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## **Overcoming Improving Providers' Attitude in Addressing Obesity in Patients**

Karene Boone

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Overcoming Barriers and Improving Providers' Attitude in Addressing Obesity in Patients

Karene Boone

Georgia State University

### Abstract

**Problem Statement:** Most nurse practitioners working in retail clinics do not address obesity, although there is an association between obesity and chronic illnesses.

**Purpose:** The DNP project was to determine whether an educational intervention will improve weight loss management by decreasing barriers and improving providers' confidence in the management of obesity. The project's overall goal is to increase the volume of obese patients who receive education on obesity management. The clinical setting for the change project is a retail clinic located in the southeast.

**Method:** Nurse practitioners who work in retail clinics were recruited via email. Participants were given an online pre-intervention survey, a thirty-minute educational intervention, and a post-test. Implementation was guided by the Transtheoretical Model of Change and the 5As of behavioral counseling (Assess, Advise, Agree, Assist, and Arrange). The educational intervention included modules on comorbidities related to obesity, the perception, attitudes, and barriers providers face in addressing obesity, and the healthcare burden caused by obesity. Descriptive and inferential statistics were used in analyzing the data.

**Results:** A total of 23 nurse practitioners participated in the project. There was a statistically significant increase in scores on the providers' confidence in providing weight management education to obese patients. Chart review pre and post-intervention showed no change in provider's documentation on obesity. After the intervention, the practitioner continued to identify additional barriers, including time restraint, lack of referral resources, provider's comfort level, provider's lack of confidence, patient receptiveness, and patients being intimidated by the process. Furthermore, nurse practitioners' providers were concern that patients may lack the

educational level, interest, support system, and willpower, fear from past failures, and maybe in denial and not be ready to lose weight.

**Conclusion:** Among nurse practitioners who practice in retail clinics in the southeast US, an educational intervention can increase confidence in discussing obesity with patients; however, additional changes need to be implemented to address system and personnel barriers.

# IMPROVING PROVIDERS' ATTITUDE IN ADDRESSING OBESITY

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### Background and Significance

Obesity is the abnormal or extreme fat buildup that creates a health risk for an individual. A person with a Body Mass Index (BMI) of 30 or more is considered obese. Obesity develops from the relationship between genes and the environment defined by long-term energy imbalance (Friedman & Flanning, 2004). Obesity increases the risk of developing high blood pressure, diabetes, coronary heart disease, stroke, high cholesterol, gallbladder disease, and some types of cancers (Bornhoeft, 2018).

Obesity is a growing public health concern with worldwide implications (Bornhoeft, 2018). According to the World Health Organization (2016), 1.9 billion adults are overweight, and of these, 600 million overweight people are classified as obese. Obesity is the leading cause of morbidity and mortality rates around the world. In the US alone, 4 million deaths in 2015 were related to obesity (Campbell, 2018). Today, one-third of adults in the US are considered obese, which has led to a healthcare crisis (Seidell & Halberstadt, 2015). Obesity is the leading cause of many preventable diseases, such as type II diabetes, hypertension, cardiovascular disease, and cancer (Baum et al., 2015).

Georgia has the 24th highest adult obesity rate in the nation and the eighth-highest obesity rate for youth ages 10 to 17 years. Currently, Georgia's adult obesity rate is 31.6% (Baum et al., 2015). Among residents of Georgia, heart disease is the leading cause of death. Following this, cancer is the second leading cause of death, stroke is the fifth leading cause of death, and diabetes is the seventh leading cause of death (Center of Disease and Control, 2016). The common risk factor between heart disease, cancer, stroke and diabetes is obesity. Many years of research has resulted in very little progress in diminishing the numbers of obese patients. Obesity continues to show a rising trend in the US (Georgia Department of Public Health, 2014).

Many patients do not see their provider as a source for helping them with their obesity management. Unfortunately, they feel alone; the patient considers this disease as something they need to handle on their own (Barnes, Theeke, & Mallow, 2015). Providers have both directly and indirectly, contributed to this feeling from their avoidance in addressing this health concern (Barnes, Theeke, & Mallow, 2015).

The economic impact of obesity in the United States healthcare system is significant. In the US, obesity caused an increase of \$147 billion in annual expenditure (Bornhoeft, 2018). The direct and indirect costs for medical expenses related to obesity are over \$275 billion annually (Spieker & Pyzocha, 2016). The direct cost of obesity is attributable to treating high-cost comorbidities such as cardiovascular disease (\$193–\$315 billion) and type II diabetes (\$105–\$245 billion) (Spieker & Pyzocha, 2016). Medical expenditures for obesity can rise as high as \$209.7 billion and account for more than 20% of all annual health care spending in the United States (Spieker & Pyzocha, 2016). Economists assess that weight reduction over the next 20 years could yield a saving of over \$610 billion (Spieker & Pyzocha, 2016).

#### Problem Statement

Although obesity is on the rise, there is a decrease in patients who report receiving weight loss management from healthcare providers. Early recognition and treatment by providers for obese patients are essential. The Healthy People 2020 target for health care provider counseling for weight loss among overweight and obese patients is 45.3% (Guglielmo et al., 2018).

At a minimum, providers should discuss lifestyle modification, such as regular exercise and healthy meal choices with obese patients. Providers may have barriers that prevent them from communicating with patients about obesity. Many providers admit that they are not confident in their skills in managing obesity. Healthcare providers also fear that discussing



obesity will adversely affect their relationship with their patients. In addition, providers have negative stigmas and stereotypical ideologies that obese patients are non-compliant, and lack the will power and dedication needed for weight loss. The providers fear the obligation of patients putting all the responsibility on them to provide the necessary resources. The slow process and small success rates involved in losing weight are also a deterrent to patients and their providers (Sontang, Brink, Renneberg, Braun & Heintze, 2012).

The United States Preventive Services Task Force (USPSTF) states in its guidelines that there should be obesity screening and a multi-competent referral of all obese patients (Grossman et al., 2017). There is a growing concern that despite the evidence that obesity is a disease and the cause of many chronic illnesses, many providers have avoided obesity management. Nurse practitioners have the scholarship needed to lead a patient-centered collaborative educational plan that involves the community. The educational plan enables the patients to manage and prevent the disease (Bornhoeft, 2018).

The clinical setting for the change project is in a retail clinic located in southeast Georgia. Retail clinics began in the year 2000 (Godman, 2016). These clinics were first started with the objective of making healthcare more convenient and affordable. Currently, there are over 2000 retail clinics across the United States, located in most large retail chain settings (Godman, 2016). They provide services such as immunizations, sports physicals, some chronic illness management (asthma, diabetes, and hypertension), biometric screens, sinusitis, allergies, upper respiratory infections, strep throat, and influenza diagnoses and treatments.

Retail providers serve as an initial point of contact for many obese patients. However, they have consistently avoided addressing and managing obesity (Hite, Victorson, Elue, & Plunkett, 2018). The concern for this problem has led to the importance of conducting an

evidence-based search to appraise the literature critically and to identify how to improve providers' attitudes towards managing this disease.

Retail clinics in the US are poised to see a broad demographic of patients. Patients range in age from 18 months throughout the life span. Patient visits are usually for acute episodic conditions and some chronic illnesses. Chart reviews have shown that many providers do not utilize the opportunity to address obesity during these visits. Addressing this problem could reduce healthcare costs and aid in health prevention, promotion, and positive patient health outcomes.

#### Purpose of the Project

The purpose of the change project is to provide an evidence-based educational intervention that will identify the barriers providers face and will improve providers' confidence and attitude toward managing patients with Obesity.

#### Clinical Question

Among providers who practice in retail clinics in the southeast United States, will an educational intervention improve providers' attitudes and decrease barriers in addressing obesity management with patient?

#### Search Strategy

Several databases and search engines were used to determine literature relevance to Obesity. They are CINAHL, PubMed, Cochrane Library, AHRQ, and Medline. Google and Google scholar search provided information on professional and government organizations. An in-depth search of numerous works of literature published in peer-reviewed journals and written in English was performed.

A combination of the following search term and keywords identified from the clinical question and the key Boolean search words and phrases were Obesity\* Obesity Management\*, Provider attitude\*, Body Mass Index\* (**BMI\***), Barriers\* and Retail clinic\*. Medical Subject Headings (MESH) terms from CINHALL, resulting in the following keywords: Obesity Management, Provider attitude, Barriers, Retail Clinic, and Primary Care. The following keywords were added during the search process: Obesity (**O**); Obesity Management (**OM**); Provider attitude (**PA**); barriers (**B**) Retail Clinic (**RC**), and Body Mass Index\* (**BMI\***), Obese\*(**O\***); Overweight\*; Challenges\* (**C\***); Perspective (**P\***); fat\* (**F\***). Primary Care (**PC**). Expanders involved applying the related words. Search limit publication years were limited to 2000-2019. The new parameter set includes: source type was limited to an academic journal. Age search limit was all adults 18 years and above.

The initial search yielded 2,169 articles. After applying the search parameters, the search yielded 249. Inclusion criteria involved peer review, evidence-based practice, and randomized control trials. Search criteria included English speaking as the language of choice. The geographic search started internationally and then narrowed to the USA. Inclusion criteria involved primary care setting and providers, whether physicians, nurse practitioners, physician assistants, students, and nurses. Exclusion Criteria excluded literature that focused only on overweight and did not include Obesity that is BMI greater than 30.

Databases searched, and keywords determined. Electronic databases searched, and 107 studies identified and search for relevance. Twenty-six reviews were retained for evaluation, and 81 studies were discarded due irrelevance of the research and duplicated material. Fifteen more studies were identified from the reference list of the chosen 26 studies. Forty-one articles were

critiqued after utilizing the selection criteria. Finally, 11 articles were designated for appraisal due to their similarity to the project.

The Grading of Recommendations, Assessment, Development, and Evaluations (GRADE) are used to appraise the literature and the level of evidence. It is the most widely adopted tool used for grading the quality of evidence (Mustafa et al., 2013). GRADE classify the quality of evidence has high quality, moderate quality, low quality, and very low quality (Guyatt et al., 2008). The strength of recommendation is either strong or weak (Guyatt et al., 2008).

#### Review of the Literature

A meta-analysis conducted by Best, Avenell, and Bhattacharya (2017) to determine if a non-surgical intervention for overweight and obese men and women were effective at improving fertility. Finding supported the existing evidence that obesity did influence the ability to become pregnant and have live births. The significance of the findings suggests to providers that individuals desiring to become pregnant should be aware that obesity could have a detrimental effect on the ability to conceive and the number of live births (Best, Avenell and Bhattacharya's, 2017).

A second meta-analysis by Guh and colleagues (2009) was done to evaluate the relationship between the incidence of comorbidities and obesity. The study concluded that there is a correlation between obesity and many chronic illnesses such as cancer, cardiovascular disease, and type II diabetes. Findings suggest that maintaining a healthy weight will reduce the possibility of these comorbidities and significantly reduce healthcare costs (Guh et al., 2009).

A third meta-analysis involved the effects of primary care interventions on managing obesity in pediatrics. This article differed from the other studies in that the result suggest that there was the only marginal effect of the intervention on body mass index. The researcher found

that primary care interventions such as patient education, patient-centered discussions, follow up phone visits, and phone calls had minimal effect on reducing weight in pediatric clients. There was a significant but minute reduction in BMI z score (0.04, [95% confidence interval, -0.08 to -0.01];  $P=.02$ ), and a non-significant effect on associated health benefit standardized mean difference from 0.00 [95% confidence interval, -0.21 to 0.22];  $P=.98$ ) (Sim, Lebow, Zhen, Koball, & Murad, 2016). The practice guideline recommended that primary care providers include BMI surveillance and counseling into routine practices for children and adolescent. The study recommendations involved new practice guidelines and new approaches to address the problem (Sim, Lebow, Zhen, Koball, & Murad, 2016).

A qualitative study examined the perceptions, attitudes, and behavior of 12 primary care providers (six physicians, and six nurse practitioners) towards obesity in a primary care setting. Providers expressed a lack of time and reimbursement for treating obesity. Providers report limited awareness or access to guidelines, limited knowledge on effective counseling, and a lack of confidence to address obesity with patients. Additionally, the providers were concerned about the patient readiness and compliance with obesity management. There are also organizational obstacles such as system beliefs, values and attitudes. Participants were unaware of any educational programs on obesity awareness and managements sponsored by the organization. The result of the study suggests similar findings that primary care providers are not adequately managing obesity. The study further recommends an integrated approach in approach to managing obesity. The integrated approach places the emphasis on the patient satisfaction, population health and a reduction in healthcare cost (Bornhoeft, 2018). The training recommended are Motivational Interviewing (MI) and the Five A's. The Five A's: Assess,

Advise, Agree, Assist, and Arrange, healthcare providers to encourage behavior change among their patients have used this behavior change model (Bornhoeft, 2018).

Findholt, Davis, and Michael (2013) in a qualitative research study, found that providers in rural primary care settings have expansive obstacles and challenges that include time constraints, limited knowledge by clinicians, low-income families, no family support, a lack of patient motivation, and no physician reimbursement. Recommendations include the implementation of guideline practices for assessment, treatment, and prevention of obesity. The authors also recommend hiring a nurse to do case management, counseling, group visits, and telehealth.

Sonntag, Brink, Renneberg, Braun, and Heintze (2012) in a qualitative research looked at the providers' attitudes and the barriers in diagnosing and treating obesity. The results were mixed. A majority of the providers felt they were not responsible for weight loss management of their patients and wanted to maintain a passive role in addressing this health concern. The authors recommended obesity-specific knowledge and training to healthcare providers and collaboration with other healthcare professionals, including psychologists, nurses, and dieticians. This interdisciplinary management team's job is to coordinate the prevention and treatment of obesity.

In a quantitative research study, Hite, Victorson, Elue, and Plunkett, (2018) concluded that primary care physicians admitted not to routinely discuss obesity with their patients, and many admitted to not having the knowledge base on treatment options. The implication is that more research is needed in the different practice settings and the need to assess mid-level providers since only primary care physicians are included in this study. The study suggests that

more research is needed to see how collaborating with other providers could decrease the burden of obesity management.

Wolf, (2010) in a quantitative study found that physician assistant students had biases towards obese patients that were similar to the prejudice that exists amongst other healthcare professionals. The recommendation is that the educators attempt to change this negative attitude towards Obesity before they become practicing clinicians

Kaplan et al., (2018) is a Cross-sectional, descriptive and explorative study that looked at the attitudes and perception of people who are obese, their healthcare providers, and employer representatives. The results showed that only 23% of people with Obesity achieved a 10% weight loss. Only 54% worried about future comorbidities from being obese. A further 50% of obese patients never even saw themselves as being obese. Their physicians gave 55 % of the obese patients a diagnosis of Obesity. A scheduled follow-up for patients who their physician had an initial weight management conversation was 24%. The majority of the patients with Obesity did not see employer-sponsor wellness as helping to promote weight loss; only 17% thought it was helpful. This study's results imply that although Obesity is perceived as a disease, it is not treated as such. The research highlights that the implications of Obesity are not fully understood by many. The obese patients need to be self-motivated as well as seek medical management on their own.

The United States Preventive Services Task Force Recommendation Statement (2013) hypothesis tested whether the implementation of the 5AsT will increase the management visit per FTE conducted by primary care networks, registered nurses, and nurse practitioners. The result provides a useful tool in that the 5AsT can be replicated in a primary care setting in the management of weight loss. It has proven to increase the quality of evidence-based health

outcomes in addressing obesity (Campbell-Scherer et al., 2014). The United States preventive task force adopted the 5As theory because it is judged to have the highest degree of empirical support and due to its prevalence in several kinds of literature. 5A's model can be completed in 10 minutes or less, which makes it easy to apply in office settings.

The purpose of the literature review was to improve providers' compliance with the national clinical practice guidelines for the assessment, diagnosis, and management in the treatment of adults with obesity. The results demonstrated that the medical assistant increased their documentation in charting height and weight for patients' BMI by 13%. However, the primary care providers showed marginal improvement in the literature and management of obese patients. The recommendations were that future studies look at obstacles that prevent sticking to the practice guidelines for obesity. They also recommend an inter-professional team to assist in the management of obesity (Barnes, Theeke, Mallow, 2015).

#### Conceptual/Theoretical Framework

Prochaska and DiClemente developed the Transtheoretical Model (TTM) in the 1980's (Pro-Change Behavior Systems, Inc., 2018). TTM was formulated to promote behavioral change in individuals. The TTM principle of change spans over 35 years of scientific research, over \$80 million worth of grants and 150,000 research participants. The TTM brings together the best philosophies and ideologies and practices of prominent theories of counseling and behavior change. Many professionals use the theory worldwide (Pro-Change Behavior Systems, Inc., 2018). This theory involves five stages, the pre-contemplation, contemplation, preparation, action, and maintenance. Pre-contemplation consists of having no intention of changing behavior soon. In this stage, the pros for changing the behavior outweigh the cons of adhering to he



behavior. This period is approximately no more than six months. In this stage one confirms their lack of commitment to change (Clark, 2013).

Contemplation stage is the intention to make the change in the next six months. The individual is uncertain and starts looking at the pros and cons. In this stage, there is an equal battle between the pros and cons causing the individual to be unsure of what decision to make. It is a period of introspection where present behavior is assessed, and evaluation of risk factors takes place (Pro-Change Behavior Systems, Inc., 2018). Preparation stage involves being ready to act and having the necessary tools to do so. This stage involves earnest intent to change in the next thirty days. This individual may have already taken steps to change, such as examining the evidence and collaborating with others. They will have a self-change approach. This individual is most likely to be successful in making the change because of self-motivation (Pro-Change Behavior Systems, Inc., 2018).

The action involves making the behavioral change. The observed behavior can tell that a change has taken place. There is a measurable modification change that takes place in the course of the last six months (Clark, 2013). Maintenance is where the behavior is formed and is now a habit. The individual is consistent with practice and makes every effort not to return to previous patterns. A change has taken place if the behavior is constant for a period of six months to five years (Clark, 2013). The TTM incorporates a component of Bandura's self-efficacy theory. This theory mirrors the individual level of self-assuredness in ensuring that triggers that promote relapse in behavior do not occur. It also accounts for the point of temptation and the feeling of wanting to relapse to previous actions in high-risk scenarios (Pro-Change Behavior Systems, Inc., 2018).

In the pre-contemplation and contemplation stages, the enticement to participate in the problematic conduct is far superior to the self-efficacy to refrain. As individuals move from Preparation to Action, the gap between feelings of self-efficacy and temptation closes, and behavior change is achieved. Relapse often occurs in situations where feelings of temptation trump individuals' sense of self-efficacy to maintain the desired behavior change (Pro-Change Behavior Systems, Inc., 2018).

The TTM model of change is simple and clear. It guides research and add to the nurse's knowledge. This theory has empirical precision and has a broad scope making it a significant method to use in practice (Alligood, & Marriner-Tomey, 2010). The change project addresses provider's attitude and overcoming barriers in managing overweight and obese patients. The TTM model of change when applied changes provider's perspective in managing overweight and obesity. The theory that describes, explain, predicts, and reflects the student investigators interest is the TTM model of change. The TTM model of change is the theoretical framework.

The TTM was first used as an experimental tool to enhance behavioral change in people who smoke (Bakan & Erci, 2018). It combines TTM psychotherapy and behavioral change theories. Post-training resulted in a decline in the nicotine dependence level, and temptation scale and positive attitudes about smoking mean scores (Bakan & Erci, 2018). However, there was an increase in the process of Behavioral Change Scale, Self-efficacy Scale and negative attitudes about smoking mean scores.

Changes in the Process of Behavioral Change Scale, Temptation Scale, Self-efficacy Scale, and positive attitudes about smoking mean scores were found to be statistically significant (Bakan & Erci, 2018). The results showed that there was an increase in the participant's awareness that smoking is harmful to the body. They were responsive to the fact and were sure

that it works. They were at a level where they could decide to stop smoking. They were confident in this behavior change.

The Transtheoretical Model fits this study design because it incorporates self-efficacy and confidence. Pre and post-test surveys were useful in assessing the degree of confidence that the nurse practitioners have towards addressing obesity management with patients. The TTM was utilized to decrease barriers, increase providers' confidence in addressing obesity in patients, and assess for documentation of obesity in the electronic medical record.

The providers in the retail clinic setting prior to the educational intervention were in the pre-contemplative stage where they have no plans of changing their current attitude toward overweight and obesity. Through education, providers entered into the contemplative phase of weighing the Pros and cons of managing obesity. The pros override the disadvantages and Providers should have moved into the action stage of addressing and managing overweight patients with appropriate referrals. Providers will continue maintenance of practice by resisting any urge to relapse into old patterns. Patient health will improve through behavior modification and leading to an overall healthier society.

The US Preventive Services Task Force (USPSTF), states that for all behavioral risk factors such as obesity, smoking and alcohol counseling should be specialized for each patient based on the way they feel about changing and should entail the patient taking an active role in developing the momentum and plan how to improve (Grossman et al., 2017).

The study recommends face to face counseling by Clinician and follow-up calls during the change process. This allows the patient to see the importance of compliance. The Five A's of behavior change are Ask, Advise, Assess, Assist and Arrange) (Campbell-Scherer et al., 2014). The "ask" involves asking the patient if they are willing to change lifestyle to manage weight

loss. The “advise”, the practitioner advised patient of the necessary steps involved in explicit personalized terms. The “assess”, provider assesses patient willingness to follow through then, “assist and arrange”, the provider assist arranges for follow-up and support (Epling, 2014).

The student investigator, also view to a lesser extent the middle range theorist that fits into this criterion. The name is Ida Jean Orlando (Pelletier). Pelletier developed the theory of change model to prove that nurses were not robots who acted off physician's orders and institutional policies. This along with other factor infuriated Pelletier and led to the development of this model. She is known as the pioneer for patient-centered care (Tyra, 2018).

The wide acceptance of Pelletier theory in the nursing arena speaks for itself. This theory is known as the nursing process in which one assesses, plan, implement and evaluate. Pelletier theory of change is a conceptual framework that has all the necessary components of the nursing process. The theory has been tested in research and has been proven to have valid empirical evidence. Pelletier work has clarity, simplicity, generality, practical precision, efficient, and effective outcomes (Tyra, 2018).

Pelletier's nursing process is a part of the change project. The assessment phase is the barriers and attitudes of providers in assessing the overweight and obese patient. The plan is to change the views of the providers and identify and address the barriers to managing obesity in the clinics. The intervention involves the teaching tools that will bring awareness to providers. The evaluation tells how effective intervention and goals are. The nursing process also addresses the patient mindset. It looks at what is needed to bring about a change in obese patient behavior and attitude to weight loss and a healthy lifestyle. The plan is to increase confidence in the patient of their ability to successfully lose weight through lifestyle modification. Implementation

involves providing the resource and support patient need. The outcome goal is that patient will be able to modify their behavior successfully, and it will be a lifetime change (McCaffrey, 2012).

In conclusion, the TTM model provides a description, explanation, and prediction of the nursing phenomena that sparks the author's interest. The TTM has already been tested and has proven to be reliable. It is currently the framework of my change project. These theories will add evidence-based research knowledge to practice and improve healthcare outcomes.

### Methodology

#### **Recruitment**

The participants in the project are nurse practitioners working in one of the 27 retail clinics in the southeast US. The nurse practitioners were recruited via email. The email contained details on the project. The invitations were sent to approximately 70 nurse practitioners working in retail clinics. The target sample size was 50 nurse practitioners. A follow-up email was sent informing the participants of the educational training. Inclusion criteria involve English-speaking nurse practitioners between the ages of 21 through 80 years. Male and female nurse practitioners were invited to participate in the study. Exclusion criteria are nurse practitioners that do not work in the particular brand of retail clinics in the southeast of Georgia.

#### **Setting**

The clinical settings were retail clinics located in southeast, US There are 27 retail clinics located in southeast US. There are approximately 70 nurse practitioners that rotate through these clinics. The nurse practitioners that work in these clinics work on a full time, part-time and per diem basis. Patients can make appointments online, or walk. The average patient volume is 15-22 patients per day. The nurse practitioner is a solo provider in these clinic settings.

Retail providers serve as an initial point of contact for many obese patients. However, nurse practitioners have avoided addressing and managing obesity (Hite, Victorson, Elue, & Plunkett, 2019). The UPSTF obesity guidelines recommend that all obesity patients should be screen and referred for obesity management (Bornhoeft, 2018). Failing to address obesity keeps the patient at risk for heart disease, cancer, stroke and diabetes.

### **Instruments**

A pre and post-intervention surveys sent via email with a link to Survey planet. The surveys utilized a ten-point Likert scale adapted from the confidence ruler and the Academic Behavioral Confidence scale (ABC). Questions one through nine utilized a ten-point Likert type scale with 0 = not confident at all, 10 = Extremely confident. Questions 10-18 are a five-point Q Likert scale of 1=Strongly Disagree, Agree. 2=Disagree), 3=Uncertain, 4=Agree, and 5=Strongly.

The confidence ruler and the ABC scale have been used in other studies and have performed well in test and re-test reliability, and have been found to be dependable (Rodda, Lubman, Iyer, Gao, & Dowling, 2015). They have been used in treating certain addictive behaviors such as gambling and cigarette smoking. They help to determine an individual's readiness and confidence to change (Rodda et al., 2015). Nurse practitioners are familiar with these tools because they periodically have to fill out similar surveys as part of the job requirement.

The educational tool used was an 18-slide online format PowerPoint presentation entitled overcoming barriers and improving providers' confidence in addressing obesity management in patients. The PowerPoint presentation used Evidence-based literature to support

findings on obesity and the importance of obesity management. The electronic medical record was used to evaluate data and track the nurse practitioners' confidence in managing obesity.

### **Data Collection**

The nurse practitioners were given a 19-question pre- and post-intervention survey. The survey utilized a 10-point Likert scale and confidence ruler to assess perceived barriers and confidence in addressing obesity. All the nurse practitioners that volunteered to be a part of the change project signed a consent form electronically. The educational intervention was delivered via online format. Delivering the intervention in this format provided participants with greater flexibility as they could complete the intervention at a time convenient for them, thereby reducing burden of participation. The intervention took approximately 30 minutes to complete. The student investigator reviewed 460 charts. A total of 20 charts per participant were reviewed (10 pre-test, 10 post-test) to evaluate if participants were changing practices related to obesity management post-intervention. Specific factors evaluated include: documentation of patient's height and weight, diagnosis of obesity if BMI greater than and equal to 30, provision of obesity education, and obesity-related referrals provided.

### **Protection of Human Participants**

All electronic data were stored on the computer and is password protected. All data related to the project was kept in a locked file cabinet only accessible to the student investigator. There were no incentives to participants, and there were no potential risks or discomfort from participating in the project.

There is a potential conflict of interest, as the student investigator is an employee at the retail clinics. The leadership was notified that the student investigator would work on the project

only on the days and times she is not working in the clinic so that time will not be taken away from direct patient care. The IRB approval was obtained from Georgia State University.

### **Project Design**

This project is a quality improvement project to improve nurse practitioners' confidence and decrease barriers in managing patients with obesity. The goal of the project is to increase the volume of obese patients who will receive evidence-based education and referrals for obesity management from nurse practitioners. The Transtheoretical Model (TTM) and the 5As were used in the development and implementation of the educational material. The project utilizes a quasi-experimental pre-test/post-test design.

### **Data Analysis**

This DNP project aimed to answer the following clinical question: Does an education program increase nurse practitioner's confidence in managing obesity? Statisticians from Georgia State University were consulted to assist in coding data for analysis. The key statistical software that was used to analyze the data is IBM Statistical Package for Social Science (SPSS), version 25. Data was analyzed using descriptive analysis and paired samples t-test as participants served as their own control. Key individuals involved in the project are the project chair and advisor Dr. Lisa Cranwell-Bruce.

### **Results**

#### **Results Participant Demographics**

The target sample size was 50 nurse practitioners. A total of 23 nurse practitioners participated in this project. Participants ranged in age from 34-67 with a mean age of 50 (SD=10.14) years. The sample was 100% female, 64 % Black, 20 % Caucasian, 16% Asians. All participants had at least six years of experience as a nurse practitioner. The average years of practice as a nurse were



22 (SD=10.99) years. The highest degree was a doctoral 12%, and Masters prepared 88%. The participants were 100% nurse practitioners.

### **Additional Barriers**

Question 19 is a written response as to what providers perceived are the barriers to them addressing obesity in their patients. Question 19 states: "Please write two barriers that you believe are important in hindering discussion of weight loss with patients". Pre and post-test survey results were examined. List of the responses were:

- Time
- Reimbursement for service
- Cost to patient
- Comfort with subject of obesity
- Patient being open to change
- Cultural practices/tradition
- Fear of hurting patients' feelings
- Patient in denial
- Obesity is not the reason for the visit
- Patients education level
- Life style modification
- Fear of comprising provider and patient relationship
- Lack of motivation from failed attempts
- Sensitive topic
- Lack of resources
- Patient compliance

- Family history and genetics
- Funding for treatment
- Lack of insurance
- Embarrassment
- Lack of knowledge
- Finances

Twenty-five nurse practitioners consented to participate in the study. The final 23 participants are the convenience samples of all nurse practitioners that responded in the affirmative that they are willing and available to participate in the project. Additionally, the sample size is small. Chart reviews post-intervention reveals that although some nurse practitioners would document the height, weight, and the body mass index was automatically calculated in the electronic medical record, the providers still did not educate nor referred the obese patient for follow up.

### **Reliability**

Factor analysis data reduction technique was used to divide the scales item questions to form two sets of subscales for both group of questions (Pallant, 2016). Questions were grouped based on similarity of their components. The ten-point Likert questions were divided in two subscales the Cronbach's alpha was performed and scored 0.88 and 0.97 respectively. The five-point Likert scale were also divided into two subscales with a Cronbach alpha is 0.80 and 0.72. These scores indicated that the survey had a good internal reliability and consistency.

### **Descriptive Statistics**

Descriptive and inferential statistics was used in analyzing the data. The inferential statistic used is a paired sample t-test was used to analyze both the pre and posttest results of the

nurse practitioners' responses. A paired samples t-test was conducted to evaluate the impact of the intervention on nurse practitioners' scores on the confidence in providing weight management education to obese patients.

Descriptive statistics were used to analyze questions 1 through 9. See Table I for results. Pre and Posttest confidence levels were compared for each question. Question one pretest the confidence range for "how confident are you in using motivational interviewing to help a patient to lose weight" the mean confidence level is 6 with an SD of 2.94. This indicates the nurse practitioners were partially confident. Question one posttest confidence level for the same question the mean confidence level is a 7.17 with an SD of 1.875. This indicates that the providers felt more confident the bar graph shows the comparison between pre and post confidence levels for question one. It indicates that the provider became more confident post-intervention, which was an expected goal.

Question two pretest the confidence range for how confident are you utilizing The 5 A's (Assess, advise, agree, assist arrange, the mean confidence level is 5.43 with an SD of 2.952 indicates the practitioner was partially confident. Question two posttest for the same question the mean confidence level rose to 7.52 with a SD of 1.98, which indicates the nurse practitioners were more confident were confident. See bar graph comparison

Question 3 the confidence range for "how confident are you to ascertain a patient's readiness and ability to work on weight loss based on the stage of readiness for change?" The mean confidence level is 5.43, with an SD of 2.694. They felt partially confident, pretest, and Post-test. The man's confidence level was 7.61 and a DD of 2.083. See the bar graph showing the increase in the confidence posttest.

Questions 10-18 use frequencies to analyze data (Q10 Pre-test). See Table II. Weight loss counseling and management is difficult 26.1 % disagree, but 43.5% agreed. Post-test 36.4 % disagreed, but 40.9% agreed. See Table two which illustrates the frequency difference. Question 11 Pre-test states "It is difficult to find time to address weight management with my patient while in the clinic," 17.4 disagree, but 47.8% agree. Posttest for the same question, 30.4% disagreed, and 39.1% agreed. "I have a thorough knowledge of weight loss management and feel qualified to treat overweight/obese patients". 4.3% disagreed, but 34.8 % agreed. Posttest 8.7% disagreed, but 56.5% agree.

Table I

*Confidence in Treating Obesity (Questions 1-9)*

Question	Mean	Standard Deviation
<b>Q1.</b> How confident are you in using motivational interviewing to help a patient to lose weight?		
<b>Pre-test</b>	5.43	2.939
<b>Post-test</b>	7.61	1.875
<b>Q2.</b> How confident are you in utilizing the 5As (assess, advise, agree, assist, arrange)?		
<b>Pre-test</b>		
<b>Post-test</b>	5.74	2.952
<b>Q3.</b> How confident are you that you	7.70	1.94

can ascertain a patient's readiness and  
ability to work on weight loss based on  
stage of readiness for change?

<b>Pre-test</b>	7.26	2.694
<b>Post-test</b>	8	2.083

**Q4.** How confident are you that you  
can provide a brief counseling  
intervention to help a patient lose  
weight?

	5.91	
<b>Pre-test</b>	7.61	2.800
<b>Post-test</b>		2.204

**Q5.** How confident are you that you  
can prescribe a plan for weight  
management for your patient?

	7.26	
<b>Pre-test</b>	8	2.649
<b>Post-test</b>		2.067

**Q6.** How confident are you to obtain a  
diet history and assess for unhealthy  
behavior, in your patient?

	7.61	
	5.91	
<b>Pre-test</b>		2.922
<b>Post-test</b>		2.271

	6.00	
<b>Q7.</b> How confident are you that you	8.22	

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can respond to a patient's questions  
regarding weight management?

**Pre-test**

<b>Post-test</b>	6	6.48
	8.22	8.17

**Q8.** How confident are you that you  
can assist a patient in setting realistic  
goals and making lifestyle changes for  
weight loss?

**Pre-test**

	6.	2.796
<b>Post-test</b>	7.96	1.89

**Q9.** How confident are you that you  
can collaborate and refer patients to  
other providers, such as dieticians  
when appropriate?

**Pre-test**

	6.48	2.626
<b>Post-test</b>	8.17	2.125

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Table II

*Confidence in Treating Obesity (Questions 10-18)*

Question	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
	<i>Pre-test % (N)</i>	<i>Pre-test % (N)</i>	<i>Pre-test % (N)</i>	<i>Pre-test % (N)</i>	<i>Pre-test % (N)</i>
	<i>Post-test % (N)</i>	<i>Posttest % (N)</i>	<i>Posttest % (N)</i>	<i>Posttest % (N)</i>	<i>Posttest % (N)</i>
10. Weight loss counseling and management is difficult.	8.7% (2) 4.5% (1)	26.1% (6) 36.4% (8)	8.7% (2) 9.1% (2)	43.5% (10) 40.9% (9)	13% (3) 9.1% (2)
11. It is difficult to find the time to address weight management with my patients while in clinic	8.7% (2) 0% (0)	17.4% (4) 30.4% (7)	0% (0) 8.7% (2)	47.8% (11) 39.1% (9)	26.1% (6) 21.7% (5)
12. I have a thorough knowledge of weight loss management and feel qualified to treat overweight/obese patients.	13.0% (3) 0% (0)	4.3% (1) 8.7% (2)	43.5% (10) 26.1% (6)	34.8% (8) 56.5% (13)	4.3 (1) 8.7 (2)
13. I am usually successful in helping overweight/obese patients lose weight.	17.4% (4) 0% (0)	26.1% (6) 8.7% (2)	39.1% (9) 65.2% (15)	17.4% (4) 26.1% (6)	0% (0) 0% (0)

14. Patients are likely to benefit from weight loss counseling while being seen in retail clinic	13.0 % (3) 8.7% (2)	13.0 % (3) 30.4% (7)	30.4% (7) 4.3% (1)	43.5% (10) 47.8% (11)	0% (0) 8.7% (2)
15. Obesity is a condition that is treatable.	4.3% (1) 4.3% (1)	0% (0) 4.3% (1)	47.8% (1) 0% (0)	52.2% (12) 47.8% (11)	39.1% (9) 43.5% (10)
16. Most obese patients will not lose a significant amount of weight.	8.7% (2) 26.1% (6)	34.8% (8) 26.1% (6)	17.4% (4) 13.0% (3)	34.8% (8) 30.4% (7)	4.3% (1) 4.3% (1)
17. I feel uncomfortable addressing weight loss with patients.	13.0% (3) 26.1% (6)	30.4% (7) 56.5% (13)	13% (3) 4.3% (1)	39.1% (9) 8.7% (2)	4.3% (1) 4.3% (1)
18. Changing patient behavior is futile.	13.0% (3) 26.1% (6)	34.8% (8) 34.8 (8)	13.0% (3) 13.0% (3)	N 21.7% (5) N 21.7% (5)	17.4% (4) 4.3% (1)



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### Discussion

This DNP project aimed to answer: Among providers who practice in retail clinics in the southeast United States, will an educational intervention improve providers' attitudes and decrease barriers in addressing obesity management with patients? The clinical question was answered by the intervention in that the nurse practitioner confidence level increased post intervention. However, many of the barriers such as time restraint persist.

The retail nurse practitioners although fully aware of the pivotal role they play in managing obesity, still avoid addressing obesity with their patient's post- intervention (Hanna et al., 2018). The project sought to understand the potential barriers providers face in diagnosis and management of obesity in retail care setting (Hite, Victorson, Elue, & Plunkett, 2019). The project result shows that although nurse practitioner's knowledge and confidence increased theoretically from the survey results, the nurse practitioner providers however fail to apply recommended guidelines and practices for the evaluation, management, and prevention obesity (Findholt, Davis, & Michael, (2013).

### **Chart Reviews**

The student investigator reviewed 460-charts; results were not statistically significant pre-intervention to post-intervention, and this may be due to the limited time span. Results of the pre/post-intervention survey involved 230 charts audited pre and post-intervention, ten charts for each participant pre-intervention, and ten charts post-intervention. The findings from the chart review align with the literature that although nurse practitioners are knowledgeable on the importance of documenting patient's height, weight, BMI and diagnosing and referring obese

patient for management. Nurse practitioners did not document discussing or referring patient for obesity management.

The study results of Hite, Victorson, Elue, and Plunkett (2019) correlated with the study in that the findings suggest that a BMI measurement is essential for diagnosing and treating obesity. The study suggested that many providers were not documenting and elevated BMI and or not addressing an elevated BMI. The study all so suggest that despite providers' knowledge of addressing obesity most providers were not consistently managing the disease. Time was also the most common barrier cited by the study as a deficiency in providers discussing obesity with their patients.

### **Survey Review**

Survey responses indicate that the barriers that hinder discussion of weight loss with patients are time restraint, lack of referral resources, provider's comfort level, and provider's lack of confidence. Providers fear that the patient may not be receptive and may be intimidated by the process. Furthermore, nurse practitioners' providers were concern that patients may lack the educational level, the interest, the support system, and will power, fear from past failures, and maybe in denial and not be ready to lose weight. The survey responses align with the evidence found in the literature review of barriers providers face in managing obesity

The providers feel that a lack of an ongoing relationship between patients and clients is a barrier to addressing obesity. Also, the nurse practitioner provider feels that the retail clinic is designed for acute episodic visits, and providers see obesity as a chronic illness that requires long term planning and follow-up. One nurse practitioner voiced her opinion that sick visit is not a good time to discuss weight loss. The nurse practitioners expressed barriers such as the patient's willingness to change, the cost of the visit, and reimbursement from insurance.

The project supports the findings of Bornhoeft (2018) that provider's barriers that prevent them from providing dependable evidenced-based obesity management include provider's lack of knowledge on obesity management, providers not having a personal relationship with their patient. In addition, the study showed that obesity is multifactorial and needs the collaboration of a multidisciplinary team to adequately manage obesity (Bornhoeft, 2018). The providers also expressed the same concerns of patient's knowledge of obesity, their readiness to engage and discuss weight loss, and their capability in taking responsibility for their health (Bornhoeft, 2018).

### Practice Implications

The findings from this quality improvement project indicate that nurse practitioner providers working in the retail clinic setting are not adequately addressing obesity, although it is the root cause of many chronic illnesses. USPSTF guidelines state that there needs be obesity screening and a multi-competent referral of all obese patients (Grossman et al., 2017). Reimbursement is also available for these visits.

A multidisciplinary team approach is needed to assist the obese patient in weight loss management. In the retail clinic setting where there are only solo providers, this will involve referrals to nutritionist, dieticians, exercise coach and other community resources. Providers need education on available resources to assist in improving their attitude and reducing barriers in managing obesity (Bornhoeft, 2018). A patient-centered and behavioral intervention known as a team-based model has developed and found to be an efficient method of providing healthcare access and quality cost-effective care in managing obesity (Hayes, Wolf, Labbé, Peterson, & Murray, 2017).

Finding from this project will be shared with the health organization that facilitated the study. The hope is that new protocols and policies be put in place to better help healthcare providers in overcoming the barriers and improving providers' attitudes and confidence in addressing obesity management of patients in the retail clinic setting and improving health outcomes for the population at large. Findings will be disseminated through academic journals, a website search, local newspaper, newspaper, curriculum dissemination, professional networks, professional collaborations, professional conferences, professional meetings, presentation/workshop/ training, and word of mouth. The most effective method to reach the target audience is through professional contact. A combination of website searches, professional conferences, and local presentations would reinforce the message.

The finding from the DNP project will improve population health through a multidisciplinary team approach, and multicomponent referrals. In the retail clinic setting where there are only solo providers, this will involve referrals to nutritionists, dieticians, exercise coaches, and other community resources. (Bornhoeft, 2018). The findings allows for improve access to healthcare and expert advise. A patient-centered and behavioral intervention known as a team-based model has developed and found to be an efficient method of providing healthcare access and quality cost-effective care in managing Obesity (Hayes, Wolf, Labbé, Peterson, & Murray, 2017). The DNP project findings impacts practice policy with the opportunities to create new policies and guidelines on managing obesity as a disease. Obesity management needs to be a part of the Academic curriculum. The DNP project findings indicates a need to have more evidence-based research conducted on obesity and finding encourage adherence to current national guidelines

The next step is to adopt a multidisciplinary team approach, share the findings and sustain practice change. Testing with a larger sample, more clinics, and different areas to see if the same results are achieved.

### Limitations

The study characteristic lacks generalizability or external validity to the population due to the small sample size. Ideally, the sample size of 30 or higher would increase the significance. The generalizability of the study results can only be compared with nurse practitioners working in a similar retail clinic setting. The study does not include other healthcare providers, such as physicians and physician assistants. The student investigator was not blinded to the study participants, which could result in a bias. Additionally, the study participants are acquainted with the student investigator, and although the consent made it clear that participating in the study was voluntary, participants may have consciously or subconsciously answered questions in favor of impressing the student investigator.

The lack of an overwhelming response of more nurse practitioners' willingness to participate in the project may be an indication of the nurse practitioners lack of confidence in addressing obesity. Sample size was affected because one nurse practitioner that agreed to participate in the study was an educator and did not see patients, and so the student investigator was unable to evaluate pre and post intervention chart review. One of the post-intervention surveys was not completed in the timeframe due to the nurse practitioner being on vacation.

The project took place in a relatively short amount of time (approximately five months), so there are no threats to internal validity. However, there is always the possibility that events that occur during this period could affect the results of the project. It may be difficult to

generalize the findings to other settings due to the sampling method of a random convenience sample, which can affect the external validity of this project.

#### Conclusion

Obesity is a preventable medical condition, and the doctorally prepared nurse practitioner has the leadership skills and scholarship needed to implement guidelines that will forge a system wide change that will help in the prevention, promotion and manage obesity. The change project shows that the barriers to addressing obesity and the provider's confidence are still a work in progress. The findings from the study are consistent with the current body of knowledge in evidenced-based research on the barriers and providers' comfort level in addressing obesity in patients. Nurse practitioners in the retail clinic setting are in a unique position to address obesity management with patient to improve patient's quality of life by preventing chronic illnesses and reducing the burden on healthcare costs because of the public health dilemma of obesity.

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### Appendix A: Participant Recruitment Letter

#### Overcoming Barriers and Improving Providers' Confidence in Addressing Obesity

Hello,

My name is Karene Boone and I am a DNP Student at Georgia State University. I am recruiting participants for a research study that I am conducting for completion of my Doctor of Nursing Practice degree and to see how we can better help patients from Piedmont Quick Care retail clinic in Georgia. As a nurse practitioner at the Piedmont QuickCare retail clinic you are invited to participate in a quality improvement project to decrease barriers and improve providers' confidence in managing obesity and increase the number of patients who receive evidence-based weight management counseling and referrals.

There is a potential of 50 participants. You will be asked to complete an anonymous pre and post intervention survey. The pre-test will be no longer, than 30 minutes and post- test will be no longer, than 30 minutes. Participation in the project includes a 30-minute educational session power point provided by myself. The project from start to finish will take no more than 90 minutes of your time. The educational material will be sent via your work email for you to read at your convenience. Emails are not a secure medium and so there is the risk that someone may learn of your participation in the study. Additionally, 10 charts per participant will be audited to observe if patient was given educational information on obesity in the after-visit summary and if counseling and referral was provided. Before we begin, I need to ask you a few questions:

1. Are you a nurse practitioner working for Piedmont QuickCare clinic, in the state of Georgia?
2. Are you at least 18 years of age?
3. Are you planning to be an employee of Piedmont QuickCare in the next six months?

If you would like to participate in this project, please reply via email to Karene.boone@piedmont.org. or call me at (404) 610 9139

Sincerely,

Karene Boone, NP-C, DNP student at Georgia State University

## Appendix B: Informed Consent Provider Document

**Georgia State University  
Informed Consent**

**Title:** Overcoming Barriers and Improving Providers' Confidence in Managing Obesity.

**Principal Investigator:** Lisa Cranwell-Bruce, DNP, RN, FNP-C

**Student Principal Investigator:** Karene Boone

**Introduction and Key Information**

You are invited to take part in a research study. It is up to you to decide if you would like to take part in the study. The purpose of this study is to decrease barriers and improve providers' confidence in managing obesity in the retail clinics in the southeast, Georgia, specifically in the state of Georgia. Your role in the study will last for 30 minutes of educational material time and a 10 minutes pre -test. A 10-minute post-test survey will also be given upon completion of the study. The entire project will last over a period of six months.

You will be asked to do the following:

- To consent to take part in the study
- Take part in a pre-test survey
- Listen to a 30 minutes education session on obesity
- Address obesity in patients who are obese, document findings in the electronic medical record.
- Appropriately counsel and refer patients
- Give educational material to patient as part of the after-visit summary.

Participating in this study will not expose you to any more risks than you would experience in a typical day. This study is not designed to benefit you. Overall, we hope to gain information about decreasing barriers and improving providers' confidence in managing obesity.

**Purpose**

The purpose of the study is to decreasing the barriers and improving nurse practitioners' confidence in managing obesity in their patients and increase the number of patients who receive evidence-based weight management counseling and referrals. You are invited to take part in this research study because you are nurse practitioner older than 18 years of age, working in a retail clinic setting in the southeast, in the state of Georgia. A total of 50 nurse practitioners will be invited to take part in this study.

**Procedures**

If you will be asked to take part, you will be tasked to:

- Sign consent of your willingness to participate in the study.
- Take part in an anonymous pre-test survey, which should take no longer than 10 minutes to complete.
- Listen to 30 minutes of educational material on obesity at the beginning of the study.
- Document patients' height and weight in the electronic medical record.

- Address obesity management in patients with body mass index greater than and equal to 30.
- Appropriately counsel and refer obese patients.
- Give educational material to patients on obesity as part of their after-visit summary.
- The study participation will span a six-month period.
- Nurse Practitioners will be asked to participate in a post-test questionnaire lasting no longer than 10 minutes.
- The student project administrator will review electronic medical records during this period to assess participants' confidence in managing patients with obesity.
- The research will take place in the retail clinics in the southeast, in the state of Georgia.
- The research will take place between fall semesters 2019 to early spring 2020.
- Electronic medical records will be reviewed weekly.
- A total of at least 50 nurse practitioners will be asked to participate in the study.
- Research will be completed by spring 2020.
- Participants will be removed from the study if they resign from the retail clinic during the time frame of the study.

### **Future Research**

Researchers will remove information that may identify you and may use your data for future research. If we do this, we will not ask for any additional consent from you.

### **Risks**

In this study, you will not have any more risks than you would in a normal day of life. No injury is expected from this study, but if you believe you have been harmed, contact the research team as soon as possible. Georgia State University and the research team have not set aside funds to compensate for any injury.

### **Benefits**

This study is not designed to benefit you personally. Overall, we hope to gain information about reducing the barriers to address obesity in Nurse Practitioners, improving their confidence in managing obesity in patients, and providing appropriate counseling and referrals. The benefits to the patient are to change their lifestyles and prevent and reduce the comorbidities associated with obesity; thereby decrease the economic impact that this disease has on the society.

### **Alternatives**

The alternative to taking part in the study is to not take part in the study.

### **Voluntary Participation and Withdrawal**

You do not have to be in this study. If you decide to be in the study and change your mind, you have the right to drop out at any time. You may skip questions or stop participating at any time. You may refuse to take part in the study or stop at any time.

### **Confidentiality**

We will keep your records private to the extent allowed by law. The following people and entities will have access to the information you provide:

- Lisa Cranwell-Bruce DNP (project advisor and chair and faculty member at Georgia State University)
- GSU Institutional Review Board
- Office for Human Research Protection (OHRP)

We will use a study number rather than your name on study records. The number to identify the research participant will be stored separately from the data to protect privacy. The information you provide will be stored in a locked file cabinet. This information will be destroyed upon completion of the study. All electronic records will be stored on password and firewall-protected computers. When we present or publish the results of this study, we will not use your name or other information that may identify you. Information sent over the Internet may not be secure.

### **Contact Information**

For any questions or concern, please feel free to call the project director Karene Boone at (404) 610-9139 and [kweir3@student.gsu.edu](mailto:kweir3@student.gsu.edu) and faculty advisor Lisa Cranwell-Bruce, DNP, RN, FNP-C at Georgia State University, [lcranwellbruce@gsu.edu](mailto:lcranwellbruce@gsu.edu), (404) 413-1189.

- If you have questions about the study or your part in it
- If you have questions, concerns, or complaints about the study

The IRB at Georgia State University reviews all research that involves human participants. You can contact the IRB if you would like to speak to someone who is not involved directly with the study. You can contact the IRB for questions, concerns, problems, information, input, or questions about your rights as a research participant. Contact the IRB at 404-413-3500 or [irb@gsu.edu](mailto:irb@gsu.edu).



Appendix C: Chart Audit Checklist

Chart audit tool

1. Did the health care provider/nurse document overweight or obesity as a diagnosis?
2. Did the provider address overweight or obesity in the progress note?
3. What was the patient's body mass index (BMI)?
4. Did the discharge summary contain any educational material on obesity?

## Appendix D Project Timeframe Table

## Timeline – Karene Boone 2019

Action Item	Action Needed	Date to be completed	Completed or Reason not completed	Revisions
IRB Approval	Corrections Made	August 30, 2019		
Application for graduation	Submit application and pay for graduation	August 4,2019		
Recruitment Letter	Awaiting Response	September 8, 2019		
Sign Consent Forms	Need to email consent to participants	September 21, 2019		
Pre test - Survey	Need to send to participants	September 25, 2019		
Educational Intervention	Email to participants for review	September 30,2019		
Data Collection/Post test Intervention	Data Analysis	November 27, 2019		
Imputing data in statistical program	GSU statistics team to help in Analysis	December 31, 2020		
Analyzing and writing up results of the analysis	Makin correction with the help of the project advisor	January 27,2020		
Dissertation Defense	Complete dissertation defense	Tentative date – 2/28/20 Deadline - 3/10/2020		

**Appendix E: Evidence Matrix Table**

<p>Barnes, E. R., Theeke, L. A., &amp; Mallow, J. (2015). Impact of the Provider and Healthcare team Adherence to Treatment Guidelines ( PHAT-G) intervention on adherence to national obesity clinical practice guidelines in a primary care center. <i>Journal of Evaluation in Clinical Practice</i>, 21(2), 300–306.</p>				<p><b>Grade Level of Evidence</b>                  Strong recommendation:                  moderate-quality.                  Rating level: 1</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Evaluate the impact of the Provider and Healthcare team Adherence to Treatment Guidelines (PHAT-G) intervention. Specific aims: to increase documentation of BMI; to increase frequency of diagnosis of obesity is documented BMI was greater than or equal to 30:and to increase documentation of weight loss plan consistent with practice guideline recommendations for patient with excess weight on.</p>	<p>Retrospective chart review</p>	<p>Health records of 100 adult patients aged 18–64</p>	<p>None</p>	<p>Implementation of this clinical change project brought attention to an important health issue that contributes to multiple chronic conditions that are costly to the health care system. Rather than looking to health care providers to manage obesity, it may be more cost-effective to refer patients to commercially available community services. It may not be feasible to manage obesity within the confines of acute clinic visits. Providers need to identify and diagnose patients with obesity and then have effective interventions and treatment services available beyond the primary care visit. Future studies of the comparative effectiveness of obesity management options may help providers better identify which treatments will be most effective for particular patients. If obesity is left undiagnosed and untreated, the health of patients will suffer.</p>

<p>Best, D., Avenell, A., &amp; Bhattacharya, S. (2017). How effective are weight-loss interventions for improving fertility in women and men who are overweight or obese? A systematic review and meta-analysis of the evidence. <i>Human Reproduction Update</i>, 23(6), 681–705.</p>				<p><b>Grade Level Evidence:</b> Strong recommendation; Highest level of evidence: Rating Level: 1</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>In overweight and obese women, men and couples seeking fertility treatment, what non-surgical weight-loss interventions have been used, and how effective are they at weight loss and improving reproductive outcomes?</p>	<p>Meta-analysis, research, Systematic Review</p>	<p>40 studies were selected for review</p>	<p>Data were imported into Review Manager Version 5.3.5 (The Cochrane Collaboration, Oxford, UK) for quantitative synthesis Cochrane Risk of Bias Tool for randomized trials, and a ratified checklist (ReBIP) for non-randomized studies.</p>	<p>A combination of a reduced calorie diet, by reducing fat and refined carbohydrate intake, and increased aerobic exercise should form the basis of programs designed for such individuals. A lack of randomized studies in men and couples, and studies evaluating barriers to undertaking weight loss in infertile populations is evident, and future research should examine these issues further.</p>

<p>Bornhoeft, K. (2018). Perceptions, Attitudes, and Behaviors of Primary Care Providers Toward Obesity Management: A Qualitative Study. <i>Journal of Community Health Nursing</i>, 35(3), 85–101. <a href="https://doi-org.ezproxy.gsu.edu/10.1080/07370016.2018.1475792">https://doi-org.ezproxy.gsu.edu/10.1080/07370016.2018.1475792</a></p>	<p><b>Grade Level of Evidence</b> Strong recommendation: Low quality evidence Rating Level: 6</p>
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Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
Examine perceptions, attitudes, and behaviors toward obesity management by providers in primary care.	A descriptive qualitative design	12 Primary care providers. Six physicians and six nurse Practitioners (NPs)	Data was assessed with rigor. A second and third researcher was utilized along with expert researcher. The researcher also assessed participant's views and opinion in order to further establish stability.	Literature review confirms that primary care providers are not effectively managing Obesity. Implications involve changing protocols and practice guidelines. Develop tangible tools along with patient input to help providers manage obesity in a primary care setting. The USPSTF recommends screening and referral for obesity and a reimbursement for these visits is provided.

<p>Campbell-Scherer, D. L., Asselin, J., Osunlana, A. M., Fielding, S., Anderson, R., Rueda-Clausen, C. F., ... Sharma, A. M. (2014). Implementation and evaluation of the 5As framework of obesity management in primary care: design of the 5As Team (5AsT) randomized control trial. <i>Implementation Science</i>, 9(1), 78</p>				<p><b>Grade Level of Evidence</b> Strong recommendation: High Quality Evidence Rating level: 2</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
Implementation of the 5AsT in primary care practice will increase the number of weight management visit per FTE conducted by the PCN RN/NPs. The primary outcome measure is the number of weight management visit as a function of the	Theoretically informed, pragmatic randomized controlled Trial with mixed methods of evaluation. Qualitative data /Quantitative data analysis.	Clinic-based primary care setting 59 multidisciplinary healthcare providers consisting of Registered nurses, Nurse Practitioners, mental health, dieticians, exercise	Thematic analysis RE-AIM Framework	The 5AsT trial provide a wide range of insights in current practices, knowledge gaps and barriers that limit obesity in primary practice

<p>provider full time equivalent (FTE) work (i.e., a half time nurse has an FTE of 0.5). Implementation of the 5 AsT in primary care practice will result in a sustained change in medical practice as evaluated by the RE-AIM framework</p>	<p>Peer reviewed.</p>	<p>physiologist, respiratory therapist</p>		
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<p>Findholt, N. E., Davis, M. M., &amp; Michael, Y. L. (2013). Perceived Barriers, Resources, and Training Needs of Rural Primary Care Providers Relevant to the Management of Childhood Obesity. <i>Journal of Rural Health, 29</i>, s17-24.</p>	<p><b>Grade Level of Evidence</b> Strong recommendation: Low quality Evidence Rating Level: 6</p>
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<p><b>Hypothesis/ Questions</b></p>	<p><b>Design</b></p>	<p><b>Sample</b></p>	<p><b>Measurement</b></p>	<p><b>Results/Implications</b></p>
<p>To determine the perceived barriers, resources, and training needs of rural primary care providers in relation to implementing the American Medical Association Expert Committee recommendations for assessment, treatment and prevention of childhood obesity</p>	<p>Qualitative Studies Exploratory Research Descriptive Statistics, Double Blind Peer Reviewed; Editorial Board Reviewed; Expert Peer Reviewed; Peer Reviewed</p>	<p>In-depth interviews with 13 rural primary care providers in Oregon. Transcribed interviews were thematically coded</p>	<p>Analysis entered transcribed interviews into NVivo 7 (QSR International Inc., Burlington, Massachusetts),<sup>26</sup> a software program for managing qualitative data, and analyzed them using a modified version of focused coding and grounded theory methods.<sup>27,28</sup> Two investigators</p>	<p>Barriers to addressing childhood obesity fell into 5 categories: barriers related to the practice (time constraints, lack of reimbursement, few opportunities to detect obesity), the clinician (limited knowledge), the family/patient (family lifestyle and lack of parent motivation to change, low family income and lack of health insurance, sensitivity of the issue), the community (lack of pediatric subspecialists and</p>

			independently read and coded the transcripts using a “start list” of codes based on the interview questions. Two or 3 transcripts were coded at a time. Emergent themes or recurring issues were identified and discussed in bi-weekly	multidisciplinary/tertiary care services, few community resources), and the broader sociocultural environment (sociocultural influences, high prevalence of childhood obesity). There were very few clinic and community resources to assist clinicians in addressing weight issues. Clinicians had received little previous training relevant to childhood obesity, and they expressed an interest in several topics.
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Guh DP, Zhang W, Bansback N, Amarsi Z, Birmingham CL, & Anis AH. (2009). The incidence of co-morbidities related to obesity and overweight: a systematic review and meta-analysis. <i>BMC Public Health</i> , 9(1), 88.				<b>Grade Level Evidence:</b> Strong recommendation; Highest level of evidence Rating Level: 1
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
Evaluate the Incidence of co-morbidities related to obesity and overweight	Systematic Review Meta-Analysis	A literature search for the twenty co-morbidities identified in a preliminary search was conducted in Medline and Embase (Jan 2007). Studies meeting the inclusion criteria (prospective cohort studies of sufficient size reporting risk estimate based on the	Log scale	The review found evidence for 18 comorbidities. The meta-analysis determined statistically significant associations for overweight and obesity with the incidence of type II diabetes, all cancers except esophageal pancreatic and prostate cancer, all cardiovascular diseases (except congestive heart failure), asthma, gallbladder disease, osteoarthritis and chronic back pain. Statistically significant associations with obesity

		<p>incidence of disease) were extracted. Study-specific unadjusted relative risks (RRs) on the log scale comparing overweight with normal and obese with normal were weighted by the inverse of their corresponding variances to obtain a pooled RR with 95% confidence intervals (CI).</p>		<p>were found with the incidence of type II diabetes, all cancers except esophageal and prostate cancer, all cardiovascular diseases, asthma, gallbladder disease, osteoarthritis and chronic back pain. Implications are obesity carry a profound health burden and will have a significant impact on health expenditures. And maintaining a healthy weight in the future. Further studies are needed to explore the biological mechanisms that link overweight and obesity with these co-morbidities.</p>
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<p>Hite, A., Victorson, D., Elue, R., &amp; Plunkett, B. A. (2018). An exploration of barriers facing physicians in diagnosing and treating obesity. <i>American Journal of Health Promotion</i></p>				<p><b>Grade Level of Evidence:</b> Strong recommendation; Moderate quality evidence Rating Level: 3</p>
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
<p>Determine whether primary care physicians can accurately assess body mass index (BMI) by visual inspection and to assess barriers related to the diagnosis and management of obesity</p>	<p>Prospective Survey study Quantitative Research</p>	<p>Primary care Provider</p>	<p>SPSS Version 23 for analysis Classical Test Theory based analyses of reliability and validity Chi square analysis, fisher exact test, student t-test and Spearman correlation coefficient.</p>	<p>Visual assessment of BMI is not reliable. Primary physician in the study population did not consistently discuss obesity with their patients and many report insufficient knowledge with regard to treatment option. Implication: Further studies are needed to</p>



				determine whether these are valid for other physicians in various practice setting and to mid-level provider. Research is needed that investigate how collaboration with providers outside the medical field could reduce the burden on physician in treating patients with obesity.
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Kaplan, L. M., Golden, A., Jinnett, K., Kolotkin, R. L., Kyle, T. K., Look, M., ... Dhurandhar, N. V. (2018). Perceptions of Barriers to Effective Obesity Care: Results from the National ACTION Study. <i>Obesity (19307381)</i> , 26(1), 61–69.				<b>Grade Level of Evidence:</b> Strong recommendation; Moderate quality evidence Rating Level: 4
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
Describe and evaluate ACTION (Awareness, Care, and Treatment in Obesity management) evaluate obesity-related perceptions, attitudes, and behaviors among people with obesity (PwO), health care providers (HCPs), and employer representatives (ERs)	Cross-sectional design Descriptive and explorative	N=3,008 adult People with Obesity (BMI ≥ 30 by self-reported height and weight), 606 HCPs, and 153 ERs completed surveys in a cross-sectional design	Descriptive statistical analysis (means, frequencies) was performed using SPSS 15.0.1	The results showed that Only 23 % of people with obesity reported a 10 % weight loss after several weight loss attempts. 54% of people with obesity worried their weight may affect future health. Only 50% of patient with obesity saw themselves as being obese. 55% reported receiving a formal diagnosis of obesity Only 24% of PwO had a scheduled follow-up to initial weight-related conversations. Few PwO (17%) perceived employer-sponsored wellness offerings as helpful in supporting

				weight loss.
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*Evidence Matrix Table*

Sonntag U, Brink A, Renneberg B, Braun V, & Heintze C. (2012). GPs' attitudes, objectives and barriers in counselling for obesity-a qualitative study. <i>European Journal of General Practice, 18</i> (1), 9–				<b>Grade Level of Evidence:</b> Strong recommendation; Low-quality evidence Rating level: 6
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
Examine general Practitioners attitude and perspective on managing obese patients. Identify any perceived barriers to treating and counseling patients. Analyze whether specific patient characteristic led to any provider bias in determining the need for treatment.	Qualitative study	Cross-sectional study of 15 primary care physicians (GPs) working in a solo practice. 70 were GPs invited to participate but only 15 accepted. Main reasons for refusing to participate was a lack of time, being new to the practice and low interest in research and low interest in research 6 male and 9 female GPs were interviewed. GPs had an average age 51 years. None of the GPs showed an elevated body mass index (BMI) (mean: 22.4 kg/m <sup>2</sup> ).	Mayring's technique for qualitative analysis Atlasti was the data analysis software that was used	Results varied significantly on GPs' attitudes towards counseling obese patient. Most GPs' did not feel responsible for weight management therapy in their patient. Most GPs' wanted to play a passive role general practitioner faced several barriers. Recommendations for correcting these barriers include: an increase of obesity-specific knowledge and training in communication skills as well as an integrative care. Collaborating the skills of several health experts such as psychologists and nurses. GPs as long-term supervisors of patients need to play a key role in an interdisciplinary working team. Their task is to coordinate prevention and treatment of obesity, using their advantage of having a long-term relationship with their patients.

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*Evidence Matrix Table*

Sim, L. A., Lebow, J., Zhen Wang, Koball, A., & Murad, M. H. (2016). Brief primary care obesity interventions: A Meta-analysis. <i>Pediatrics</i> , 138(4), 1–11.				<b>Grade Level Evidence:</b> Strong recommendation; Highest level of evidence Rating Level: 1
Hypothesis/ Questions	Design	Sample	Measurement	Results/Implications
To Determine the effect of brief primary care interventions for pediatric weight management on BMI	Meta-analysis	Randomized control trials and quasi experimental studies that compared the effect of office-based primary care weight management intervention to a control intervention on percent BMI or BMI z scores in children aged 2 to 18 years	Cochrane and New castle – Ottawa risk of bias tools. Preferred Reporting Items for Systematic reviews and Meta-analyses (PRISMA) guidelines	BMI surveillance and counseling has a marginal effect on BMI. The implications are the need for revised practice guidelines and the development of a new approach by providers to address this problem
Wolf C. (2010). Physician assistant students' attitudes about obesity and obese individuals. <i>Journal of Physician Assistant Education (Physician Assistant Education Association)</i> , 21(4), 37–40.				<b>Grade Level of Evidence:</b> Strong recommendation; Moderate quality evidence Rating Level: 4

<b>Hypothesis/ Questions</b>	<b>Design</b>	<b>Sample</b>	<b>Measurement</b>	<b>Results/Implications</b>
<p>The hypothesis of this study is that PA students' attitudes about obesity and obese individuals will be similar to that of other health professionals previously studied. Once PA students' attitudes have been determined, PA programs can enhance their curricula in order to modify any identified stigma associated with obesity, which many health professionals possess</p>	<p>Descriptive research Quantitative study</p>	<p>Physician assistant students at the New York Institutes of Technology. 75% participation rate</p>	<p>Fat Phobia scale</p>	<p>This study documents a bias with physician assistant student population towards obese patients. This bias is similar to that seen in nurses, physicians, and dietitians and likely exists in other PA programs as well. Educators need to attempt to modify students' negative attitudes before they become practicing clinicians.</p>