience and complete if they choose to do so.

#### ***Assumption Five***

Adult learners are motivated by extrinsic factors and intrinsic reasons (Kuttner, 2022). Participants will have a chance to win one of two \$10 gift cards after the first part of the project, and one of two \$25 gift cards after the completion of the one-month follow up which will provide external motivation for the participants. A potential increase in knowledge and confidence to initiate weight-related conversations after the educational video could increase job satisfaction for participants.

#### ***Assumption Six***

Adult learners are engaged in problem-centered learning (Kuttner, 2022). The organizational liaison at the Midwest hospital was very excited about this education being provided. MI is something practitioners encounter daily so MI techniques is something useful for practitioners no matter how long they have been in practice. A variety of disciplines use MI in various forms making it applicable to anyone in the healthcare field and beyond.

## **CHAPTER 3: METHODS**

### **Overall Project Design**

The AAP evidenced-based weight-related conversation video utilizing MI was disseminated electronically to nurse fellowship residents and rural weight management employees at a Midwest organization. Pre- and post-survey data was collected to determine the confidence of participants before and after the educational video to determine effectiveness. Quantitative data was gathered and analyzed by the co-investigator using Qualtrics tools. Open-ended questions were used to gather work experience, prior obesity education completion, and intent to initiate weight-related conversations. Demographics were not collected from participants to prevent a breach of confidentiality with the small sample size and for indifference of the information to the stated objectives. Open-ended questions provided feedback to the co-investigator and NFPF chair for future implementation in upcoming residency cohorts.

### **Implementation**

#### **Iowa Module**

The Iowa model is an evidence-based practice model that promotes excellence in healthcare and was used in the implementation of this practice improvement project (University of Iowa Hospitals and Clinics, 2023). The steps for the Iowa Model are outlined below. Permission to use the Iowa Model was obtained before the implementation of this PIP. (Appendix B)

#### ***Triggers***

This PIP was developed after the identification of a clinical problem. The co-investigator brought the project to the attention of the principal investigator after exposure to patients struggling with obesity and a lack of clinical preceptor engagement with weight-related



conversations in primary care rotations. The co-investigator realized a need for increased education and confidence in nurse practitioners with initiating weight-related conversations with patients with overweight and obesity. The principal investigator had connections with a grant between a Midwest university and an NFPF with a neighboring healthcare organization. One of the objectives of the grant was childhood obesity prevention in rural primary care. Contact was initiated with the NFPF chair who expressed interest in the project. A manager from the weight management clinic in the same Midwest hospital became aware of the PIP and asked for the clinic to take part as well. A need for increased education was further identified within the literature review and the desire to fulfill this need was the foundation for the development of this PIP.

### *Setting/Sample/Recruitment*

This PIP was conducted in an NFPF through a collaboration between a Midwest university and a weight management clinic in a Midwest hospital. The weight management clinic employs four clinicians including two NPs, one Physician Assistant (PA), and one medical doctor (MD). The NFPF was a partnership established in June of 2022 to address healthcare shortages in rural areas (Essentia Health, 2022). There was a total of 12 potential fellows in the NFPF, but due to the program's education timeline and grant funding, there were only six, all NPs, eligible participants who were the focus of the PIP. Originally the project was to be implemented alongside an obesity management module and would be within the NFPF program itself as mandatory education with the surveys being voluntary. Part way through the project, the NFPF grant objectives changed to have a lesser focus on obesity and therefore the mandatory education was unable to be accomplished leaving participants to complete the extra education plus the project's surveys on their own time.

The principal investigator is an NP and associate professor of practice for a School of Nursing in the state of North Dakota and the co-investigator is an NP student. NPs were chosen as the convenience sample for this PIP because they participate in the NFPF, practice in rural areas, and manage patients in the weight management clinic. Inclusion criteria included participation in the NFPF or employee of the weight management clinic. A gift card incentive was provided to encourage the completion of the PIP. Recruitment was conducted through secure email via the Midwest hospital liaison, who was also the manager at the weight-management clinic. The educational video and surveys were optional for participants to complete.

### ***Team Formation***

The formation of a team is crucial in the development of this PIP. The team consisted of professors within the School of Nursing at NDSU, ancillary staff and IT members from NDSU, grant committee members, an organizational liaison from the Midwest hospital, and an NP student. A description of the team members is below.

The faculty chair is an NDSU DNP faculty member and practicing NP with a special interest in health promotion and disease prevention. The second committee member is an NDSU DNP faculty member and practicing pediatric nurse practitioner in Minnesota and North Dakota with a special interest in childhood obesity prevention. The third member is an NDSU DNP faculty member and practicing rural nurse practitioner in North Dakota. The graduate appointee is a member of the NDSU biological sciences program and interested in interprofessional education. The organizational liaison was the manager of the weight management clinic participating in the PIP and was also a member of the NFPF grant team. Collaboration with the NFPF and weight management clinic was chosen based on the grant topic and the collaborating hospital with the Midwest University.

### *Assemble, Appraise, and Synthesize the Body of Evidence*

A thorough literature review was completed through the NDSU libraries database. A Cochrane review did not yield any articles regarding childhood obesity prevention in primary care. Only peer-reviewed journal articles were reviewed. Majority of the articles were less than five years old, but older articles were included to provide pertinent information when updated versions were unavailable. Additional sources were identified from the reference lists of selected articles.

### *Developing and Implementing Project*

As found in the literature, there is a lack of education and confidence among practitioners concerning initiating and sustaining weight-related conversations in primary care. An increase in education surrounding weight-related conversations for professional nurse practitioners will help combat negative factors weight bias brings to the patient and subsequently the health care system. Additional education will also increase practitioner confidence in talking to patients with overweight or obesity.

The online pre-survey was developed by the co-investigator and administered before the participant viewed the educational video through Qualtrics, the online service tool provided through NDSU. The Qualtrics survey tool allowed confidentiality for participants and comparison between pre- and post-survey data. The pre-survey was developed through gaps found in the literature review, consisted of 31 questions, and took the participants about fifteen minutes to complete. The post-survey consisted of seven questions and was administered via Qualtrics following the complete viewing of the educational video. The post-survey mimicked the pre-survey questions so objectives could be analyzed after the project.

A month was allowed for participants to complete the pre-survey, educational video, and post-survey with a reminder prompt sent to participants via email through the organizational liaison two weeks before the end of the allotted timeframe. After the participant completed the project, a prompt was provided to enter contact information to have a chance to win one of two \$10 gift certificates. The names of those who completed the follow-up survey were put into a computer-generated randomizer and two winners were chosen. The gift certificates were delivered to recipients via the email provided.

A follow-up questionnaire was planned one month after project completion to evaluate behavior change in practitioners after the intervention. The one-month follow-up survey was three questions long and took about five minutes to complete. The follow-up survey was sent by email and administered through Qualtrics to participants who completed the pre-survey, educational video, and post-survey. The follow-up survey was open for two weeks with two email reminders sent to participants at one week and again three days before survey closure. After the completion of the one-month survey, a prompt was provided for participants to enter contact information to have a chance to win one of two \$25 gift cards. The names of those who completed the follow-up survey were put into a computer-generated randomizer and in the presence of the principal investigator, a winner was chosen. The gift certificates were delivered to recipients via the email provided. The recipients of the previous gift cards were still eligible to win one of the larger gift cards. The data from the surveys were collected by the co-investigator and stored on a personal, only accessible to the coinvestigator, password-protected computer.

### ***Evaluation***

Evaluation of the objectives for effectiveness was performed after the completion of the project. Pre-surveys were given to participants, via Qualtrics, before the viewing the one-hour

educational video, and post-surveys were given right after the completion of the educational video. A one-month follow-up survey was administered to assess knowledge retention. Objectives were evaluated using descriptive statistics. Demographics regarding age, gender, and race were not collected due to privacy protection with the small sample size. Educational demographics and perceived barriers were collected to be able to relate and compare new graduate vs experienced staff and family practice vs specialty. These questions were reflected in questions #1-#5, #7, #19, #22-27, and #31.

Objective one states there will be an increase in practitioner confidence in engaging in weight-related conversations with families surrounding childhood obesity options and management. Objective one will be evaluated through questions #6, #20, #21, #28, #29, and #30 on the pre-test. These questions will allow for the evaluation of perceived confidence before the educational video session. Questions #34, #37, #38, #39, and #40 on the post-survey will allow for perceived confidence in practitioners after viewing the educational video.

Objective two was to be assessing rural nurse practitioner obesity conversation education received in formative and continuing education. Objective two was to be evaluated through questions #8-#18. These questions allowed insight into the education participants received prior to the PIP.

Objective three was to be assessing practitioner willingness to utilize motivational interviewing tools used in the educational video in their approach to weight-related conversations after the completion of the childhood obesity prevention modules. This was to be evaluated using questions #35 and #36 on the post-survey and the one-month follow-up questionnaire questions.

## **Conclusion**

In conclusion, this PIP required a team approach to achieve meaningful outcomes. Using the Adult Learning Theory with the Iowa Model allowed the creation of an educational video session for nurse practitioners in an NPFP and healthcare providers in the weight-management clinic. Measuring data obtained through the PIP allowed the co-investigator to determine if the proposed objectives were met. Comparing pre- and post-intervention survey results was useful to help guide further implementations in the transition to practice program and sustainability of the project.

## **CHAPTER 4: RESULTS**

The original target population was the nurse fellowship program, which had the potential for six participants, and would be compared to the weight management clinic, which had a potential for four participants. The NPFPP were all nurse practitioners and the weight management clinic included two NPs, one PA, and one MD. The original implementation process was for the video to be assigned as mandatory education for the NPFPP participants to compare to the weight loss clinic providers. The surveys of the PIP would then have been added for participants to complete voluntarily as part of the PIP. Due to timing and a change in the objectives for the grant associated with the NPFPP, this did not come to fruition and so the surveys and the education video were all voluntary. Due to the way the PIP was implemented, there were only three weight-management participants who voluntarily participated in the project.

### **Summary of Results**

Pre- and post-surveys were collected from nurse practitioners in the nurse fellowship program and health care providers in the weight management clinic over a one-month time frame from October 2023 to November 2023. The participation email was sent by the organization liaison via email. Six participants started the pre-survey, with three participants completing the pre-survey, educational video session, and post-survey. One participant who completed the pre-survey, educational video session, and post-survey also completed the one-month follow-up survey education.

Demographics were analyzed and can be viewed in Table 1. The target population for this PIP were participants in the nurse practitioner fellowship program and employees from a weight-management clinic in a Midwest hospital. All the participants were healthcare providers in the weight management clinic and reported more than 75% of the patients they work with having overweight or obesity. There were no participants from the nurse fellowship program.

**Table 1**

*Educational demographics (N=3)*

<b>Level of Education</b>	<b>Frequency (N=3)</b>
NP	1
PA	2
MD	0
<b>Clinic Setting</b>	
Family Practice	0
Weight Management Clinic	3
<b>Location of Practice</b>	
Urban	0
Rural	3
<b>Years of Practice</b>	
Less than one year	1
1-5 years	0
5-10 years	0
>10 years	2

General obesity perception questions were asked with questions #24, #25, and #26. All participants agreed having overweight or obesity increased a patient’s risk for developing depression, low self-esteem, diabetes, heart disease, hypertension, and cancer and perceived obesity to be both a public and private issue.



Question #26 asked, “How much responsibility do certain people have in talking about childhood obesity”. Table 2 shows their responses,

**Table 2**

*Responsibility for Talking About Childhood Obesity (N=3)*

	None at all	A Little	A Moderate Amount	A Lot	A Great Deal
Patient	0	1	1	0	1
Parents	0	0	0	0	3
Healthcare Providers	0	0	0	0	3
Schools	0	0	1	1	1
Food industry	0	0	0	0	3
Government	0	0	1	0	2

Potential barriers to initiating weight-related conversations were addressed in question #22. The question stated, “What are some barriers to having weight-related conversations with patients?” One participant reported a lack of time for an appointment while the other two participants reported having no barriers to having weight-related conversations with patients.

When asked to rank the list of barriers in order from being a high barrier to a lower barrier, 100% (N=3) of respondents ranked barriers in the following order:

1. Lack of time during the appointment
2. Lack of education
3. Lack of confidence in skills
4. Lack of reimbursement
5. Prioritization of other health concerns

6. Lack of experience

7. Organizational constraints

Question #27 on the pre-survey was the same as question #37 on the post-survey and assessed general awareness questions before initiating a weight-related conversation. Table 3 depicts these results. Question #28 in the pre-survey was the same as #38 in the post-survey. These questions asked participants to respond to questions about personal and professional weight bias and stigmatization. Table 4 shows these results.

**Table 3***Personal Awareness Pre-Conversation (N=3)*

		Pre-Survey					Post-Survey				
		None At All	A Little	A Moderate Amount	A lot	A Great Deal	None At All	A Little	A Moderate Amount	A Lot	A Great Deal
40	Your role in the treatment and management of childhood obesity	0	0	2	0	1	0	0	1	1	1
	Indications for weight-related conversations	0	0	0	0	3	0	0	1	1	1
	Initiating weight-related conversations	0	0	0	0	3	0	0	0	0	3
	Interview questions to ask of patients with overweight or obesity	0	0	2	0	1	0	0	0	0	3
	Using patient-first language in conversations with patients	0	0	1	1	1	0	0	0	0	3

*Personal Awareness Pre-Conversation (N=3) (continued)*

41

	Pre-Survey					Post-Survey				
	None At All	A Little	A Moderate Amount	A Lot	A Great Deal	None At All	A Little	A Moderate Amount	A Lot	A Great Deal
How to increase parental awareness of childhood obesity	0	0	2	1	0	0	0	1	2	0
Giving preventative education to patients and parents	0	0	2	0	1	0	0	0	0	3
Identifying risk factors	0	0	0	2	1	0	0	0	1	2
Addressing cultural norms that increase overweight and obesity	0	1	1	1	0	0	1	0	1	1
Community resources available to you as a healthcare provider	0	0	1	1	1	0	0	1	1	1
Explaining the role of BMI to patients	0	0	1	1	1	0	0	1	1	1

**Table 4***Weight Bias Assessment (N=3)*

		Pre-Survey					Post-Survey				
		Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
42	Patients are solely responsible for their weight status	2	0	0	1	0	1	1	0	1	0
	Childhood obesity leads to comorbidities later in adulthood	0	0	0	0	3	0	0	0	1	2
	Motivational interviewing helps prevent obesity	0	0	1	1	1	0	1	0	2	0
	I have perceived weight bias	1	2	0	0	0	1	2	0	0	0

*Weight Bias Assessment (N=3) (continued)*

		Pre-Survey					Post-Survey				
		Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
43	There is weight bias in my place of employment	1	1	0	1	0	1	1	0	1	0
	My place of employment is welcoming to those with overweight or obesity	0	0	0	0	3	0	0	0	1	2
	I feel prepared to have weight-related conversations	0	0	0	0	3	0	0	0	0	3
	Weight stigmatization leads to binge eating and avoidance of healthcare in people with overweight or obesity	0	0	0	2	1	0	0	0	2	1

*Weight Bias Assessment (N=3) (continued)*

		<b>Pre-Survey</b>					<b>Post-Survey</b>				
		Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
44	Weight stigmatization leads to motivation to change	1	1	1	0	0	3	0	0	0	0
	Telling parents their child's BMI will decrease the child's BMI over time	0	0	3	0	0	2	1	0	0	0
	I know the four processes of motivational interviewing	1	1	0	1	0	0	0	0	0	3

## Objective One

The first objective of the PIP was, to “*increase rural nurse practitioner confidence in engaging in weight-related conversations with families surrounding childhood obesity options and management.*” Objective one was considered partially met. On the pre-survey, all participants rated their knowledge of motivational interviewing as “*some*” with one participant rating their confidence in motivational interviewing as “*neither comfortable nor uncomfortable*” and two participants as “*somewhat comfortable.*” Question #21 on the pre-survey was the same as #34 on the post-survey and was used to rate the participant’s perceived level of confidence in managing children with overweight or obesity before and after the PIP. On a scale of 1-10, with “1” being least confident and “10” being most confident, respondents were asked, “*What is your perceived level of confidence in managing children with overweight or obesity?*” The results are presented in Table 5.

**Table 5**

*Overall Perceived Confidence in MI (N=3)*

		1	2	3	4	5	6	7	8	9	10
0= least confidence 10= most confident											
On a scale of 1-10, what is your perceived level of confidence in managing children with overweight or obesity?	<b>Pre</b>	0	0	0	0	1	0	1	1	0	0
	<b>Post</b>	0	0	0	0	1	0	0	0	2	0

Questions #29 on the pre-survey and #39 on the post-survey were identical. Both questions addressed perceived confidence in the different parts of weight-related conversations. There was found to be an overall increase in the perceived confidence of participants between the pre-survey and post-survey as well as an increase in the use of patient-first language after the



educational video session. Those participants who had more years of experience did not report more perceived confidence than the participant with fewer years of experience. The NP participant reported a higher perceived confidence than the two participating PAs. The results are displayed in Table 6.

**Table 6***Perceived Confidence of Weight Conversation Components (N=3)*

		<b>Pre-Survey</b>					<b>Post-Survey</b>				
		Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
47	I am comfortable initiating weight-related conversations with parents of children with overweight or obesity	0	0	0	2	1	0	0	0	1	2
	I am comfortable initiating weight-related conversations with children with overweight or obesity	0	0	0	3	0	0	0	0	1	2

*Perceived Confidence of Weight Conversation Components (N=3) (continued)*

		<b>Pre-Survey</b>					<b>Post-Survey</b>				
		Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
48	Healthcare workers have a responsibility to address weight at every visit	0	0	0	1	2	1	1	0	1	0
	I have sufficient training to initiate weight-related conversations	0	0	0	1	2	0	0	0	0	3
	I am confident in addressing weight-related problems with my patients	0	0	0	1	2	0	0	0	0	3

*Perceived Confidence of Weight Conversation Components (N=3) (continued)*

	<b>Pre-Survey</b>					<b>Post-Survey</b>				
	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
I am confident in providing patient-first language to patients who have overweight or obesity	0	0	0	2	1	0	0	0	0	3

## Objective Two

The second objective of the PIP was, to “*Assess rural nurse practitioner obesity conversation education received in formative and continuing education.*” Objective two was considered met. According to the pre-survey (N=3), all the participants had received training on obesity conversations before this educational video session and are employed in a rural weight management clinic. The types of obesity education completed prior are listed in Table 7. Question #10 on the pre-survey indicated that 100% of participants had received obesity conversation education previously in the form of a formative lecture or education video. Participants reported varying amounts of hours (3 hours, 10 hours, 40 hours) of completed obesity conversation-specific training. Participants who reported more hours of education did not have an increase in perceived confidence. Of all the participants, 2/3 reported they had specific training related to motivational interviewing in the form of a “*short talk*”, while the remaining participant reported no specific training related to motivational interviewing.

### Table 7

*Prior Types of Obesity Education Completed (N=3)*

---

Where did you complete this education (examples: formative education, employer, conferences, CEUs)	<ul style="list-style-type: none"><li>• “Employer, CME conferences”</li><li>• “CME and Conferences”</li><li>• “CMEs and PA school”</li></ul>
--	--

---

Questions #15-18 related to participants' exposure to obesity conversation during formative schooling. Of the three participants, two completed their formative education in-person only while one completed formative education via a hybrid method of in-person and online. One participant, who had been in practice less than a year, reported specific motivational interviewing training was part of their formative education given in the form of a formative

lecture and educational video. All participants reported they did not feel they have had adequate motivational interviewing education in either their formative or continuing education content.

**Objective Three**

The third objective of the PIP was to “*Assess practitioner intent to utilize motivational interviewing tools used in the educational video in their approach to weight-related conversations after the completion of the educational video session.*” Objective three is considered met. All respondents either agreed or strongly agreed the educational video provided was helpful to them in initiating weight-related conversations.

Questions #35 and #36 on the post-survey asked participants what changes they would make to their practice. Two respondents said they would modify communication with patients, partners, caregivers, and/or members of the healthcare team, one respondent said they would discuss new learning with their peers and one respondent said they would make no changes, but the activity validated their current practice. All respondents were very committed to making these changes. Qualitative data was elicited from participants at the end of the post-survey to determine if the PIP helped respondents feel the PIP prepared them more to have weight-related conversations. Question #40 asked, “*Do you feel you are prepared to have weight-related conversations? Why or why not?*” In response, 100% of participants indicated “yes”. Table 8 shows respondents' narrative feedback to this question.

**Table 8**

*Conversation Preparedness (N=3)*

Do you feel you are prepared to have weight-related conversations? Why or why not?	<ul style="list-style-type: none"> <li>• “Yes, I do it every day”</li> <li>• “Yes. This training was helpful. I was pretty confident as I have had pervious training and work in weight management”</li> <li>• “Yes. Motivational interviewing skills improve comfort level”</li> </ul>
--	---

Question #41 on the post-survey asked respondents to “*share any overall comments about the practice improvement project*”. Table 9 provides insight into the data provided by respondents.

**Table 9**

*PIP Overall Comments (N=3)*

Share any overall comments about the practice improvement project.	<ul style="list-style-type: none"> <li>● “Great video thanks for sharing”</li> <li>● “Great video we need more motivational interviewing resources in practice”</li> <li>● “Great ideas for approaching the topic-especially with primary care providers”</li> </ul>
--	--

The follow-up survey was conducted one-month after project completion from December 2023 to January 2024. The follow-up survey was open for all participants who had completed the pre-survey, educational video session, and post-survey. There was one participant in the one-month follow-up survey. The follow-up survey consisted of three questions. Questions #1 asked “*have you implemented any of the information you took away from weight-related conversation training into your practice over this last month?*”. The one respondent answered “yes” and answered trying “*to incorporate more reflection in conversations and to convey more empathy and express acceptance*” when asked what changes the participant had made to their practice since the educational video session. The last question stating “*why have you not implemented these changes*” was not applicable as the participant had implemented changes.

## CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

The original target population was the nurse fellowship program, which had the potential for six participants, and would be compared to practitioners at the weight management clinic, which had a potential for four participants. The original implementation process was for the video to be assigned as mandatory education for the NPFPP participants. The surveys of the PIP would then have been added for participants to complete voluntarily as part of the PIP. Due to timing and a change in the objectives for the grant associated with the NPFPP, this did not come to fruition. As a result, the surveys and the education video were all voluntary. Due to the way the PIP was implemented, there were only three weight-management participants.

### Interpretation of Results

As found in the literature review, participants surveyed would have a perceived lack of confidence in initiating weight-related conversations (Darling et al., 2018). The average confidence of participants in childhood obesity management was reported 6.67/10 on the pre-survey and 7.6/10 on the post-survey. This represents an increase of 0.93 in the participants' mean confidence in managing childhood obesity. The higher overall average may be biased towards a higher starting confidence level due to the population demographics. Overall, general confidence scores increased for 2/3 of the participants after the completion of the educational video session with one participant remaining at the same confidence level on both the pre-and post-survey. All participants reported they “*somewhat agreed*” or “*strongly agreed*” in their confidence with initiating weight-related conversations with parents of children or patients with overweight and obesity on their pre-survey and all chose “*strongly agreed*” on the post-survey indicating an increase in perceived confidence. This corroborates with Bradbury et al. (2019)



findings that providers who engage in weight-related conversations regularly will report feeling confident in speaking to parents of children with overweight or obesity.

Objective two findings were found to partially align with Ockene et al. (2020) as only one participant out of three reported specific motivational training in formative schooling in the form of a lecture and educational video. Interestingly, the participant who reported this was a physician assistant who had been in practice for less than a year. This could indicate a positive shift towards increasing obesity conversation methods in formative schooling, though with the small sample size is hard to make this inference. All the participants reported receiving specific training in obesity conversations before the PIP and 2/3 of participants reported receiving specific MI training in the form of a short talk. Additionally, all participants reported additional weight conversation training in the form of CEUs and conferences which follows Ritten and LaManna's (2018) recommendation to seek out additional training to be effective in the treatment and management of childhood obesity. All participants agreed to some extent they had sufficient training to initiate weight-related conversations. This is to be expected with the population that participated in the survey.

The literature review indicated multiple perceived barriers to having weight-related conversations (Rhee et al., 2018). The findings from this PIP do not support this finding. Only one out of three participants reported a barrier, which was lack of time. This could be explained by lack of time management skills as the reporting participant has been in practice for less than a year. It could also be a small sample size with most participants being confident in having weight related conversations with patients. Despite the literature stating the importance of addressing weight with every visit and participants all being at a weight-management clinic, only one of the three participants "*somewhat agreed*" that healthcare workers should address weight at every

visit. Engaging in weight-related conversations takes time for both the practitioner and the patient, which may result in prioritization of more important issues (Hauff et al., 2020). The OMEC is a helpful tool in disseminating obesity medicine education and was mentioned by two out of three participants when asked what resources they utilize in their current practice including the participant who reported MI learning in formative education (OMA, 2023).

All the participants agreed the video helped them initiate weight-related conversations. None of the respondents suggested any changes to the project. One respondent stated, “*The video had great ideas, especially with primary care providers.*” Two out of three participants indicated they would make changes to their practice based on what they learned in the educational video, and all participants indicated they were “*very*” committed to making a change in their practice after completing the PIP.

The one-month follow-up survey was made available to those who completed the pre-survey, educational video session, and post-survey. One participant completed the one-month follow-up survey and reported they had implemented something they had learned from the educational video into their practice in the past month. This indicated learning from the educational video session for that participant. More participants would have made these results more meaningful.

### **Limitations**

Although the educational video did provide an increase in overall perceived confidence and future use after the PIP, there were limitations discovered through the analysis of the results of this PIP. One limitation was the time commitment of the PIP. In total, the project took participants about 1.5 hours to complete, with the educational video being about an hour long. When looking at the results from the PIP, two other participants started the presurvey, but did not

finish the project once the viewing of the educational video was required. This could have been due to the length of the educational video and the extra time needed to complete the post-survey. In reviewing the survey questions, some of the general knowledge questions could have been eliminated from the surveys as they did not directly relate to the objectives of the study. This would have shortened the time needed to complete the PIP and may have resulted in an increased participation and completion of the PIP.

The second limitation of the PIP was the lack of participants from the nurse fellowship program. The original target population was the nurse fellowship program which had the potential for six participants, with the weight management clinic being an addition to the study to compare primary and specialty care. The original implementation process was for the video to be assigned as mandatory education for the NFPF participants. The surveys of the PIP would then have been added for participants to complete voluntarily. Due to timing and a change in the objectives for the grant associated with the NFPF, this did not come to fruition. As a result, the surveys and the education video were all voluntary. Although the co-investigator initiated reminder prompts for completion of the PIP, there were no participants from the nurse fellowship program. The co-investigator could have offered continuing education credit as an incentive to increase motivation allowing for the potential for more participants. More participants in the study would have meant better insight into weight-related conversation confidence amongst primary care nurse practitioners.

The third limitation of the PIP was the lack of participants in the one-month follow-up survey. There was the potential for three participants, with only one completing the one-month follow-up survey. This may have been negated if the timing of implementation would have been shifted. The one-month follow-up survey took place from the end of December 2023 to the end

of January 2024. With Christmas and New Years, participants may have been lacking in extra time and motivation to complete the remaining part of the project, thus resulting in the low participation rates. Perhaps different timing and offering continuing education credits could have incentivized participants enough to complete all steps of the project.

### **Recommendations**

Positive feedback from participants indicates the impact this project has and should continue to be viewed by those participating in weight-related conversations, although a larger sample size would help further support this conclusion. The educational video used in this project is currently on the AAP website where anyone can view the material. The NFPF program coordinator should share the video with program participants to further educate healthcare professionals about initiating and sustaining weight-related conversations.

Future recommendations also include targeting only primary care nurse practitioners to be able to assess the education and confidence in a non-weight specialty participant and to align timing of implementation around holidays and busy times in the season to allow for adequate time and motivation for participants to complete the PIP. The co-investigator also encourages any healthcare provider to further educate themselves in initiating and sustaining weight-related conversations with patients as childhood obesity continues to rise.

### **Implications for Practice**

The results of this project support implications for practice due to the positive results from the evaluation process of the PIP. Implications for nursing practice should include incorporation of MI skills in the continuing education of all health care providers. Based upon feedback from participants, primary care practitioners could greatly benefit from the educational video and should thus be available for NFPF cohorts. The goal should be the use of MI skills

with every patient every time when initiating weight-related conversations with patients and families.

The dissemination component of this PIP is an important step to distribute study results to improve practitioner practice. The conclusions made from this PIP will be discussed with committee members through the co-investigators final defense, and the co-investigator's primary family medicine preceptor who has a special interest in nutrition and obesity prevention in children. The project was shared through a poster presentation in the Fall of 2023 in which the methods and timeline of the project were discussed. An executive summary of the project is attached. See Appendix H.

### **Implications for Future Research**

Future PIPs could have a more target approach to primary nurse practitioners. This PIP was targeting both weight-management and primary care practitioners, but lacks the primary care perspective. A sole focus on primary care would be beneficial for evaluation of general confidence in weight-related conversations. A comparison of MI techniques with other weight-related conversation methods (i.e. support groups) would allow for better understanding of evidence-based conversation initiation.

Future PIPs could also include a patient evaluation component after appointments to assess intent to change and perceptions based on the conversation with the practitioner. Maintaining the *Health Insurance Portability and Accountability Act* (HIPPA) would be important throughout the entire process to ensure patient confidentiality. More practitioners in multiple locations would strengthen the project results. Because this PIP took a lot of time for participants to complete, offering continuing education credit in the future would help recruit people to participate.

## **Application to the Nurse Practitioner Role**

The two main focuses of the practice of a nurse practitioner are health promotion and disease prevention. When practitioners engage in weight-related conversations with confidence, patients and parents are more likely to make a positive lifestyle change (Auckburally et al., 2021). These changes become sustainable when motivation is developed through the MI process in conversation with health care practitioners. Sustainable changes over time can lead to the avoidance of acute and chronic diseases and promotes the overall health of the child and family. Weight-related conversations take place anywhere; therefore, all NPs should continue to educate themselves on best practice for initiating and sustaining weight-related conversations. MI skills should be used by every nurse practitioner for every encounter with patients. Education provided should be tailored to the patient's goals, be attainable based on the patient's and family's social determinants of health, and follow-up appointments should be scheduled to continue accountability. Practitioners are role models for their patients and thus should lead by example of healthy lifestyle choices. The combination of compassion shown through weight-related conversations using MI and the example set forth by the nurse practitioner builds a stronger practitioner-patient relationships leading to positive lifestyle changes.

## REFERENCES

- Abdin, S., Heath, G., & Welch, R. K. (2021). Health professionals' views and experiences of discussing weight with children and their families: A systematic review of qualitative research. *Child: Care, Health and Development*, 47(4), 562–574.  
<https://doi.org/10.1111/cch.12854>
- American Academy of Pediatrics. (2020, August 27). *Healthy active living for families*. HealthyChildren.org. <https://www.healthychildren.org/English/healthy-living/nutrition/Pages/Healthy-Active-Living-for-Families.aspx>
- American College of Pediatricians. (2021, February). *The benefits of the family table*.  
<https://acped.org/position-statements/the-benefits-of-the-family-table>
- Ames, H., Mosdøl, A., Blaasvær, N., Nøkleby, H., Berg, R. C., & Langøien, L. J. (2020). Communication of children's weight status: What is effective and what are the children's and parents' experiences and preferences? a mixed methods systematic review. *BMC Public Health*, 20(1). <https://doi.org/10.1186/s12889-020-08682-w>
- Auckburally, S., Davies, E., & Logue, J. (2021). The use of effective language and communication in the management of obesity: The challenge for healthcare professionals. *Current Obesity Reports*, 10(3), 274–281. <https://doi.org/10.1007/s13679-021-00441-1>
- Bradbury, D., Chisholm, A., Watson, P. M., Bundy, C., Bradbury, N., & Birtwistle, S. (2018). Barriers and facilitators to health care professionals discussing child weight with parents: A meta-synthesis of qualitative studies. *British Journal of Health Psychology*, 23(3), 701–722. <https://doi.org/10.1111/bjhp.12312>

- Brown, C. L., Howard, J. B., & Perrin, E. M. (2020). A randomized controlled trial examining an exam room poster to prompt communication about weight. *Pediatric Obesity, 15*(7).  
<https://doi.org/10.1111/ijpo.12625>
- Brown, C. L., & Perrin, E. M. (2018). Obesity prevention and treatment in primary care. *Academic Pediatrics, 18*(7), 736–745. <https://doi.org/10.1016/j.acap.2018.05.004>
- Buhr, E., & Tannen, A. (2020). Parental health literacy and health knowledge, behaviours and outcomes in children: A cross-sectional survey. *BMC Public Health, 20*(1).  
<https://doi.org/10.1186/s12889-020-08881-5>
- Centers for Disease Control and Prevention. (2016). *State nutrition, physical activity, and obesity profile*. [PDF]. <https://www.cdc.gov/nccdphp/dnpao/state-local-programs/profiles/pdfs/north-dakota-state-profile.pdf>
- Centers for Disease Control and Prevention. (2022a, May 18). *Childhood obesity facts*. Center for Disease Control. <https://www.cdc.gov/obesity/data/childhood.html>
- Centers for Disease Control and Prevention. (2022b, July 29). *Childhood obesity facts*.  
<https://www.cdc.gov/obesity/data/childhood.html>
- Centers for Disease Control and Prevention. (2022c, October 5). *About child and teen bmi*. Retrieved April 16, 2023, from  
[https://www.cdc.gov/healthyweight/assessing/bmi/childrens\\_bmi/about\\_childrens\\_bmi.html](https://www.cdc.gov/healthyweight/assessing/bmi/childrens_bmi/about_childrens_bmi.html)
- Centers for Disease Control and Prevention. (2023, January 19). *Childhood obesity research demonstration projects (cord)*. <https://www.cdc.gov/obesity/initiatives/cord/cord3.html>
- Contreras, D. A., Martoccio, T. L., Brophy-Herb, H. E., Horodynski, M., Peterson, K. E., Miller, A. L., Senehi, N., Sturza, J., Kaciroti, N., & Lumeng, J. C. (2020). Rural–urban



- differences in body mass index and obesity-related behaviors among low-income preschoolers. *Journal of Public Health*, 43(4), e637–e644.  
<https://doi.org/10.1093/pubmed/fdaa162>
- Darling, K. E., Fahrenkamp, A. J., Ruzicka, E., Levitt, M., Broerman, L., & Sato, A. (2018). Provider perceptions of pediatric obesity management in clinical practice. *Children's Health Care*, 48(1), 90–102. <https://doi.org/10.1080/02739615.2018.1471997>
- Durbin, J., Baguioro, M., & Jones, D. (2018). Pediatric obesity in primary practice: A review of the literature. *Pediatric Nursing*, 44(4), 202–206. <https://www.proquest.com/scholarly-journals/pediatric-obesity-primary-practice-review/docview/2096475334/se-2>
- Emmons, K. M., & Gandelman, E. (2019). Translating behavioral medicine evidence to public policy. *Journal of Behavioral Medicine*, 42(1), 84–94. <https://doi.org/10.1007/s10865-018-9979-7>
- Essentia Health. (2022, June 23). New nursing partnership established between Essentia Health, NDSU. <https://www.essentiahealth.org/about/essentia-health-newsroom/new-nursing-partnership-established-between-essentia-health-ndsu/>
- Essentia Health. (2023). *Essentia Health*. [www.essentiahealth.org](http://www.essentiahealth.org)
- Even, J. (2016, March 18). *5-2-1-0 Let's Go! Live Healthy Live Well*. Retrieved February 25, 2023, from <https://livehealthyosu.com/2016/03/18/5-2-1-0-lets-go>
- Faircloth, R. S., Brooks, D. I., Vogt, K. S., & Emerick, J. E. (2019). Talking about childhood obesity: A survey of what parents want. *American Academy of Pediatrics*, 19(7), 756–763. <https://pubmed.ncbi.nlm.nih.gov/30867135/>
- Fruh, S. M., Golden, A., Graves, R. J., Minchew, L. A., Platt, T. H., Hall, H. R., Williams, S. G., Mehari, K., Sims, B. M., Hauff, C., & Cheese, C. (2019). Competency in obesity

- management: An educational intervention study with nurse practitioner students. *Journal of the American Association of Nurse Practitioners*, 31(12), 734–740.  
<https://doi.org/10.1097/jxx.0000000000000218>
- Gates, K. A., & Amin, K. (2022). Motivational interviewing and childhood obesity. *Journal of Alternative Medicine Research*, 14(2), 125–135.  
<https://www.proquest.com/docview/2779948621/8C524390F76F4FA5PQ/11?sourcetype=Scholarly%20Journals>
- Gross, R. S., & Mendelsohn, A. L. (2019). Food insecurity during early childhood: Marker for disparities in healthy growth and development. *Pediatrics*, 144(4).  
<https://doi.org/10.1542/peds.2019-2430>
- Gutin, I. (2022). Not ‘putting a name to it’: Managing uncertainty in the diagnosis of childhood obesity. *Social Science & Medicine*, 294, 1–8.  
<https://doi.org/10.1016/j.socscimed.2022.114714>
- Haboush-Deloye, A., Berlin, H., Marquez, E., & Moonie, S. (2021). Obesity in early childhood: Examining the relationship among demographic, behavioral, nutritional, and socioeconomic factors. *Childhood Obesity*, 17(5), 349–356.  
<https://doi.org/10.1089/chi.2020.0263>
- 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(2).  
<https://doi.org/10.1542/peds.2022-060640>

- Haqq, A. M., Kebbe, M., Tan, Q., Manco, M., & Salas, X. (2021). Complexity and stigma of pediatric obesity. *Childhood Obesity, 17*(4), 229–240.  
<https://doi.org/10.1089/chi.2021.0003>
- Hauff, C., Fruh, S. M., Graves, R. J., Sims, B. M., Williams, S. G., Minchew, L. A., Hall, H. R., Platt, T. H., & Barclay, M. (2019). Np student encounters with obesity bias in clinical practice. *The Nurse Practitioner, 44*(6), 41–46.  
<https://doi.org/10.1097/01.npr.0000558157.76596.c7>
- Hauff, C., Fruh, S. M., Sims, B. M., Williams, S. G., Herf, C., Golden, A., Graves, R. J., Minchew, L. A., & Hall, H. R. (2020). Nurse practitioner students' observations of preceptor engagement in obesity management and weight bias: A mixed-methods approach. *Journal of the American Association of Nurse Practitioners, 32*(7), 520–529.  
<https://doi.org/10.1097/jxx.0000000000000440>
- Henderson, N. (2021). Childhood obesity: Improving outcomes through primary care-based interventions. *Pediatric Nursing, 47*(6), 267–300.  
<https://www.proquest.com/docview/2615893294/492DEA1EEF1445B5PQ/1?sourcetype=Scholarly%20Journals>
- Hersch, D. E., Uy, M. A., Ngaw, S. M., & Loth, K. A. (2021). Primary care providers' perspectives on initiating childhood obesity conversations: A qualitative study. *Family Practice, 38*(4), 460–467. <https://doi.org/10.1093/fampra/cmaa144>
- Imoisili, O. E., Goodman, A. B., Dooyema, C. A., Harrison, M. R., Belay, B., & Park, S. (2019). Screening and referral for childhood obesity: Adherence to the u.s. preventive services task force recommendation. *American Journal of Preventive Medicine, 56*(2), 179–186.  
<https://doi.org/10.1016/j.amepre.2018.10.003>

- International Food Information Council. (2021, May 19). *2021 Food & health survey*. Retrieved May 30, 2023, from <https://foodinsight.org/wp-content/uploads/2021/05/IFIC-2021-Food-and-Health-Survey.May-2021-1.pdf>
- International Food Information Council. (2023, May 23). *2023 Food & health survey*. Retrieved May 30, 2023, from <https://foodinsight.org/wp-content/uploads/2023/05/IFIC-2023-Food-Health-Report.pdf>
- Khanna, D., Peltzer, C., Kahar, P., & Parmar, M. S. (2022). Body mass index (bmi): A screening tool analysis. *Cureus*. <https://doi.org/10.7759/cureus.22119>
- Kim, J., & Lim, H. (2019). Nutritional management in childhood obesity. *Journal of Obesity & Metabolic Syndrome*, *28*(4), 225–235. <https://doi.org/10.7570/jomes.2019.28.4.225>
- Kuttner, W. (2022). Online self-directed learning module. *Journal for Nurses in Professional Development*, *38*(5), 287–301. <https://doi.org/10.1097/nnd.0000000000000916>
- Lawrence, B. J., Kerr, D., Pollard, C. M., Theophilus, M., Alexander, E., Haywood, D., & O'Connor, M. (2021). Weight bias among health care professionals: A systematic review and meta-analysis. *Obesity*, *29*(11), 1802–1812. <https://doi.org/10.1002/oby.23266>
- Le-Jenkins, U., Cartagena, D., Renaud, M., & Guston, T. (2020). Effectiveness of a primary care-based pediatric weight management program. *Journal of Doctoral Nursing Practice*, *13*(1), 9–16. <https://doi.org/10.1891/2380-9418.13.1.9>
- Mahmood, L., Flores-Barrantes, P., Moreno, L. A., Manios, Y., & Gonzalez-Gil, E. M. (2021). The influence of parental dietary behaviors and practices on children's eating habits. *Nutrients*, *13*(4), 1138. <https://doi.org/10.3390/nu13041138>
- Mastrocola, M. R., Roque, S. S., Benning, L. V., & Stanford, F. (2019). Obesity education in medical schools, residencies, and fellowships throughout the world: A systematic review.

- International Journal of Obesity*, 44(2), 269–279. <https://doi.org/10.1038/s41366-019-0453-6>
- McGuire, S. (2012). Institute of medicine (IOM) early childhood obesity prevention policies. Washington, DC: The National Academies Press; 2011. *Advances in Nutrition*, 3(1), 56–57. <https://doi.org/10.3945/an.111.001347>
- Moore, C., Oliver, T. L., Randolph, J., & Dowdell, E. B. (2022). Interventions for reducing weight bias in healthcare providers: An interprofessional systematic review and meta-analysis. *Clinical Obesity*, 12(6). <https://doi.org/10.1111/cob.12545>
- Moss, K. M., Dobson, A. J., Tooth, L., & Mishra, G. D. (2020). Associations between feeding practices in infancy and fruit and vegetable consumption in childhood. *British Journal of Nutrition*, 124(12), 1320–1328. <https://doi.org/10.1017/s000711452000238x>
- National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Food and Nutrition Board; Roundtable on Obesity Solutions. (2017). *The challenge of treating obesity and overweight: Proceedings of a workshop*. National Academies Press. <https://www.proquest.com/docview/2135070672/139457B135E043F3PQ/1?sourcetype=Books>
- O'Brien, K., Agostino, J., Ciszek, K., & Douglas, K. A. (2022). Parents' perceptions of their child's weight among children in their first year of primary school: A mixed-methods analysis of an Australian cross-sectional (complete enumeration) study. *International Journal of Obesity*, 46(5), 992–1001. <https://doi.org/10.1038/s41366-022-01068-5>
- Ockene, J. K., Ashe, K., Peterson, K. S., Fitzgibbon, M., Buscemi, J., & Dulin, A. (2020). Society of behavioral medicine call to action: Include obesity/overweight management education in health professional curricula and provide coverage for behavior-based

- treatments of obesity/overweight most commonly provided by psychologists, dieticians, counselors, and other health care professionals and include such providers on all multidisciplinary teams treating patients who have overweight or obesity. *Translational Behavioral Medicine*, 11(2), 653–655. <https://doi.org/10.1093/tbm/ibaa030>
- Poorolajal, J., Sahraei, F., Mohamdadi, Y., Doosti-Irani, A., & Moradi, L. (2020). Behavioral factors influencing childhood obesity: A systematic review and meta-analysis. *Obesity Research & Clinical Practice*, 14(2), 109–118. <https://doi.org/10.1016/j.orcp.2020.03.002>
- Premkumar, S., Ramanan, P. V., & Iakshmi, D. (2019). Rural childhood obesity – an emerging health concern. *Indian Journal of Endocrinology and Metabolism*, 23(3), 289. [https://doi.org/10.4103/ijem.ijem\\_649\\_18](https://doi.org/10.4103/ijem.ijem_649_18)
- Quaidoo, E., Ohemeng, A., & Amankwah-Poku, M. (2018). Sources of nutrition information and level of nutrition knowledge among young adults in the accra metropolis. *BMC Public Health*, 18(1). <https://doi.org/10.1186/s12889-018-6159-1>
- Raynor, H. A., Propst, S., Robson, S., Berlin, K. S., Barroso, C. S., & Khatri, P. (2022). Implementing prevention plus with underserved families in an integrated primary care setting. *Childhood Obesity*, 18(4), 254–265. <https://doi.org/10.1089/chi.2021.0071>
- Renales, F., Whitted, K., & Lennen, N. (2021). Assessing parental perceptions on childhood obesity: An educational intervention. *Pediatric Nursing*, 47(1), 23–29. <https://www.proquest.com/docview/2492325206/4212CE5004374E8FPQ/1?sourcetype=Scholarly%20Journals>

- Rhee, K. E., Kessler, S., Lindback, S., Littman, M., & El-Kareh, R. E. (2018). Provider views on childhood obesity management in primary care settings: A mixed methods analysis. *BMC Health Services Research, 18*(1). <https://doi.org/10.1186/s12913-018-2870-y>
- Ritten, A., & LaManna, J. (2017). Unmet needs in obesity management. *Journal of the American Association of Nurse Practitioners, 29*(S1), S30–S42. <https://doi.org/10.1002/2327-6924.12507>
- Robert Wood Johnson Foundation. (2023). *Ages 2-4 - state of childhood obesity*. State of Childhood Obesity. <https://stateofchildhoodobesity.org/demographic-data/ages-2-4/>
- Robert Wood Johns Foundation. (2024). *Ages 10-17-state of childhood obesity*. State of Childhood Obesity. <https://stateofchildhoodobesity.org/demographic-data/ages-10-17/>
- Roberts, K. J., & Polfuss, M. L. (2022). Weight stigma in children and adolescents. *Nursing, 52*(6), 17–24.
- Rogge, M., & Merrill, E. (2012). Obesity education for nurse practitioners: Perspectives from nurse practitioner faculty. *Journal of the American Association of Nurse Practitioners, 25*(6), 320–328. <https://doi.org/10.1111/j.1745-7599.2012.00785.x>
- Sanyaolu, A., Okorie, C., Qi, X., Locke, J., & Rehman, S. (2019). Childhood and adolescent obesity in the united states: A public health concern. *Global Pediatric Health, 6*, 2333794X1989130. <https://doi.org/10.1177/2333794x19891305>
- Shah, B., Tombeau Cost, K., Fuller, A., Birken, C. S., & Anderson, L. N. (2020). Sex and gender differences in childhood obesity: Contributing to the research agenda. *BMJ Nutrition, Prevention & Health, 3*(2), 387–390. <https://doi.org/10.1136/bmjnph-2020-000074>

- Skinner, A., Ravanbakht, S. N., Skelton, J. A., Perrin, E. M., & Armstrong, S. C. (2018). Prevalence of obesity and severe obesity in us children, 1999–2016. *Pediatrics*, *141*(3). <https://doi.org/10.1542/peds.2017-3459>
- St. Pierre, C., Ver Ploeg, M., Dietz, W. H., Pryor, S., Jakazi, C. S., Layman, E., Noymer, D., Coughtrey-Davenport, T., & Sacheck, J. M. (2022). Food insecurity and childhood obesity: A systematic review. *Pediatrics*, *150*(1). <https://doi.org/10.1542/peds.2021-055571>
- Suire, K. B., Kavookjian, J., & Wadsworth, D. D. (2020). Motivational interviewing for overweight children: A systematic review. *Pediatrics*, *146*(5). <https://doi.org/10.1542/peds.2020-0193>
- U.S. Department of Health and Human Services. (n.d.). *Overweight and obesity - healthy people 2030*. Healthy People 2030. <https://health.gov/healthypeople/objectives-and-data/browse-objectives/overweight-and-obesity>
- U.S. Department of Health and Human Services. (2021). *National Health and Nutrition Examination Survey 2017–March 2020 prepandemic data files development of files and prevalence estimates for selected health outcomes* (Number 158) [Report]. <https://doi.org/https://stacks.cdc.gov/view/cdc/106273>
- U.S. Department of Health and Human Services Administration. (2015). *The health and well-being of children in rural areas: A portrait of the nation 2011-2012* [PDF]. HRSA Maternal & Child Health Bureau. <https://mchb.hrsa.gov/sites/default/files/mchb/data-research/nsch-health-well-child-rural-04-2015.pdf>
- United States Preventative Task Force. (2017, June 20). *Recommendation: Obesity in children and adolescents: Screening*. Retrieved February 25, 2023, from



<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/obesity-in-children-and-adolescents-screening>

University of Iowa Hospitals and Clinics. (2023). *The iowa model revised: Evidence-based practice to promote excellence in health care*. University of Iowa Hospitals & Clinics. <https://uihc.org/iowa-model-revised-evidence-based-practice-promote-excellence-health-care>

Vallabhan, M. K., Jimenez, E. Y., Nash, J. L., Gonzales-Pacheco, D., Coakley, K. E., Noe, S. R., DeBlicek, C. J., Summers, L. C., Feldstein-Ewing, S. W., & Kong, A. S. (2018). Motivational interviewing to treat adolescents with obesity: A meta-analysis. *Pediatrics*, *142*(5). <https://doi.org/10.1542/peds.2018-0733>


Verhage, C. L., Gillebaart, M., van der Veek, S. M., & Vereijken, C. M. (2018). The relation between family meals and health of infants and toddlers: A review. *Appetite*, *127*, 97–109. <https://doi.org/10.1016/j.appet.2018.04.010>






Vittrup, B., & McClure, D. (2018). Barriers to childhood obesity prevention: Parental knowledge and attitudes. *Pediatric Nursing*, *44*(2), 81–94. <https://link.gale.com/apps/doc/A536534220/AONE?u=googlescholar&sid=bookmark-AONE&xid=6022b598>

Woolford, S. J., Resnicow, K., Davis, M. M., Nichols, L. P., Wasserman, R. C., Harris, D., Gebremariam, A., Shone, L., Fiks, A. G., & Chang, T. (2022). cost-effectiveness of a motivational interviewing obesity intervention versus usual care in pediatric primary care offices. *Obesity*, *30*(11), 2265–2274. <https://doi.org/10.1002/oby.23560>

World Health Organization. (2021, June 9). *Obesity and overweight*. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>

## APPENDIX A. APPROVAL FOR EDUCATIONAL VIDEO USE


 Torres, Savanna <storres@aap.org>  
To: Mettler, Nora

      
Mon 4/3/2023 12:39 PM

Hello,

Thank you for your email! Yes, you are free to use the video for this purpose. Please let me know if you have any questions.

Best,  
Savanna Torres



## APPENDIX B. IOWA MODULE APPROVAL

5/2/23, 1:08 PM

Mail - Mettler, Nora - Outlook

### Permission to Use The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care

Kimberly Jordan - University of Iowa Hospitals and Clinics <survey-bounce@survey.uiowa.edu>

Tue 5/2/2023 1:08 PM

To: Mettler, Nora <nora.mettler@ndsu.edu>

You have permission, as requested today, to review and/or reproduce *The Iowa Model Revised: Evidence-Based Practice to Promote Excellence in Health Care*. Click the link below to open.

[Iowa Model - 2015.pdf](#)

Copyright is retained by University of Iowa Hospitals and Clinics. **Permission is not granted for placing on the internet.**

**Reference:** Iowa Model Collaborative. (2017). Iowa model of evidence-based practice: Revisions and validation. *Worldviews on Evidence-Based Nursing*, 14(3), 175-182. doi:10.1111/wvn.12223

In written material, please add the following statement:

*Used/reprinted with permission from the University of Iowa Hospitals and Clinics, copyright 2015. For permission to use or reproduce, please contact the University of Iowa Hospitals and Clinics at 319-384-9098.*

Please contact [UIHCNursingResearchandEBP@uiowa.edu](mailto:UIHCNursingResearchandEBP@uiowa.edu) or 319-384-9098 with questions.

## APPENDIX C. NDSU IRB APPROVAL



09/18/2023

Dr. Heidi Lynn Saarinen  
Nursing

Re: IRB Determination of Exempt Human Subjects Research:  
Protocol #IRB0004861, "Childhood obesity conversations: Motivational interviewing for the brief primary care visit"

NDSU Co-investigator(s) and research team:

- Heidi Lynn Saarinen
- Nora Cecelia Mettler

Approval Date: 09/18/2023

Expiration Date: 09/17/2024

Study site(s): Research will be conducted online through collaboration between North Dakota State University and Essentia Health.

Funding Source:

The above referenced human subjects research project has been determined exempt (category 2,3) in accordance with federal regulations (Code of Federal Regulations, Title 45, Part 46, *Protection of Human Subjects*).

Please also note the following:

- The study must be conducted as described in the approved protocol.
- Changes to this protocol must be approved prior to initiating, unless the changes are necessary to eliminate an immediate hazard to subjects.
- Promptly report adverse events, unanticipated problems involving risks to subjects or others, or protocol deviations related to this project.

Thank you for your cooperation with NDSU IRB procedures. Best wishes for a successful study.

*NDSU has an approved FederalWide Assurance with the Department of Health and Human Services: FWA00002439.*

## APPENDIX D. ESSENTIA HEALTH IRB APPROVAL



August 25, 2023

To Whom It May Concern:

Re: Childhood obesity conversations: Motivational interviewing for the brief primary care visit

Thank you for submitting the Human Subject Research Determination Form and information for the project listed above. Based on a review of the documentation you provided, this project does not meet the definition of research with human subjects, according to the Office of Human Research Protections (OHRP) [guidance](#): "Research means a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge."

Because the project does not meet the federal definition of human subjects research, it will not require further review by the Essentia Health Institutional Review Board or a scientific review committee. However, this determination applies only to the finding of Not Human Subjects Research (NHSR) and does not reflect IRB approval of the project itself. You are advised to confirm the approval of this quality improvement project with the appropriate leadership and/or section chair. You may also wish to consult with Essentia Health's Quality department to ensure it aligns with the system's quality improvement plans. If, during the process of data collection or analysis, it becomes clear that findings could be generalizable or benefit others, please submit your project for IRB review at that time.

If you have any questions concerning this letter, please contact me at [IRB@EssentiaHealth.org](mailto:IRB@EssentiaHealth.org).

I wish you success with your project.

Sincerely,

A handwritten signature in cursive script that reads "Deneice Kramer".

Deneice Kramer, MBA, MA, CCRP  
Compliance Manager, Human Research Protection Program

## APPENDIX E. PRE-SURVEY QUESTIONNAIRE

Q45 Please enter a unique identifier that will be used to link the first part of the project to the one-month follow-up. The unique identifier should be the first letter of your mother's maiden name, the first letter of the high school you attended, the first number of your home address, and the first letter of your birth month. Example: s11d

---

---

Q1 What is your education level

- APRN-MSN
  - APRN- DNP
  - PA
  - MD
- 

Q2 What setting is your clinic?

- Family Practice
  - Weight- Management Clinic
-

Q3 Where are you practicing?

Urban

Rural

---

Q4 How many years have you been in practice?

Less than one year

1-5 years

5-10 years

>10 years

---

Q5 How often do you see children who have overweight or obesity?

Never

2-3 days per week

More than 3 days per week

Everyday

Other (Please specify) \_\_\_\_\_

---

Q6 On a scale of one (least) and 10 (most), what is your perceived confidence level in managing pediatric patients with overweight or obesity?

	1 (Least)	2	3	4	5	6	7	8	9	10 (Most)
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q7 How often do you address weight-related issues with patients who have overweight or obesity?

- Less than 25% of patients
  - 25-50% of patients
  - 50-75% of patients
  - >75% of patients
- 

Q8 Have you previously had specific training on obesity conversations?

- Yes
  - No
-



Display This Question:

*If Have you previously had specific training on obesity conversations? = Yes*

Q9 Where did you complete this education (examples: formative education, employer, conference, CEUs)

---

---

---

---

---

Display This Question:

*If Have you previously had specific training on obesity conversations? = Yes*

Q10 How was the education presented? (Select all that apply)

- Formative Lecture
  - Educational Video
  - Simulation Setting
  - Other (Please Specify)
- 

Display This Question:

*If Have you previously had specific training on obesity conversations? = Yes*



Q11 How many hours of education did you complete?

---

Q12 Have you ever had specific training in motivational interviewing?

Yes

No

---

*Display This Question:*

*If Have you ever had specific training in motivational interviewing? = Yes*

Q13 What type of motivational interviewing training did you have? (Select all that apply)

Short Talk

Online Modules

In-person Training

Other (Please Specify)

---

---

*Display This Question:*

*If Have you ever had specific training in motivational interviewing? = Yes*



Q14 How many hours of motivational interview training have you received?

---

Q15 Was there specific motivational interviewing training in your formative schooling?

Yes

No

---

*Display This Question:*

*If Was there specific motivational interviewing training in your formative schooling? = Yes*

Q16 What did that education entail? (Select all that apply)

Formative Lecture

Educational Video

Simulation Setting

Other (Please Specify)

---

Q17 What type of formative education did you complete?

- Online Only
  - In-person only
  - Hybrid
- 

Q18 Do you feel you have had adequate education in motivational interviewing techniques?

- Yes
  - No
- 

Q19 How would you rate your current knowledge level of motivational interviewing during weight-related conversations?

- None
  - Little
  - Some
  - Quite a Bit
-

Q20 How confident are you in your motivational interviewing techniques concerning weight-related conversations and the promotion of healthy lifestyle choices?

- Very Uncomfortable
  - Somewhat Uncomfortable
  - Neither Comfortable or Uncomfortable
  - Somewhat Comfortable
  - Very Comfortable
- 

Q21 On a scale of 1 (least) and 10 (most), what is your perceived level of confidence in managing children with overweight or obesity?

	1 (least)	2	3	4	5	6	7	8	9	10 (most)
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q22 What are some barriers to having weight-related conversations with patients (Select all that apply)

- Lack of time during the appointment
  - Lack of education
  - Lack of confidence in skills
  - Lack of reimbursement
  - Prioritization of other health concerns
  - Lack of experience
  - Organizational constraints
  - Other (please specify)
- 

Q23 Rank your barriers to having weight-related conversations from highest to lowest.

- \_\_\_\_\_ Lack of time during the appointment
- \_\_\_\_\_ Lack of education
- \_\_\_\_\_ Lack of confidence in skills
- \_\_\_\_\_ Lack of reimbursement
- \_\_\_\_\_ Prioritization of other health concerns
- \_\_\_\_\_ Lack of experience
- \_\_\_\_\_ Organizational constraints
- \_\_\_\_\_ Other (Please Specify)

Q24 Having overweight or obesity increases a patient's risk of developing \_\_\_\_\_. (Select all that apply)

- Depression
  - Low-Self Esteem
  - Diabetes
  - Heart Disease
  - Hypertension
  - Cancer
  - None of the above
- 

Q25 Do you perceive obesity to be more of a public or private issue

- Public
  - Private
  - Both
-

Q26 How much responsibility do certain people have in talking about childhood obesity?

	None at all	A little	A moderate amount	A lot	A great deal
Patient	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Healthcare providers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Schools	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Food Industry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Government	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---



Q27 Please indicate how much you feel you know about the following.

None at all

A little

A moderate amount

A lot

A great deal

Your role in the treatment and management of childhood obesity

Indications for weight-related conversations

Initiating weight-related conversations

Interview questions to ask of patients with overweight or obesity

Using patient-first language in conversations with patients

How to increase parental awareness to childhood obesity

Giving preventative education to patients and parents

Identifying risk factors

Addressing cultural norms that increase overweight and obesity

Community resources available to you as a healthcare provider

Explaining the role of BMI to patients

Q28 Please respond accordingly to the following statements.	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Patients are solely responsible for their weight status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Childhood obesity leads to comorbidities in adulthood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivational interviewing helps prevent obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have perceived weight bias	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is weight bias in my place of employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My place of employment is welcoming to those with overweight or obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel prepared to have weight-related conversations

Weight stigmatization leads to binge eating and avoidance of healthcare in people with overweight or obesity

Weight stigmatization leads to motivation to change

Telling parents their child's BMI will decrease the child's BMI over time

I know the four processes of motivational interviewing

Q29 Please respond accordingly to the following statements.	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am comfortable initiating weight-related conversations with parents of children with overweight or obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable initiating weight-related conversations with children with overweight or obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Healthcare workers have a responsibility to address weight at every visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I have sufficient training to initiate weight-related conversations

I am confident in addressing weight-related problems with my patients

I am confident in providing patient-first language to patients who have overweight or obesity



Q30 Do you feel prepared for weight-related conversations (why or why not)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

---

Q31 What resources/guidelines do you currently use for childhood obesity prevention, treatment and management?

---

---

---

---

---

## APPENDIX F. POST-SURVEY QUESTIONNAIRE

Q34 On a scale of 1 (least) to 10 (most), what is your perceived level of confidence in managing children with overweight or obesity?

	1 (least)	2	3	4	5	6	7	8	9	10 (most)
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Q35 I plan to make the following changes to my practice regarding motivational interviewing.

Modify communication with patients, partners, caregivers, and/or members of the healthcare team

Discuss new learning with my peers

None, the activity validated my current practice

Other \_\_\_\_\_

---





Q36 What is your level of commitment to making the changes at initiating and sustaining weight-related conversations with patients?

Very

Somewhat

Not very

I do not expect a change

Q37 Please indicate how much you feel you know about the following.

None at all

A little

A moderate amount

A lot

A great deal

Your role in the treatment and management of childhood obesity

Indications for weight-related conversations

Initiating weight-related conversations

Interview questions to ask of patients with overweight or obesity

Using patient-first language in conversations with patients

How to increase parental awareness to childhood obesity

Giving preventative education to patients and parents

Identifying risk factors

Addressing cultural norms that increase overweight and obesity

Community resources available to you as a healthcare provider

Explaining the role of BMI to patients

Q38 Please respond accordingly to the following statements.	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Patients are solely responsible for their weight status	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Childhood obesity leads to comorbidities in adulthood	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivational interviewing helps prevent obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have perceived weight bias	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is weight bias in my place of employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My place of employment is welcoming to those with overweight or obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel prepared to have weight-related conversations

Weight stigmatization leads to binge eating and avoidance of healthcare in people with overweight or obesity

Weight stigmatization leads to motivation to change

Telling parents their child's BMI will decrease the child's BMI over time

I know the four processes of motivational interviewing

Q39 Please respond accordingly to the following statements.	Strongly Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
I am comfortable initiating weight-related conversations with parents of children with overweight or obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable initiating weight-related conversations with children with overweight or obesity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Healthcare workers have a responsibility to address weight at every visit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I have sufficient training to initiate weight-related conversations

I am confident in addressing weight-related problems with my patients

I am confident in providing patient-first language to patients who have overweight or obesity

This educational video helped me initiate weight-related conversations

Q40 Do you feel you are prepared to have weight-related conversations? Why or why not?

---

---

---

---

---

---

Q41 Share any overall comments about the practice improvement project.

---

---

---

---

---

End of Block: Post- Survey

---



## APPENDIX G. ONE-MONTH FOLLOW-UP SURVEY QUESTIONNAIRE

### One-Month Post-Follow-up Questions

1. Did you implement any of the information you took away from weight-related conversations training into your practice over this last month?
  - a. Yes
  - b. No
  - c. I have not yet had the opportunity to implement these strategies with this patient population

If Yes, how? \_\_\_\_\_

If No, why not?

1. I don't feel I have the time
2. I feel I need more training
3. I have not yet had the opportunity to implement these strategies with this patient population
4. Not sure why
5. Other: \_\_\_\_\_

## APPENDIX H. EXECUTIVE SUMMARY

### Childhood Obesity Conversations:

Motivational Interviewing for the Brief Primary Care Visit

#### Objective:

Increase practitioner confidence in initiating and sustaining weight-related conversations with patients and families with overweight or obesity

#### Methodology:

- Surveys before and after and educational video session with one month follow-up
- Target population was rural weight-management clinic and nurse practitioner fellowship program in Midwest hospital
- 3 participants completed the surveys and educational session

#### Confidence

- Overall increase in perceived confidence
- Overall increase in initiating weight-related conversations with patients and families

#### Education

- All received previous education
- Overall increase in assessment of sufficient training in weight-related conversations
- More CME hours does not mean more confidence

#### Utilization

- 2/3 stated they would make changes to practice after educational session
- 1/3 stated the changes they made at one month follow-up

#### Why is this important?

Childhood obesity is on the rise. There is a lack of weight-related conversation education in formative schooling leading to decrease in confidence in initiating conversation in practice. Recommendations call for MI to be used every time with every patient to negate the complications childhood obesity presents now and into adulthood.

Nora Mettler BSN, RNC-NIC  
Doctor of Nursing Practice Student  
North Dakota State University

Contact Information  
(XXX) XXX-XXXX  
XXXX@gmail.com