IMPROVING OBESITY MANAGEMENT IN PRIMARY CARE

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IMPROVING OBESITY MANAGEMENT IN PRIMARY CARE

An Abstract of the Scholarly Project by
Jeffrey M. Waddell

This project examined how advanced practice nurses (APNs) manage overweight and obesity in primary care. Not only were their general attitudes and beliefs toward overweight and obesity explored, but their beliefs about the treatment and management of obesity were also examined. The APNs' knowledge and current practice with managing obesity in the primary care setting were evaluated. This project went on to examine the APNs' awareness and utilization of clinical practice guidelines in managing overweight and obesity. Finally, the study asked about the perceived impact of a website designed to provide guidance managing obesity based on the American Association of Clinical Endocrinologists and the American College of Endocrinology's 2016 guideline.

According to the findings, advance practice nurses are willing to treat overweight and obesity, but feel ill-prepared to do so. Accessibility and consistent utilization of clinical practice guidelines remain problematic. A majority of APNs agreed that improving access to guidelines would improve confidence in their knowledge base and abilities, thus increasing the likelihood of managing obesity in the primary care setting.

Participants were directed to the website http://www.obesitycpg.com to use as a practice resource following the conclusion of the study. During the first two months of being active, the site averaged approximately 239 unique hits per month based on back-end data from Google Analytics. Search engine promotion has never been in effect and the site has not been monetized.

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Chapter I

Introduction/Purpose

Description of the Problem

Adult obesity in the United States (U.S.) is an ongoing health problem for greater than one-third of the population (Centers for Disease Control and Prevention [CDC], 2015b; Ogden, Carroll, Kit, & Flegal, 2014). In every state in the U.S., at least 20% of the population is obese (CDC, 2015a). The scales tip toward obesity for greater than 30% of the population in the Midwestern portion of the country (CDC, 2015a). The cost of obesity is significant with annual estimated expenditures topping $190 billion (National League of Cities, n.d.).

Obesity persists for multiple reasons; it is not simply an issue of poor self-control with respect to foods or a lack of motivation to move. There are specific biochemical adaptations that characterize obesity as a chronic disease (Matsuzawa, 2009). One contributing factor stands out: during annual well-visits, less than 50% of obese adults reported that their primary care physician addressed weight management (Grizzard, 2002). Only 26% of primary care providers provide counseling or treatment routinely (Klabunde et al., 2014). Even though clinical practice guidelines are available, the undertreatment of overweight and obesity in primary care persists (Ferguson, Langwith, Muldoon, & Leonard, 2010; Lau et al., 2007).

Farran, Ellis, and Barron (2013) examined adherence to treatment guidelines in a retrospective analysis. After training sessions, there was a statistically significant improvement in documentation of weight management and anthropometric values, but limited improvement in interventions. Barnes, Theeke, and Mallow (2015) found that despite interventions to promote documentation and treatment, there was no statistically significant change in anthropometric documentation habits, treatment, nor improvement in anthropometric markers. Obesity guidelines are available for review, complete with the chief recommendation to assess for obesity as part of routine screening and wellness visits, yet primary care providers fail to follow through consistently (Ryan & Jensen, 2013).

Significance to Nursing

Advanced practice registered nurses (APNs) are positioned on the frontlines of the nation's healthcare, bridging the gap left by a shortage of primary care physicians (Robert Wood Johnson Foundation, 2012). The APN practices per established clinical practice guidelines, utilizing evidence-based practice (American Association of Colleges of Nursing [AACN], 2006). In caring for individuals across the lifespan, APNs address chronic care needs, including obesity, in all stages of life.

Obesity is costly on multiple levels. At the individual level, it leads to a multitude of metabolic changes which increase the risk of developing chronic diseases that include cardiovascular disease, Type II diabetes mellitus, osteoarthritis, and cancer (Haidar & Cosman, 2011; Kitzinger & Karle, 2013; Nguyen & El-Serag, 2010; Ogden, Yanovski, Carroll, & Flegal, 2007). With these ongoing health conditions come ongoing expenses. Greater than 75% of health care dollars are spent managing chronic conditions in the U.S.

(CDC, 2009). Managing obesity-related conditions cost $147 billion in 2008 dollars (Finkelstein, Trogdon, Cohen, & Dietz, 2009). Costs to industry ran $3.38 billion to $6.38 billion when examining worker absenteeism and production expenses attributable to obesity-related conditions (CDC, 2015a).

Greater than 60% of adults in the U.S. believe that primary prevention programs should be a priority and an even greater percentage believe funding for these programs should come from public dollars (CDC, 2009). The duty to shoulder the burden of slowing the spread of chronic conditions falls to the APN. This aligns with several of the Institute of Medicine's 2010 report recommendations regarding nurses leading change to advance health. The doctorally prepared APN is uniquely qualified to meet this charge, having received education and training in advancing health care policy and interprofessional collaboration (AACN, 2006).

Specific Aims and Purpose

The intent of this scholarly project was to assess the attitudes and current practices of APNs regarding the diagnosis and management of overweight and obesity in the primary care setting. Access to a web-based tool on the application of CPGs on treating adult obesity in the primary care setting was provided after the survey closed. The intent of the site was to provide APNs with a CPG-based resource to aid in treating overweight and to help patients achieve clinically meaningful weight loss with specific goals. Williamson, Bray, and Ryan (2015) suggest that utilizing targeted health measures are more meaningful than setting a 5% weight loss goal. Clinically meaningful weight loss is typically defined as 5-10% total body mass reduction and can take as long as 12 months to achieve (Nicklas, Huskey, Davis, & Wee, 2012; Wadden et al., 2011).

Theoretical Framework

Imogene King's Theory of Goal Attainment (TGA) was used for the theoretical framework for this project. TGA was derived from the relationships in her Theory of Interacting Systems. The Theory of Interacting Systems (Figure 1) demonstrates the interrelationship between the smallest system unit – individuals – and the largest system unit – society – while acknowledging the intermediate systems – groups (Seiloff, 2006). It is typically demonstrated as a Venn diagram of three interlocking circles. The Theory of Goal Attainment blends the nursing process with interacting systems, addressing the interaction and feedback between nurse and client (King, 1997; Seiloff, 2006).

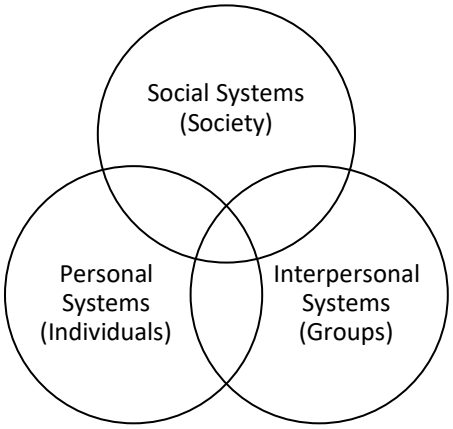

Figure 1. King's Conceptual System for Nursing. Adapted from King, I. M. (1981). *A theory for nursing: Systems, concepts, process. Albany, NY: Delmar*

This scholarly project examined specific aspects of the cycle of interaction between nurse and client, independent of an algorithm for determining the appropriate treatment pathway. The interaction between the APN and the client is demonstrated by King's transaction process model (Figure 2). This model reflects the nursing process from both the APN and the client standpoint. Assessment, diagnosis, planning, and implementation correlate to perception, judgement, and action in the King (2007) framework. Implementation plays a dual role, pairing with action and reaction. Interaction and transaction relate to evaluation as feedback describes the exchange of information throughout the relationship between the APN and the client (King, 2007).

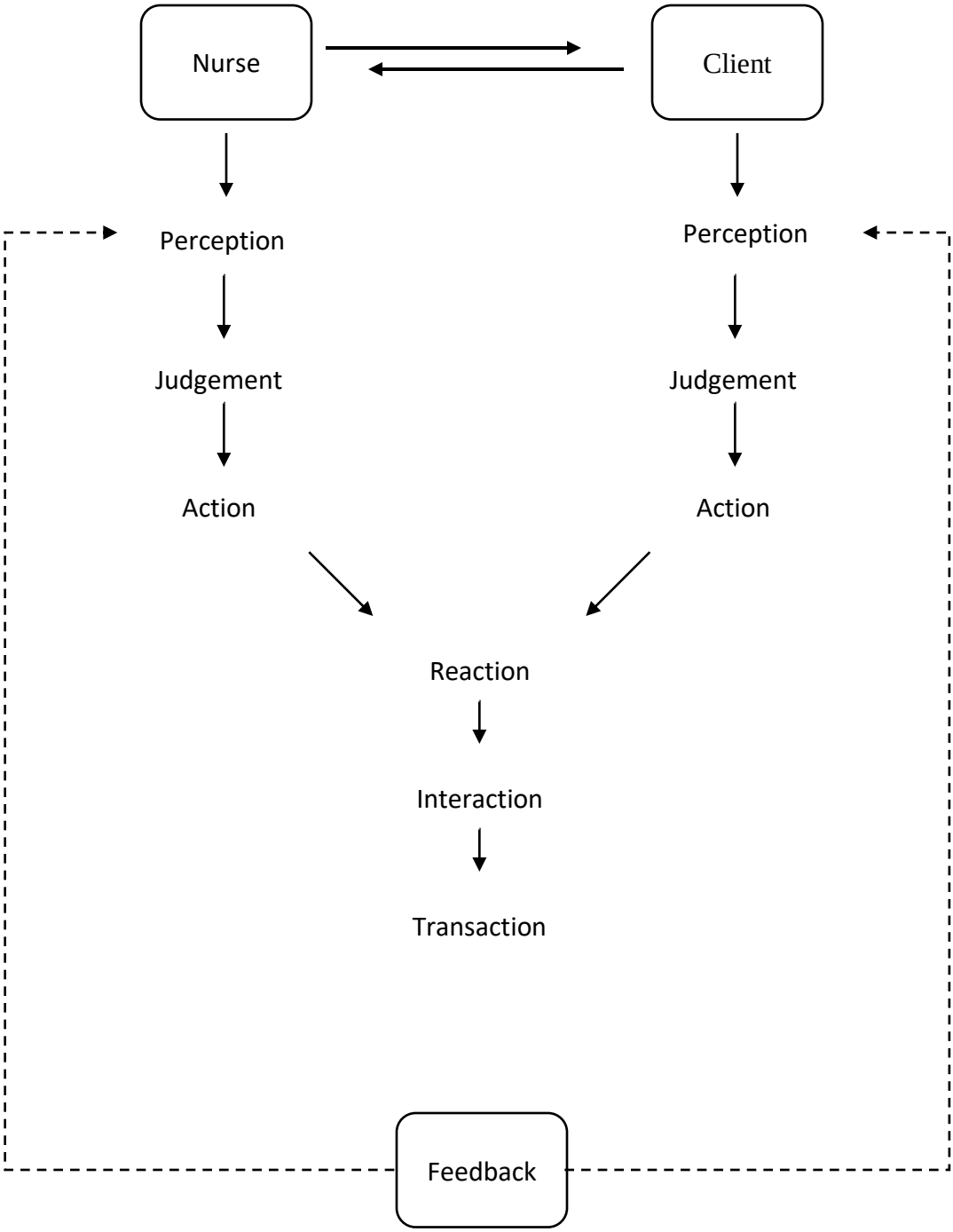

Figure 2. Transaction process model. Adapted from King, I. M. (1981). *A theory for nursing: Systems, concepts, process.* Albany, NY: Delmar.

Practice Questions

1. What were APNs' attitudes and beliefs toward overweight and obesity?
2. What were APNs' beliefs about overweight and obesity treatment and management?
3. What was the APN's current knowledge and practice in the management of overweight and obesity?
4. What was the APN's awareness of overweight and obesity CPGs?
5. What was the APN's intent to use overweight and obesity CPG after becoming aware of them?

Definition of Key Terms

The key definitions for terms utilized in this project included:

1. Body Mass Index (BMI)- Ratio of mass divided by height squared and expressed as kilograms per meter squared (kg/m^2). Elevations in BMI increase the risk for chronic health conditions (National Heart, Lung, and Blood Institute, n.d.)
    - Underweight- BMI less than 18.5
    - Healthy weight- BMI between 18.5 and 24.9
    - Overweight- BMI between 25 and 29.9
    - Obesity BMI greater than 30
        - Class I- 30-34.9 (moderately obese)
        - Class II- 35-39.9 (severely obese)
        - Class III- greater than 40 (very severely obese)
2. Waist circumference (WC)- Used as a measure of risk for disease, especially cardiovascular disease (World Health Organization [WHO], 2011).

- Females- greater than 35 inches (88cm) considered obese
- Males- greater than 40 inches (102cm) considered obese

3. Waist-hip ratio (WHR)- Measure of the circumference of the waist divided by the circumference of the hips. Used as a measure of health and risk for disease, especially cardiovascular disease (WHO, 2011).
    - Obese classification
        - Females- greater than 0.85
        - Males- greater than 0.90
4. Clinical practice guidelines (CPG)- "Statements that include recommendations intended to optimize patient care that are informed by a systematic review of evidence and an assessment of the benefits and harms of alternative care options" (American Academy of Family Physicians, n.d.a, "Introduction," para. 1).
5. Evidence-based practice (EBP)- "The conscientious, explicit, and judicious use of the current best evidence in making decisions about the care of individual patients" (American Academy of Family Physicians, n.d.b, para. 1).
6. Laboratory test- A medical procedure that involves testing a sample of blood, urine, or other substance from the body; helpful in the diagnostic process, treatment planning, evaluating care, and disease monitoring (National Cancer Institute, n.d., para. 1).
7. Education- "The process of giving or receiving systematic instruction" (Oxford University Press, n.d., para. 1).
8. Advanced practice nurse (APN)- "A nurse prepared for an advanced role by additional knowledge and skills gained through a formal advanced practice

education program of nursing in a specialty area. In the advanced role, the nurse practices nursing assessment, intervention, and management within the boundaries of the nurse-client relationship" (Iowa Nurse Practice Act, 2016, Ch. 7, p. 1, para. 1).

- Synonymous to nurse practitioner, advanced registered nurse practitioner (ARNP), advanced practice registered nurse (APRN).

Logic Model

The logic model (Figure 3) created for this project demonstrated the multiple pieces required to coordinate the project. The line items in the model were arranged in a chronologic order with each item building on the preceding point. The immediate short-term goals involved evaluating the current attitudes, beliefs, and practice of APNs in the management of obesity as well as the perceived impact of an educational tool for treatment according to CPG. Identifying and addressing provider beliefs and any existing barriers is necessary to improving practice. The key short-term marker to identify was an intent to treat obesity. No treatment can commence without the provider being open and willing to make and address the diagnosis. Midrange outcomes were an increase in the intent to treat, leading to APNs accessing an educational website providing options for the management of overweight and obesity based on CPG. Long term outcomes, while listed, were outside the scope of this project. Ultimately, the goal is to reach permanent practice change with ongoing high levels of intention to treat and successful sustained weight reduction.

The logic model was based on several assumptions:

1. APNs would complete an online survey with candor and be receptive

to changing practice to follow CPGs.

2. Treatment would be provided only to clinically appropriate patients. The APN and patient together would determine if treatment was safe and appropriate for the patient's health.
3. Patients would be receptive to treatment recommendations. Obesity is an emotionally charged topic and can be challenging for the provider to address and the patient to hear.
4. Diet modification and physical activity remain the primary therapy. Medications and surgical interventions are considered adjunctive therapies, secondary to lifestyle modification. If the behavior does not change, no treatment can be successful.
5. Adherence to CPGs. The practice of medicine should follow the best evidence. While one treatment is not a panacea for all patients and care should be individualized, individualization should take place along a pathway that supports the best possible outcome.

External factors that may have proven to be barriers were identified. They included:

1. The APN attitude toward obesity and management of obesity. If the provider has a negative attitude regarding obesity, viewing it as a character flaw instead of a disease, treatment would be doomed to failure.
2. The patient attitude toward obesity and its management. There are limited opportunities for success if the patient is of the belief that there

is nothing that can be done to permanently manage their weight. Additionally, some obese patients have no desire to make changes or lose weight.

3. Reliable access to the survey.
4. Reliable access to the website. This is needed on both the upstream and downstream side. A reliable host was required.
5. Browser and operating system compatibility. Code was written for the four most commonly used web clients. Creating a separate mobile version of the site was not feasible. This may have limited accessibility depending on the device used to access the site. The site may be accessed from work-based devices. A host at risk for being blacklisted was not desired for this project.
6. Cost of hosting and maintaining the website. Registering the domain name was reasonable in cost. The expenses may build based on the amount of web traffic and the bandwidth required to handle the traffic. Ongoing funding could become problematic as most sites are supported via advertisements over which the domain registrant has little control. This could be managed via a disclaimer that the presence of advertising does not represent endorsement of any product or service over another. Hosting was changed to a privately held server at the expense of the lead investigator to avoid any conflict of interest due to third-party advertising. There were no barriers to utilizing the site with ad-blocking software in use by the end-user.

The website domain name was registered as obesitycpg.com. It went live August 1, 2017.

NAME OF PROGRAM/PROJECT:
Improving Obesity Management in Primary Care

INPUTS	OUTPUTS		OUTCOMES		
	Activities	Participants	Short-term	Midrange	Long-term
- Time - Planning - Survey design - Educational website design - Web host - Legal discaimer - APNs in primary care - Adults 18-65 with BMI 25+ - APNs practicing in the Midwestern U.S. - Routine websites updates based on guideline updates	- Examination of APNs' current attitudes, beliefs, and practices managing obesity - Participation in website regarding obesity treatment - Wellness visits - Diagnosis of obesity - Application of CPGs	- APNs - Adults 18-65 with BMI 25+	- Evaluation of attitudes - Recognition of barriers to treatment - Increased diagnosis of overweight and obese - Increased intent to treat - Improved application of clinical guidelines - Minimum 50% response rate to questionnaire	- Accessing CPG -based educational website - Prioritized web site placement in search engine results - Continued increases in intent to treat - Positive lifestyle changes - Positive result with weight reduction	- Ongoing access to site - Ongoing care for obese patients - Reduction of risk factors for chronic disease - Clinically meaningful weight loss - Ability of web site to generate enough revenue to maintain hosting fees, traffic expenses, and site upkeep

ASSUMPTIONS	EXTERNAL FACTORS
1. APNs will complete survey with honest personal reflection and receptive to changing practice to align with CPGs. 2. Treatment provided only to clinically appropriate patients 3. Patients will be receptive to treatment recommendations 4. Diet modification and physical activity remain primary therapy 5. Adherence to CPGs	1. APN attitude toward obesity management 2. Patient attitude toward obesity management 3. Reliable access to survey 4. Reliable access to website 5. Browser and operating system compatibility 6. Cost of hosting and maintaining website

EVALUATION PLAN:
Examine patterns in responses to guide future education that leads to increased CPG application.

Figure 3. Project logic model.

Summary

Adult overweight and obesity are at epidemic proportions in this country. They are both underdiagnosed and undertreated in primary care. Primary care providers are uniquely positioned to address this problem starting at annual wellness visits, yet numerous studies have demonstrated that providers do not consistently address the problem. There are multiple clinical practice guidelines available, but they can be unwieldy due to their breadth and scope. Paring down the guidelines into a manageable algorithm via an interactive website should improve treatment numbers and, ultimately, reduce overall health risks for those treated.

Chapter II

Review of Relevant Literature and Evidence

Literature Review

A comprehensive review of literature was performed utilizing the following databases: Summon®, Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, and ProQuest. Search arguments included primary care, overweight, obesity, nurse practitioner, clinical guidelines, socioeconomic, rural, causality, epidemiology, and EBP. Search terms were used independently and in various combinations with the operators OR and AND. Barring gold standard source materials, the review was limited to the most recent ten years of peer-reviewed or scholarly journals. Select governmental sources were utilized.

The literature review was broken down into several segments. Disease factors that advanced practice nurses (APNs) could theoretically impact in practice were examined. These factors included causation, treatment coverage, disease management, and barriers to treatment.

Causation. Overweight and obesity causes are well-described in the literature with the fundamental problem being one of energy imbalance and physiologic changes. Activity, lifestyle, and food choices are also factors. Socioeconomic factors and locale also impact overweight and obesity.

***Energy imbalance and physiology*.** Data from the NIH demonstrates that greater than 50% of the U.S. population are overweight or obese (Haidar & Cosman, 2011). Worldwide, the prevalence of overweight and obesity has increased due to increasing caloric intake and sedentary lifestyles as Western habits are increasingly adopted (Haidar & Cosman, 2011). The oversimplified cause is unchanged: an imbalance resulting from excess energy input and decreased energy output (Haidar& Cosman, 2011; Nguyen & El-Serag, 2010). Genetic and hormonal dysfunctions are exacerbated by poor lifestyle habits, making obesity a treatment challenge (Haidar & Cosman, 2011). This is compounded by the impact significant weight loss has on stimulating increased hunger due to the loss of adipose cells and the subsequent decrease in levels of leptin (Haidar & Cosman, 2011). Even in subjects able to lose significant amounts of weight, less than 20% of adults classified as overweight or obese can maintain a 10% reduction in body mass (Haidar & Cossman, 2011). Realistically, surgical intervention in concert with lifestyle modification linked to ongoing support is the most effective solution (Kitzinger & Karle, 2013).

Food deserts. Food choices are one problem that contributes to overweight and obesity, but what happens when the choices are beyond control? Limited accessibility to quality foods, living in a so-called "food-desert," often contributes to ongoing weight problems and poor food choices. Although hampered by sample size, a 2016 study by Zenk, Mentz, Schulz, Johnson-Lawrence and Gaines demonstrated with significance ($p < .05$) that accessibility to smaller grocery stores and decreased access to fresh fruits and vegetables have a positive association with obesity. Although not statistically significant, there was a negative correlation between obesity and large grocery stores. The same

negative correlation was present with the perception of adequate availability to fresh fruits and vegetables (Zenk et al., 2016). Continually beating the horse about better food selections is not beneficial in regions with limited accessibility to quality foods; this includes rural areas.

Socioeconomics. Socioeconomic status (SES) also contributes to obesity. García-Álvarez et al. (2007) explored the impact of SES and demographics on overweight and obesity in adults utilizing cross-sectional data over a ten-year span. SES did have influence on BMI overweight and obesity prevalence among the oldest group of females from 45 to 64 years old as well as in the 65 to 75-year-old female cohort. Over the ten-year period, female WC-defined overweight and obesity changed based on SES with overweight levels decreasing and obesity increasing. This is probably related to accessibility of food and quality of food available. There was a negative relationship between the size of community and BMI overweight and waist circumference overweight. There was a direct correlation between socioeconomic status and dietary patterns and physical activity. Lower SES groups tended to have a poor-quality diet compared to those in higher SES groups. When looking at food quality, energy dense foods tended to be more accessible and less expensive.

Locale. Befort, Nazir, and Perri (2012) analyzed data from the U.S. National Health and Nutrition Examination Survey for the period from 2005 to 2008. Both interview and anthropometric data were evaluated per the National Health and Nutrition Examination Survey Analytic and Reporting Guidelines (Befort et al., 2012). They found that obesity prevalence was greater among rural adults compared to urban adults. The prevalence was statistically significant ($P = .006$) when controlled for demographic, diet,

physical activity. Both rural and urban adults shared race-ethnicity and percent of calories from fat as significant correlates of obesity. Married adults possessed a higher incidence of obesity among rural residents. Among urban residents, older age and lower education level as well as inactivity were associated with obesity.

Coverage. These studies beg questions regarding the impact of primary care on obesity. The Centers for Medicare and Medicaid Services (2011) issued a report outlining the evidence and decision to begin reimbursement for intensive behavioral counseling for the management of obesity in the primary care setting. Medicaid has variable coverage for treatment, with some states covering the USPTF Grades A and B recommendations (Sebelius, 2014). Despite this, there has not been a consistent change in practice in the primary care setting.

Disease management. Katz, Lambert-Lanning, Miller, Kaminsky, and Enns (2012) found that less than half of family practice physicians addressed physical activity in obese patients. Patient counseling for obesity management by physicians is inconsistently provided and is reflected by limited success (Schuster, Tasosa, & Terwoord, 2008). Schuster et al. found that more than half of the participating physicians admitted to being uncomfortable discussing obesity and weight management with patients at the outset of the study. None expressed the same concern after training. After physician training in providing interventions, statistically significant weight loss ($p = .027$) occurred over the course of one year (Schuster et al., 2008).

The chronic care model has also been shown to be effective for managing adult obesity. A 2011 pilot feasibility study by Ely et al. used a combination of 30-minute individualized clinical evaluations followed by 60-minute intensive group lifestyle

modification education. Behavioral interventions proved to be effective and significant ($p = .0002$) in the intervention cohort, further supporting obesity treatment as beneficial in the primary care setting (Ely et al., 2011).

A systematic review by LeBlanc, O'Connor, Whitlock, Patnode, and Kapka (2011) demonstrated the effectiveness of behavioral interventions, including when provided in concert with pharmaceutical intervention. On average, subjects lost three kilograms of body weight over 12-18 months (LeBlanc et al., 2011). A group that received medical intervention in the form of orlistat lost an additional three kilograms at the one-year mark (LeBlanc et al., 2011). Wadden et al. (2011) determined that enhanced counseling led to sustained, clinically meaningful weight loss in one-third of obese patients. Routine, planned counseling by PCPs in addition to brief counseling sessions led by medical assistants proved beneficial for weight reduction as well (Carvajal, Wadden, Tsai, Peck, & Moran, 2013).

Barriers. With evidence supporting primary care management of obesity, what are the barriers preventing more frequent treatment? It is difficult to treat a condition no one ever discusses. It is also challenging to provide treatment if a patient cannot access either the necessary care nor providers trained to deliver that needed care.

Silence. Part of the problem was alluded to by Schuster et al. (2008) with providers admitting that they did not feel comfortable addressing obesity. Even with Medicare coverage for intensive counseling, obesity management is not typically a chief complaint for office visits and weight loss management takes place secondary to the patient's reason for visiting (Osunlana et al., 2015). Katz et al. (2012) also found that less than 40% of physicians always asked about eating habits or directly addressed

obesity during periodic adult well-visits. Less than 20% referred obese patients to self-help groups or provided pamphlets about healthy eating habits to patients (Katz et al., 2012).

Access to care. Access to care has been shown to be a barrier in treating overweight and obesity, with areas having dense primary care coverage possessing lower obesity rates (Gaglioti et al., 2009). Gunther, Guo, Sinfield, Rogers, and Baker (2012) found other barriers to care including the personal or social unacceptability of obesity, cost of treatment, prior experiences with obesity management, providers' lack of desire to manage obesity, inconsistency in care, perceived lack of services, lack of provider skill and experience in managing obesity, and belief that obesity care falls the purview of a different care provider.

Inadequate training. A lack of comfort with the treatment of obesity was a common theme in reviewing the literature. This may be, at least in part, due to a paucity of education regarding obesity management. Although the Royal College of Physicians and the General Medical Council in the United Kingdom established a base knowledge set and expectation for obesity management, providers still reported feeling inadequately prepared by training and lack of available resources to manage the disease (Chisholm, Mann, Peters, & Hart, 2013; McGowan, 2016). Inconsistency in obesity-related curricula was cited as a driving factor impacting the feeling of ill-preparedness in managing obesity with various departments addressing specialty-specific concerns and not the application of guidelines (Chisholm, Mann, Peters, & Hart, 2013). Curriculum content is not a problem limited to physician education as Rogge and Merrill found in a 2013 study of APN faculty. They found that educators emphasize the impact of obesity and weight

reduction on co-morbidities, but miss the mark in addressing pathophysiology, patient management, and the application of guidelines (Rogge and Merrill, 2013).

Clinical Practice Guidelines

There are a multitude of obesity-related CPGs available worldwide. They all tend to suffer from the same issue of overwhelming content rendering rapid clinical access challenging. Four specific guidelines were examined: NICE, NIH, AHA/ACC/TOS Obesity 2, and the recently released AACE-ACE guideline.

NICE and NIH. Provider education is only one part of the problem. The APN desirous of treating obesity must navigate a mountain of writing in traversing the CPGs. The National Institute for Health and Clinical Excellence (NICE) in the United Kingdom provides guidance on obesity management in both paper and electronic format. As Mercer (2009) pointed out, though, the summary version of the guidance is 80 pages long. The convenient quick-reference guide is just over a quarter of that size (Mercer, 2009). The NICE web site is similarly daunting, with multiple links throughout. The U.S. guideline from the NIH in 2000 is 94 pages long and the 2013 evidence update is a hefty 501 pages. Rapid reference and application of CPGs as a quick, in-visit reference is impractical at best.

AHA/ACC/TOS Obesity 2. The highly anticipated revisiting of the recommendations for the management of obesity from the American Heart Association, the American College of Cardiology, and the Obesity Society, known colloquially as "Obesity 2," was published in 2014. The guidelines address managing obesity to reduce the risk for cardiovascular disease and type II diabetes mellitus (Jensen et al., 2014). The guideline utilizes a critical question approach to address disease risk, following each with

a brief executive summary and strength of evidence rating. Obesity 2 is directed toward primary care providers to help support the management of obesity in practice (Jensen et al., 2014). Lifestyle changes geared toward diet and exercise remain the mainstay of the recommendations provided (Jensen et al., 2014). The impact of surgical interventions and their impact on cardiovascular disease and type II diabetes mellitus are also identified, complete with summaries and evidence ratings (Jensen et al., 2014). While pharmacotherapy is mentioned in several of the studies examined, there are no pharmacologic recommendations provided. In fact, specific mention is made that pharmacotherapy and intervention costs, among other factors, are not covered in the guideline (Jensen et al., 2014). Pharmacotherapy was omitted as a practical matter as the only approved long-term therapeutic agent available at the time of the review was orlistat (Jensen et al. 2014). Jensen et al. acknowledge the limitations of Obesity 2 and discuss areas for future study with respect to each critical question. An algorithm is provided along with an explanation of provider interventions, but these are limited in scope and methodology for specific interventions are not provided. Obesity 2 does an excellent job of providing the rationale for obesity management as a matter of reducing obesity-related disease risk and co-morbidities. There are excellent patient education points for the benefits of weight reduction, but it falls short in aiding the provider with specific methods for implementing interventions.

AACE-ACE. In 2016, the American Association of Clinical Endocrinologists and the American College of Endocrinology (AACE-ACE) published comprehensive CPGs to advance care of overweight and obesity. When taken *in toto*, they are a voluminous 203 pages long. The executive summary is a more reasonable 43 pages.

Both contain synopses of the guidelines and recommendations in easy-to-follow tables. The guidelines are intended to address the complexity of obesity in all aspects of the patient experience and facilitate care delivery in multiple disciplines (Garvey et al., 2016). The AACE-ACE CPG addresses nine general clinical questions that cover multiple aspects of overweight and obesity with sub-headings that address more specific topics (Garvey et al., 2016). There are over 120 recommendations with 160 supporting statements backed by nearly 1,790 graded references (Garvey et al., 2016).

The guidelines were developed by a group of physician members of both the AACE and ACE. They were reviewed by 18 AACE member physicians, most of whom are physician educators in endocrinology, one external endocrinologist, and one pediatric endocrinologist (Garvey et al., 2016). Financial disclosures were provided and did not add bias to the guideline. No APNs or allied health professionals are listed as contributors. Self-described as a "working document reflecting the state of the field at the time of publication," there is no specific description of how the guidelines will be updated (Garvey et al., 2016, p.1). There is also no mention made of criteria for monitoring or auditing the guideline. The opinions of the target population of obese and overweight individuals are not directly addressed. Some consideration is given by touching on patient readiness for change and managing expectations, however, direct input was not sought. Given that the guideline is clearly directed toward clinicians, the fact that there was no patient input sought is not necessarily a negative.

The AACE-ACE task force reviewed literature that addressed each of the top-level questions, looking for literature that was evidence-based and peer-reviewed (Garvey et al., 2016). The searches emphasized strong evidence as found in random controlled

trials and meta-analyses (Garvey et al., 2016). Cohort studies, case-control studies, and case series were included as second-tier evidence with consensus opinions, case reports, and mechanistic studies occupying the third tier (Garvey et al., 2016). The authors defined strong evidence as those studies ranked as level I or II and made up greater than 80% of the evidence in the CPG; subjective data represented only 23% of the evidence (Garvey et al., 2016). The evidence was then used to formulate graded recommendations from A to D, in order of strength. More than half of the recommendations were graded A, 30% were graded B, 6.9% grade C, and 10% were graded D (Garvey et al., 2016). The 1,788 citations were individually ranked and graded in the reference list, with their strengths and weaknesses discussed in-text (Garvey et al., 2016). The process for formulating the recommendations and external modifiers were clearly defined and integrated to aid clinicians in practice (Garvey et al., 2016). Recommendations are supported in-text with citations, evidence-levels, and grades (Garvey et al., 2016). Specific guidance is provided along with addressing long-term sequelae of obesity. The evidence base, with evidence level and grading, is discussed immediately following each recommendation (Garvey et al., 2016). The CPG is organized under nine broad questions that encompass the full continuum of the treatment of obesity (Garvey et al., 2016). In depth questions that narrow the focus of the recommendations follow most of the broader questions (Garvey et al., 2016). There are numerous tables and figures throughout the guideline that illustrate the concepts and flow of care. The appendix contains full-color tables and a brief explanation of the obesity chronic care model to aid in guiding the clinician's care (Garvey et al., 2016). While there are specific use examples for managing patients under appropriate headings, barriers and facilitators are not directly

addressed. The authors address resource implications tangentially as a part of the obesity chronic care model.

Summary

Despite numerous studies demonstrating the efficacy of obesity treatment in primary care, there is still a gap in practice. Behavioral interventions have been shown to be effective, but only to a limited extent. As few as five years ago, there were no Food and Drug Administration approved options for long-term medical management beyond behavioral interventions, medications with significant untoward side effects, or surgical interventions. The approvals of lorcaserin in June 2012 and phentermine-topiramate in July 2012 were catalysts toward a new approach to obesity care (U.S. Food & Drug Administration, n.d.a; U.S. Food & Drug Administration, n.d.b). The practice guidelines, however, lagged. The only way to fight overweight and obesity in primary care is to acknowledge the disease and its impact on overall health and initiate treatment.

The AACE-ACE guideline is comprehensive in its scope and provides clinicians with the resources to manage patients in a safe, meaningful way. However, having a quality guideline is not enough. Clinicians must be willing and able to readily navigate and implement the recommendations. It is unrealistic to expect primary care providers will navigate several hundred pages of recommendations to aid in decision-making when there is already reluctance and discomfort with treatment. Clinicians are accustomed to using reference websites to augment practice. Access to a website which streamlines recommendations and facilitates decision making is the next step forward in the management of obesity in primary care.

Chapter III

Methods/Plan

Project Design

This descriptive study examined advanced practice nurse (APN) attitudes and practices regarding the management of obesity in primary care. The perceived benefit of access to a website translating the AACE-ACE obesity clinical practice medication considerations into a more succinct format and its potential impact on changing clinical practice for the management of obesity was also examined.

Sample/Target Population

The target population for this study was APNs in family practice in the Midwestern U.S. There were significant financial and time constraints with accessing this vast population. The most accessible members of the population were those providers with membership in the Iowa Nurse Practitioner Society and 4-State APN, although invitations were placed on all Midwestern nurse practitioner society social media websites. When there was a dearth of responses, the survey was opened to APNs nationwide. Participants were recruited via social media and advertising requests to APN organization websites. No compensation was offered for participation.

Inclusion and Exclusion Criteria

Those APNs holding current, valid licensure and practicing at least part-time providing primary care or family practice, and whose patient base included managing adult patients, met inclusion criteria. If in a collaborative practice agreement, the APN was to be able to manage obesity per clinical practice guidelines without restrictions. The provider needed to have prescriptive authority to the extent permitted in the state of practice. Active recruitment was geared toward APNs, but due to the nature of the World Wide Web, the study was accessible by anyone with access to the web. Providers that did not meet criteria were excluded. Per tabulation by SurveyMonkey.com, 242 individuals attempted the survey. A total of 147 individuals completed the survey.

Protection of Human Subjects

The project presented minimal to no risk for human subjects. No protected health information (PHI) was accessed. The anonymized data remained in an electronic form during analysis and will be deleted one year after the close of the survey. Since there was minimal to no risk for human subjects and no PHI was accessed, the study was determined as exempt by the Pittsburg State University Institutional Review Board. All participation was voluntary and involved adults over the age of 18. No vulnerable populations were involved. No coercion or deception regarding the nature of the study took place. Responses to the surveys remained anonymous. There were no risks associated with completing the questionnaire. Participation was strictly voluntary. No compensation was provided. SurveyMonkey.com hosted the survey. Participant email addresses were not collected.

Ethical Considerations

There were not extensive ethical concerns attached to this study. After the launch of the website, it was presumed that the guidelines would be applied in an appropriate and ethical manner. It was also accepted that the participating providers would make clinical decisions that fell within their legal scope of practice and were presumed to be in alignment with the needs and in the best interest of their patients.

Additional attention was given toward the questionnaires, answers, and the privacy of those participating. Anonymity was assured with the responses being aggregated and reported *en masse* by SurveyMonkey.com. The guarantee of anonymity facilitated honesty in participant responses. While it was unlikely that participants would provide invalid or dishonest answers to the questions presented, resulting in contamination of the data, the possibility could not be discounted. It was presumed that all answers provided were in alignment with the respondent's current beliefs and practice. As there was not currently a representative tool, one was created. Questions were written in neutral language, without intent to manipulate results, increase statistical power, or create false significance.

Instrument

The survey (See Appendix C) was based on a 5-point Likert scale. It opened with six qualifying questions, including one covering collaborative practice agreements, and one general regional demographic question. The initial six questions were strict qualifiers. One particular option from each possible answer disqualified the respondent from the remainder of the survey.

The next sections addressed the APN's views of obesity, views of treatment, and

current well-visit practices, respectively. Each item was designed with multiple related questions in each table. Skip-logic was utilized on the following question about whether or not the APN offered treatment for overweight and obesity to streamline the survey for those respondents that did not treat. Current treatment practices were examined in the next several questions, addressing guideline usage and APN perception of patient participation in treatment. The responses re-unified with a question about outside referrals. Barriers to treatment, real and perceived, were then explored. CPGs, their accessibility, and their usage were addressed in one item. Factors influencing treatment were then examined, with specific questions addressing website access. The survey concluded with general demographic questions.

Operational Definitions

Operational definitions stemmed from the previously defined terms:

1. Overweight- BMI between 25 and 29.9
2. Obesity- BMI greater than 30
    - Class I- 30-34.9 (moderately obese)
    - Class II- 35-39.9 (severely obese)
    - Class III- greater than 40 (very severely obese)
3. Intent to treat (ITT)- the provider's plan to initiate medical treatment of obesity. If in the presumed absence of contraindications treatment would be initiated, then this is considered positive. This is a statistical concept normally used to address missing data (Gupta, 2011). In this case, it addresses the ethical problem of applying inappropriate treatments.

4. Treatment- Individually or in combination: the prescription of specific medications, dietary recommendations, caloric restrictions, exercise regimens, or referral to a specialist
5. Documentation of diagnosis- Listing of diagnostic codes directly associated with obesity. This includes ICD-10 code groups E65 (adiposity), E66 (overweight and obesity), and Z68 (BMI; *Overweight, obesity, and other hyperalimentation E65-E68* [Web page], n.d.)
6. Acceptance of treatment- The patient's tacit agreement and/or participation with the prescribed plan of care

Procedure

IRB approval. As with any study performed in conjunction with coursework at Pittsburg State University, protection of human subjects had to be addressed via the Institutional Review Board (IRB). This study involved minimal risk beyond daily activities. No PHI was accessed and there was not a personal or professional risk associated with the questionnaire. Subjects were not members of a vulnerable or special population. The application was submitted to the PSU IRB for expedited review, but was determined to meet criteria for exempt status.

Timeline. After obtaining IRB approval, the survey was created and went live on May 6, 2017. Data collection continued until June 28, 2017. Data were tabulated and analyzed by July 15, 2017.

Resources needed. Human resources required were the study participants and authors. Data were tabulated by faculty co-authors. Financial support for all expenses was provided by the lead author with no outside assistance or influence.

There will be ongoing fees with respect to maintaining the domain name. Ongoing web hosting fees will be required. If web traffic is significant, there will be fees associated with bandwidth. Legal fees for the development of a defensible disclaimer were not required.

Study experience. Participation in the study was by direct intent. Subjects accessed the survey website by direct link. Subjects were directed to the informed consent page on SurveyMonkey.com that explained the details of the study, including the research questions, qualification requirements for participation, and the risks of participation. After agreeing to participate, the subject answered qualification questions and were either permitted to proceed or directed to the disqualification page. Internet protocol (IP) addresses were neither tracked nor limited to only one survey attempt. After qualifying for the study, participants were asked a series of questions with a maximum anticipated duration predicted of 30 minutes.

Data collection and outcome. Data were aggregated automatically via SurveyMonkey.com. With the survey hosted in electronic form, consistency in data collection was easily maintained. The outcome data collected from the survey were:

1. APNs' attitudes and beliefs about overweight and obesity
2. APNs' beliefs about overweight and obesity interventions and treatment
3. APNs' current practice and documentation with respect to overweight and obesity
4. APNs' awareness and use of CPGs
5. APNs' perception of patient participation in treatment
6. APNs' willingness to utilize web-based CPG resource in the management of overweight and obesity

Treatment of Data/Outcomes/Evaluation Plan

Tools/instruments described and linked to measures and objectives. The overarching question and objectives were addressed by the survey instrument. Outcome measures related back to the short-term goals outlined in the logic model (Figure 3) and the research questions described previously. The instrument designed was an electronic survey hosted on SurveyMonkey.com. Responses were scored on a 5-point Likert scale.

Survey items consisted of a stem-statement followed by several options for completion of the stem. Respondents selected the scale value that most closely corresponded with their belief. The first two questions about participant opinions about obesity and obesity treatment set the stage for evaluating respondent bias. The third question addressed the documentation of overweight and obesity to establish a baseline for comparison and improvement. After determining if the respondent provided obesity treatment in questions four and five, the use of CPG and the current acceptance of treatment were examined in questions six and seven, respectively. Question eight examined the use of other specialties in treating overweight and obesity. Respondents to question nine assessed provider-based barriers to treatment. Question ten served to help validate the prior question about awareness of CPGs. The final survey question looked forward toward factors that would lead providers to offer care, including accessing a website that provides guidance in treatment based on the AACE-ACE CPG. The last question asked addressed general respondent demographic information for use in further examining the relationships between responses.

Plan for Sustainability

The responses to the survey served as the rationale for developing and implementing a website providing guidance to clinical practice. After the initial website build and deployment, site upkeep and maintenance will remain relatively straightforward. The lead investigator will review CPGs for changes at least annually. The website will be updated accordingly.

There will be several ongoing expenses associated with the website, including the domain name registration fee and hosting fees. These are generally levied annually. Depending on the host, there may be limited options for avoiding advertisements. Presuming nominal fees, the lead investigator may opt to fund the site out of pocket. Data from website use, in conjunction with the data gathered via this survey, may be of use in future research.

Chapter IV

Evaluation of Results

Restatement of Purpose

This project was designed to establish advanced practice nurse (APN) attitudes and practices in the management of overweight and obesity in the primary care setting. The clinical practice questions addressed in the survey examined APNs' attitudes and beliefs about overweight and obesity. Separate examination of knowledge and current practice managing obesity took place, followed by an exploration of the awareness of overweight and obesity CPGs as well as the intent to use those CPGs after gaining awareness. The project also explored APNs' perception of patients' participation in treatment and their willingness to use a web-based CPG resource aid in managing overweight and obesity.

Description of Population

The study was open to APNs providing primary care to adults aged 18-65 on at least a part-time basis. In order to qualify to move onto the survey questions, respondents were required to complete qualifying questions. There was one question that addressed collaborative practice agreements (CPA). To move forward with the survey, they were required to either have full practice authority with the ability to prescribe controlled substances or not be limited by their CPA. Of the total number reaching this point (*N* =

192), almost 23% of respondents (n = 45) were hampered by their CPA and could not complete the remainder of the survey. The result was the creation of two samples for this particular item: the unrestricted group (N =147) and the restricted group (N = 192.)

The survey was hosted on SurveyMonkey.com and ran from May 6, 2017 to June 28, 2017. The two samples overlapped as they both were required to address the qualifying practice restriction question, but only the unrestricted group were able to continue beyond that point. Respondents were primarily located in the Midwestern US with both groups comprising just over 30% of the total participants (Figure 4). Duration of practice, education level, and gender data were collected only for the unrestricted group.

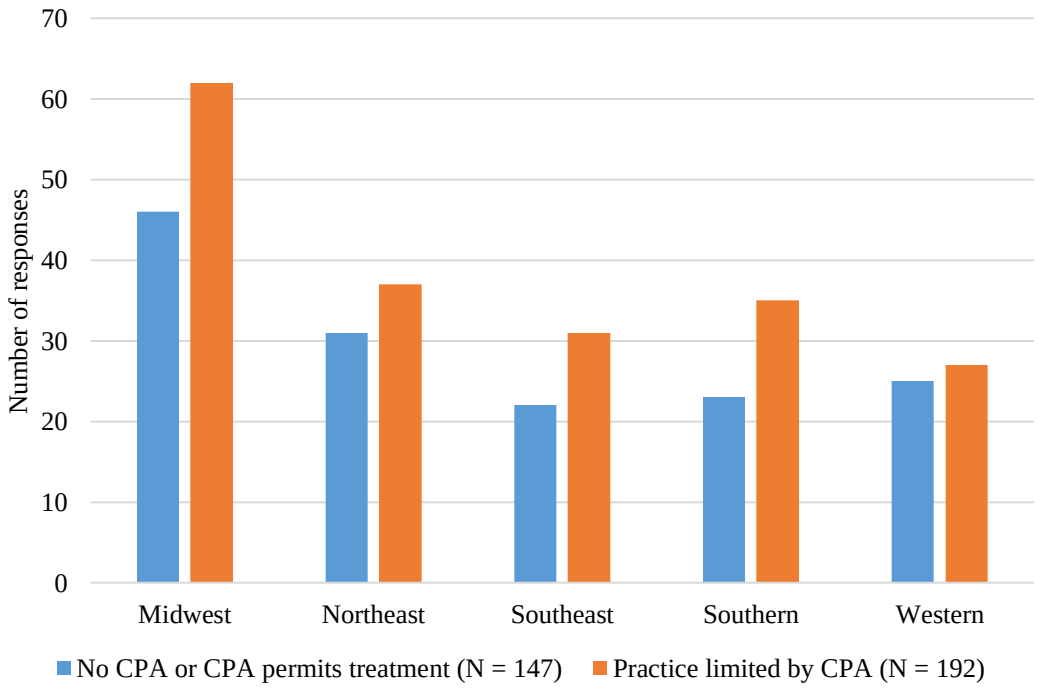

Figure 4. Geographic distribution of respondents

Fourteen APNs identifying as male completed the survey (Figure 5). One hundred sixteen respondents identified as female. Two APNs listed themselves as non-

binary, one opted out of answering, and 12 did not provide a distinguishable answer. One of those that chose not to give a clear answer opted to refute the presence of anything other than the two traditional gender identities.

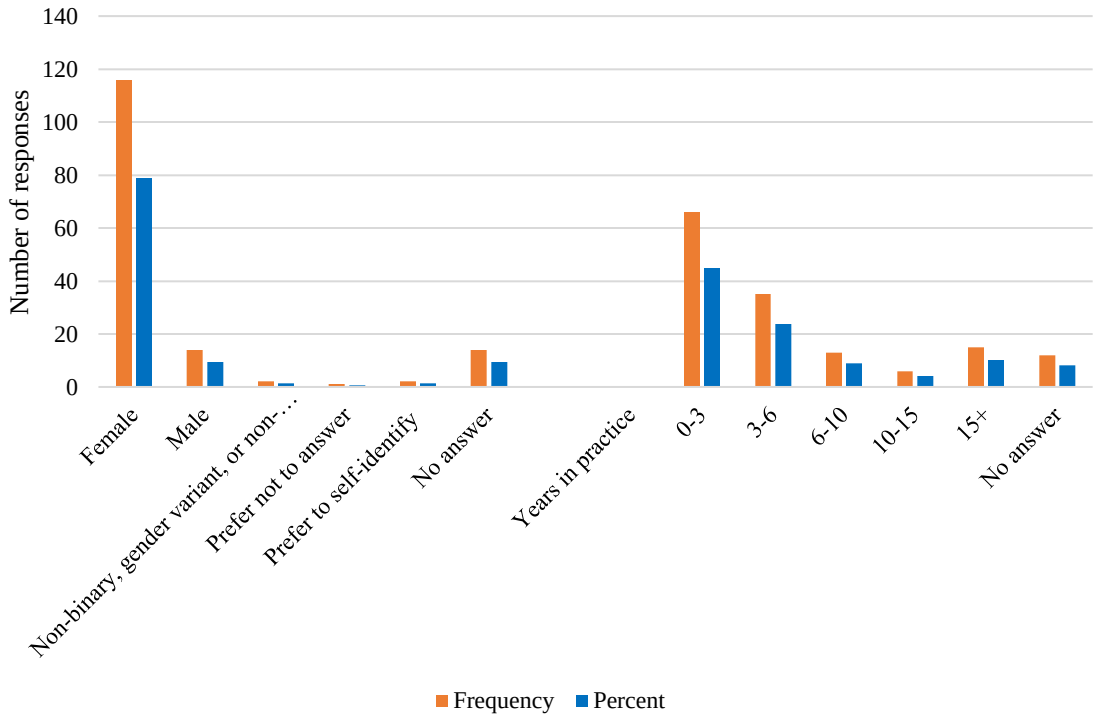

Figure 5. APN gender and years in practice (N = 147)

The majority of APNs (n = 101, 68.7%) completing the survey were in their first six years of practice (Figure 5). Twenty-one APNs possessed 10 or more years of experience. Thirteen had been in practice for 6-10 years. Twelve chose not to answer.

The respondents' practice settings were varied. Rural practice environments were identified by 53% of responding APNs (Figure 6). The majority of those, 29.3%, work in a private family/primary care practice. Hospital- or university-owned practices were represented by 19.7% of responding APNs and specialty/multi-specialty practices offering primary care made up 4.1% of APNs. In urban practice settings, private- or group-owned primary care offices were identified by 25.2% of APNs. Interestingly, only

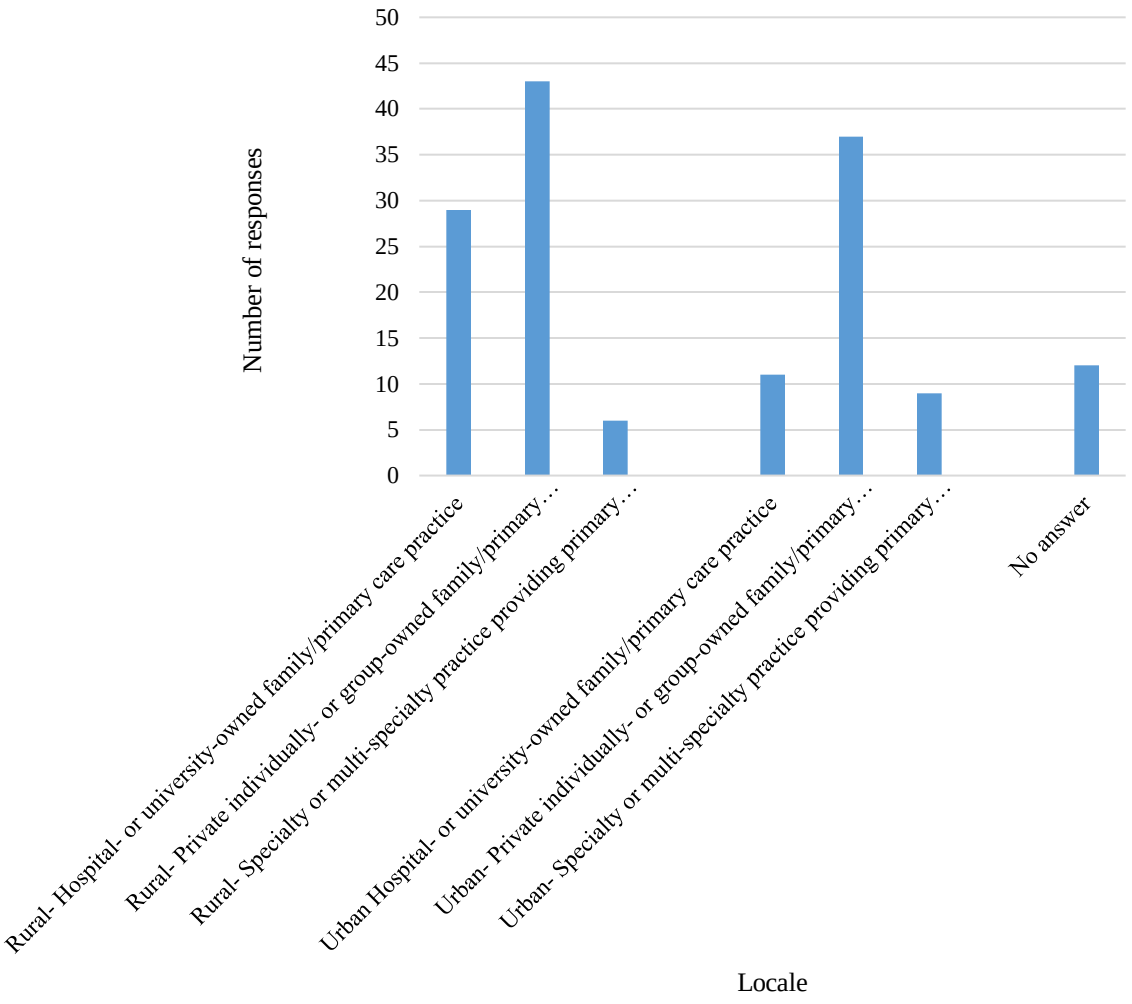

Figure 6. Practice locations *(N* = 147*)*

7.5% of those responding indicated that they worked in a hospital- or university-owned practice. Specialty groups were represented by 6.1% of APNs in the urban setting. No answer was received by 8.2% of eligible respondents.

The reported educational backgrounds of participants indicated that less than 10% of respondents held a Doctorate of Nursing Practice degree, of which one had an adult certification and twelve were certified as Family Nurse Practitioners (Figure 7). The vast majority possessed a Master of Science in nursing as Family Nurse Practitioners.

There were two Women's Health Nurse Practitioners, nine Adult Nurse Practitioners, and one Acute Care Nurse Practitioner. Twelve APNs did not answer this item.

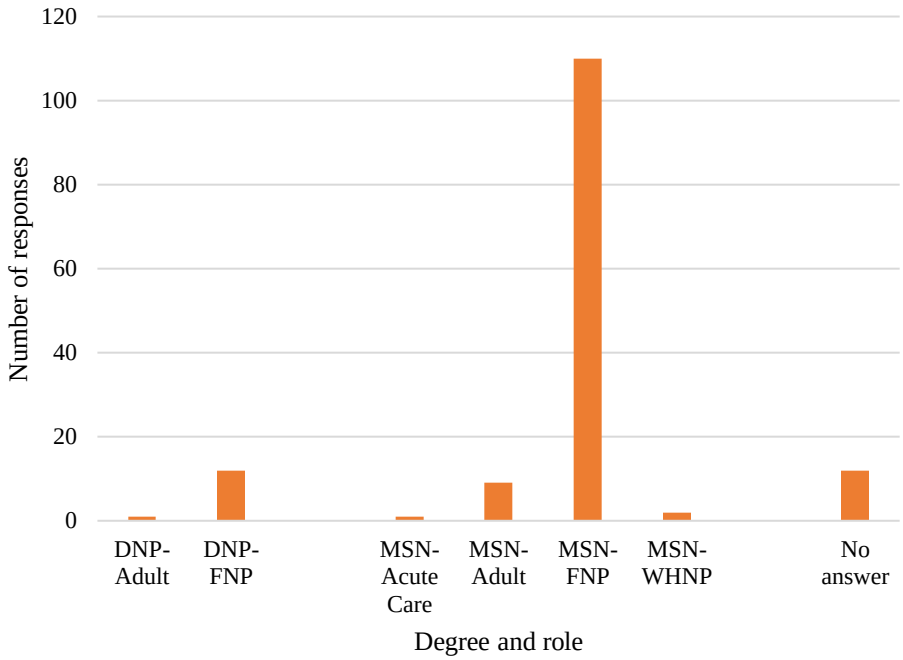

Figure 7. APN education level *(N* = 147*)*

Application of Data to Research Questions

1. What were APNs' attitudes and beliefs toward overweight and obesity?

Seventy-three APN responses, nearly 25% of the total responses for this question, indicated the provider generally possessed an unfavorable opinion of overweight and obesity. Obesity was seen as a character flaw by ten respondents, whereas 127 APNs disagreed (Figure 8). One hundred twenty APNs disagreed with the opinion that obesity was considered offensive. Surprisingly, more than 10% of APNs remained undecided about whether or not they found overweight or obesity offensive. Over half of APNs, approximately 55%, agreed that obesity should not be blamed on the patient. About one-third remained undecided. Almost 20% felt that overweight or obesity caused them to

specifically view the patient in a negative light. Despite Matsuzawa's (2009) demonstration of the physiologic alterations that characterize obesity as a disease, 44% of respondents either disagreed or were still undecided about treating obesity as a disease.

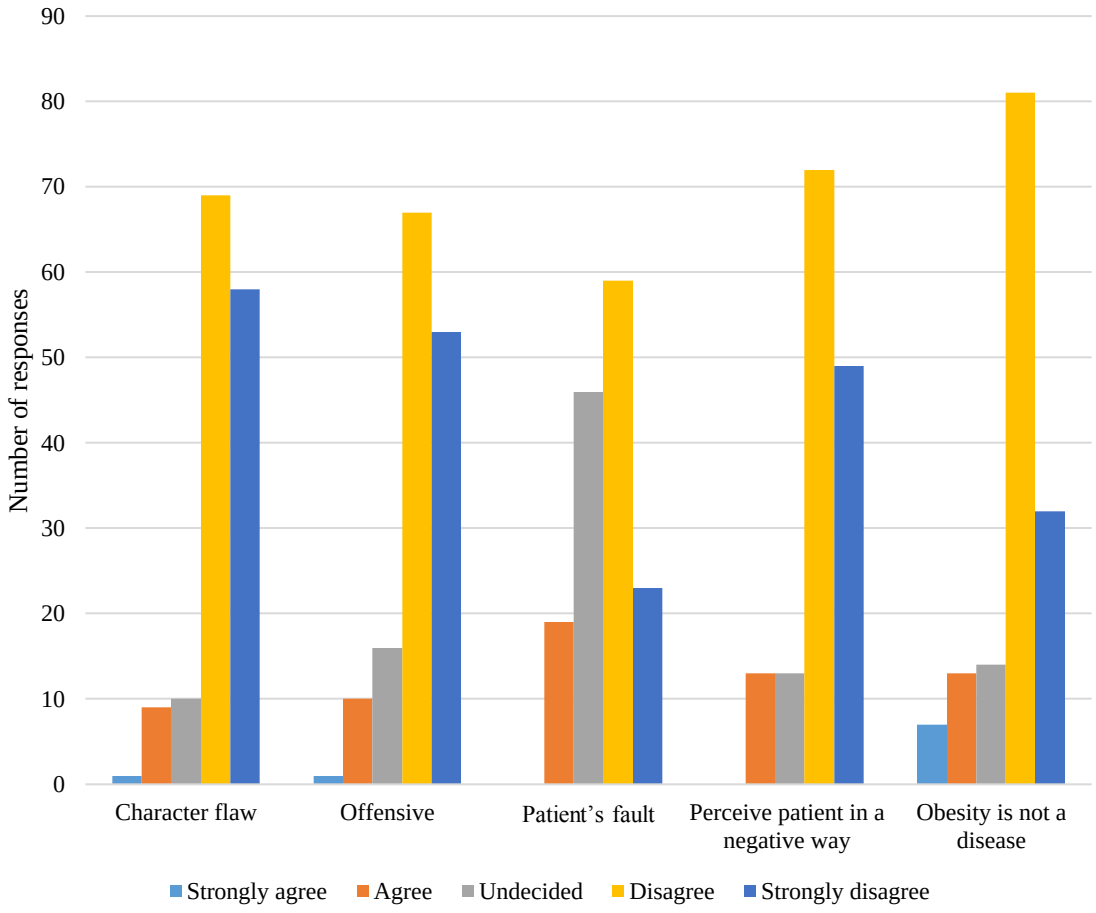

Figure 8. APN attitudes and beliefs toward overweight and obesity *(N* = 147*)*

2. What were APNs' beliefs about overweight and obesity treatment and management?

An overwhelming majority of APNs, nearly 94%, believed that obesity management should at least be offered in the primary care setting (Figure 9). A lesser majority (65.3%) viewed treatment as effective. One hundred thirty-eight (93.9%) APNs agreed that treatment is productive and should be offered to every patient. Not surprisingly, the same number denied discomfort with discussing weight issues with their

patients. Over 85% of the responses to this item indicated a positive belief about overweight and obesity treatment, leaving 12.8% of the responses undecided or in disagreement. One individual did not answer the line item addressing feeling comfortable with discussing weight management in the primary care setting.

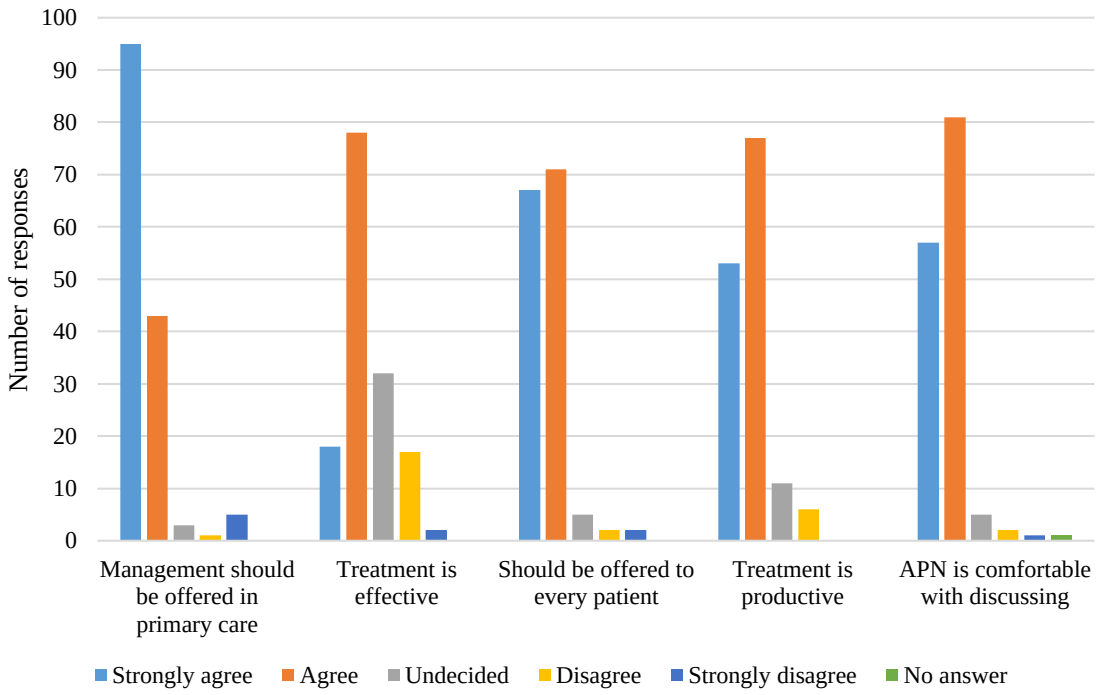

Figure 9. APN beliefs about overweight and obesity treatment *(N* = 147*)*

3. What was the APN's current knowledge and practice in the management of overweight and obesity?

One hundred eight individuals responded that they document or code for an obesity related diagnosis, when appropriate, at every well visit (Figure 10). Approximately 22% admitted that they do not document for the diagnosis of obesity, weight loss or nutritional counseling, or calorie recommendations. About 75% of responding APNs document or code for counseling and calorie suggestions. Almost two-thirds of responders documented pharmacologic options routinely. Percentages

continued to decline when bariatric surgical options were considered, with just under half of respondents documenting the possibilities. Forty-eight responders admitted that they did not document discussions about surgical interventions. Some indecision was present

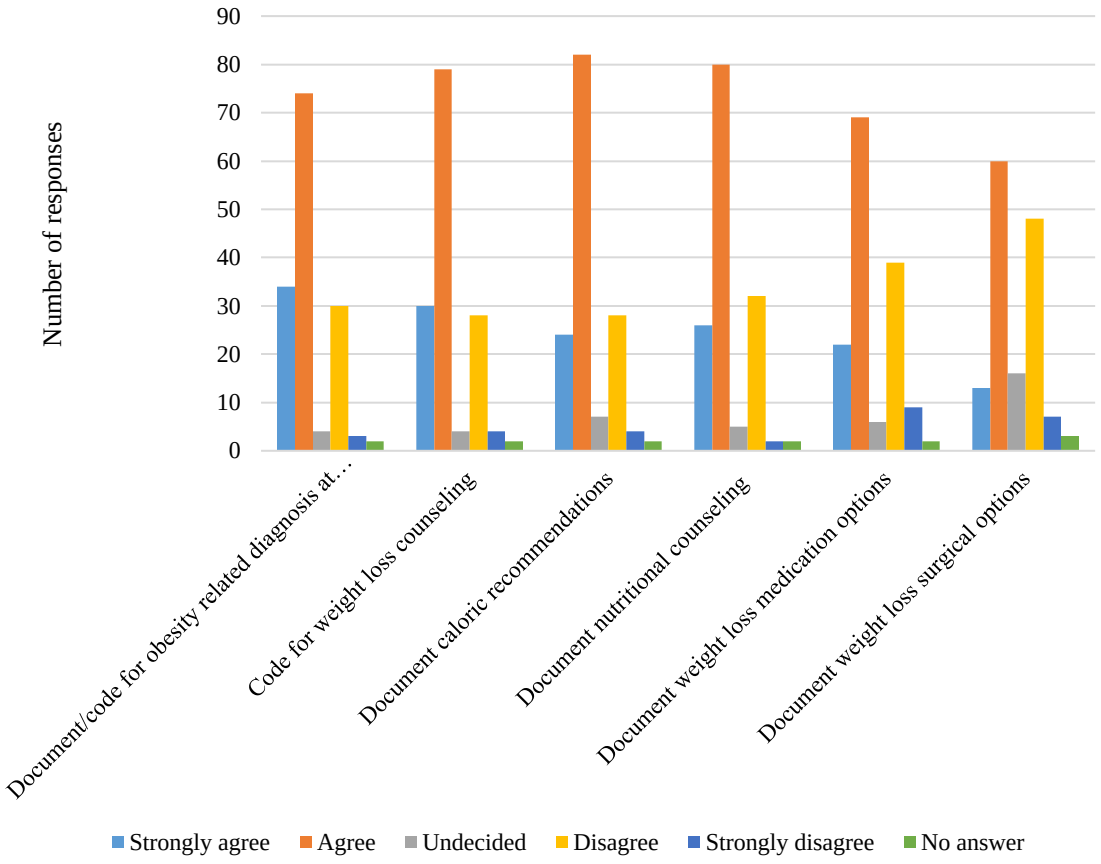

Figure 10. What is the APN's current knowledge and practice in the management of obesity? *(N* = 147*)*

with 4% undecided about documenting medications and 16% undecided about surgical options. In total, 67% of those responding included documentation related to overweight and obesity as a part of the well visit. Slightly over 25% of responses indicated ongoing lack of documentation of obesity management by APNs in primary care.

One hundred four (70.7%) APNs reported offering treatment for overweight and obesity in their practices; just over 20% of APNs responded that they do not offer treatment (Figure 11). Only 18 respondents reported as treating obesity confirmed that

patients were referred to them for management. Ninety-two APNs answered that patients were not referred to them for obesity treatment. Fully 25% of APNs did not answer this survey item.

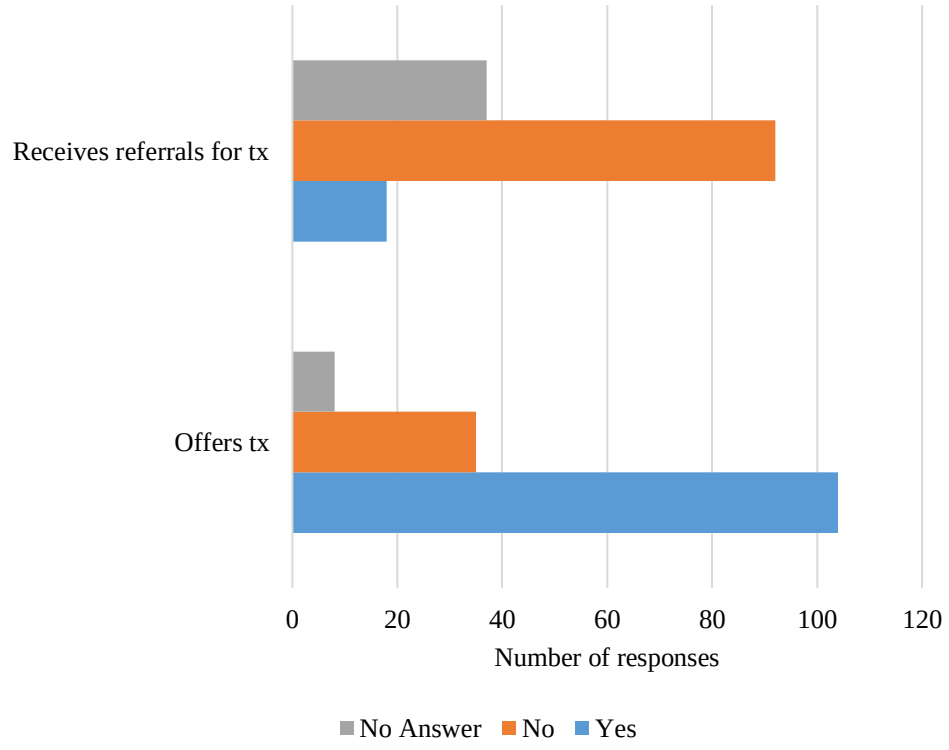

Figure 11. APNs offering treatment or receiving referrals to treat overweight or obesity *(N* = 147*)*

Opting to treat obesity did not preclude the option of referring to an outside provider for 77 (52.4%) APNs (Figure 12). The primary specialties to which APNs referred included dieticians (64.6%), bariatric surgery (49.7%), and bariatric medicine specialists (25.2%). APNs referred to exercise physiology about 11% of the time. Of the respondents, 22 (15%) did not refer to any specialty. Ten APNs offered write-in answers for referrals that varied from diabetes educators to internal specialists. One stated that a physician colleague ran a bariatric program that excluded APN management. Lack of Medicaid coverage was listed as a barrier to treatment by one respondent. One answer

indicated that a referral would be made if requested or if clinically appropriate. A single APN identified as a bariatric nurse practitioner.

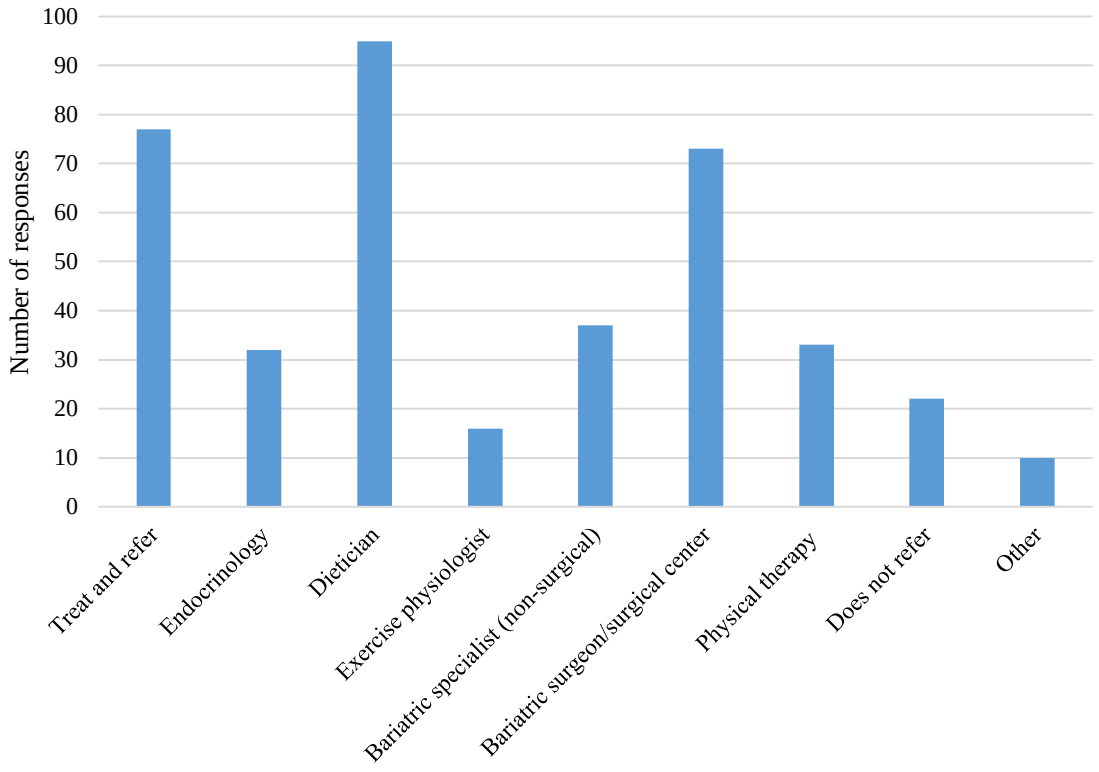

Figure 12. Where do APNs refer for treatment? *(N* = 147*)*

Several barriers to treatment were identified through the survey (Figure 13). On average, 67 individuals elected to omit this item, technically resulting in a smaller sample of 80 individuals. For consistency, *N* remained 147, resulting in disproportionately low percentages. Data were therefore calculated based on *N* = 147 and *n* = 80 with percentages reported as *N/n*. Eleven respondents (7.5%/13.9%) stated that they were not comfortable with treating obesity. There were eight APNs (5.4%/10.0%) who were undecided about their comfort with providing treatment. Feelings of hypocrisy due to personal weight concerns impacted how 37 APNs (25.2%/46.7%) managed obesity in

their practice. Not surprisingly, 51 APNs (34.7%/63.8%) felt that a lack of training or education was an issue with treating overweight or obesity.

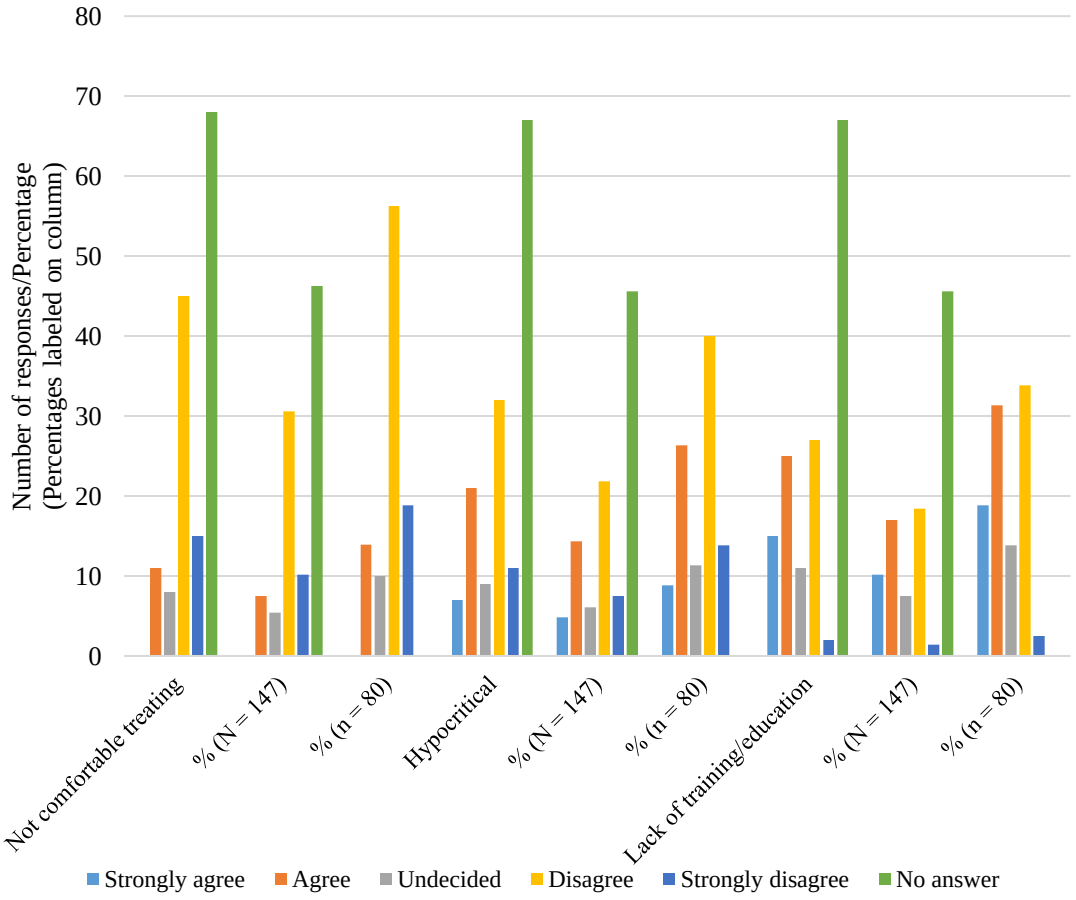

Figure 13. Provider-created barriers to treatment (*N* = 147/*n* = 80). *Note:* 5 out of 147 (3.4%) of respondents added a write-in selection.

Perception of patient participation and compliance with weight management varied greatly among APNs surveyed. Patient participation in obesity management declined over time. Nearly 30% of APNs estimated that fewer than one in four patients who were offered treatment for overweight or obesity accepted it (Figure 14). Just under a quarter of APNs answered that 25-49% of their patients accepted treatment. A

combined 23.2% of responding APNs estimated 50-100% patient acceptance of a treatment plan. Treatment levels at three months remained similar to initial acceptance of treatment. At the six-month mark, there were 36% and 50% decreases in the number of patients in the initial 50-74% and 75-100% treatment categories, respectively. The initial 50-74% category dropped by another 50% at the nine-month mark and again by 40% at the one-year treatment estimate. The initial 75-100% treatment category fared better, with an estimated decrease by 33% at the nine-month point. However, there were no further estimated decreases in patients still being treated through 12 months, with

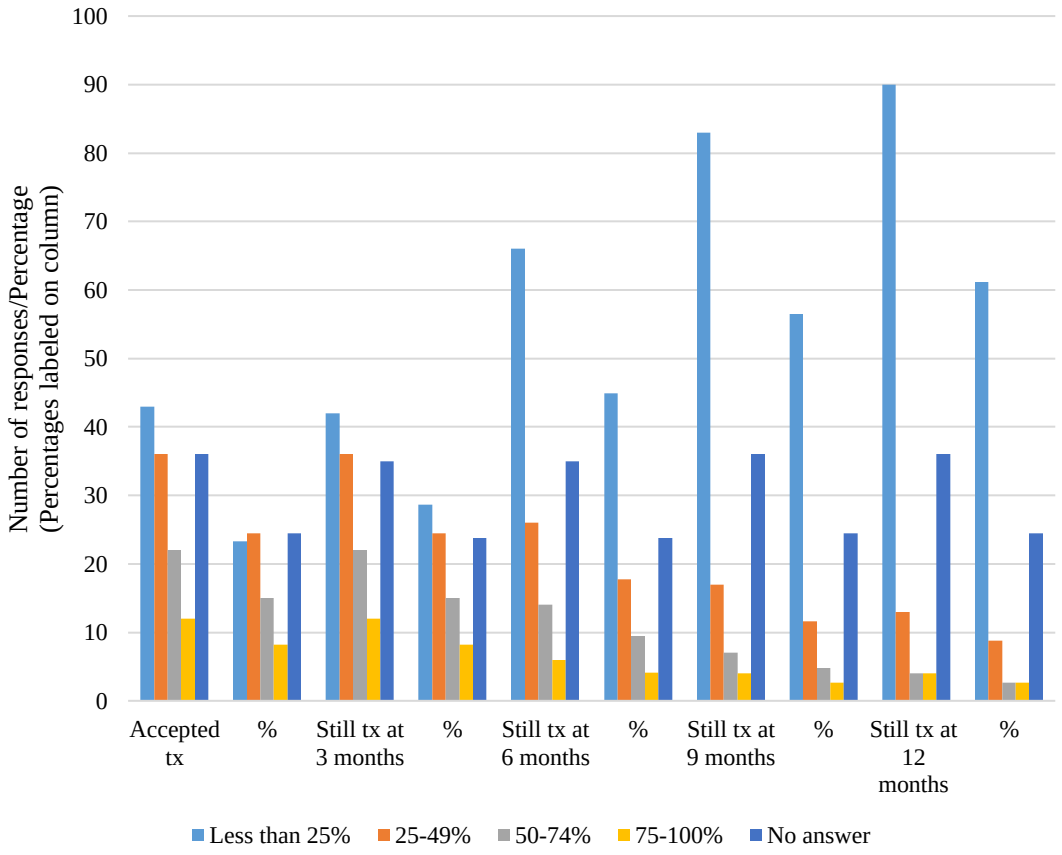

Figure 14. Of the last 100 pts offered treatment, what percentage accepted and how long did it continue? *(N* = 147*)*

approximately 33% of patients continuing to receive treatment for overweight or obesity. The initial 25-49% group had a relatively consistent decline in continuation of treatment.

A majority of APNs (53.0%) felt that patients were more likely to accept treatment if it were implemented utilizing CPGs (Figure 15).

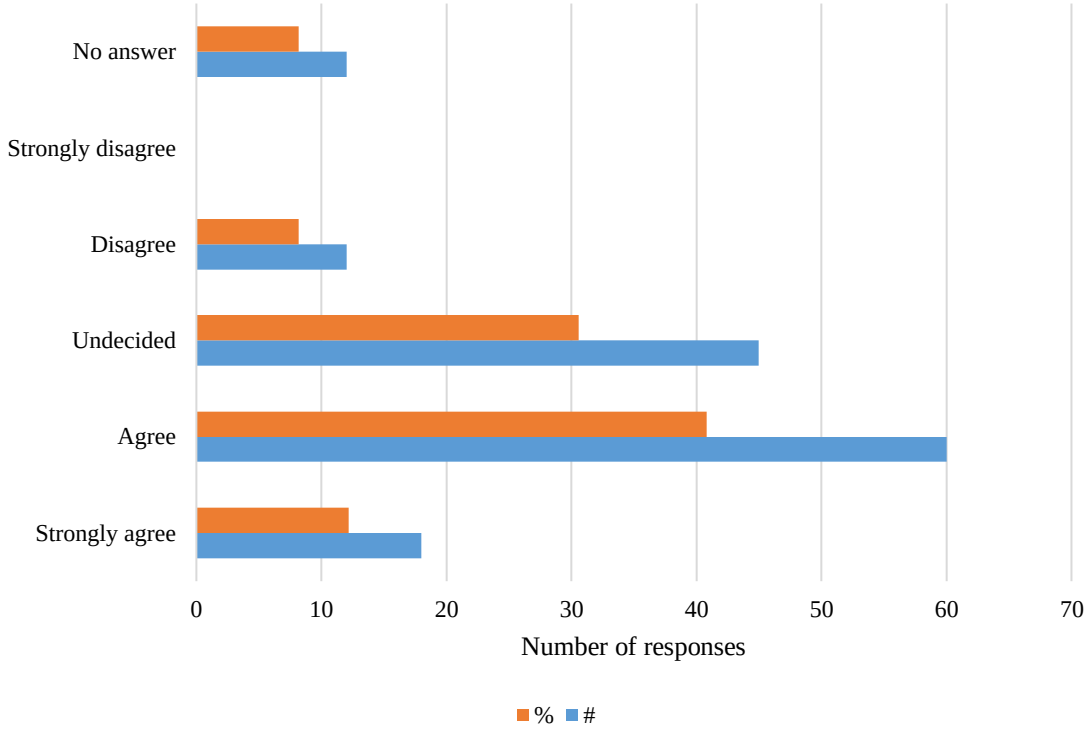

Figure 15. Likelihood of acceptance of care with application of CPG *(N* = 147*)*

4. What was the APN's awareness of overweight and obesity CPGs?

APNs were asked about awareness and utilization of guidelines independently of each other (Figure 16). The items were positioned and structured in such a way that multiple selections were possible. Respondents had the option of omitting the questions altogether or entering an individualized response. A direct relationship between guideline awareness and utilization was not structured in the survey and should not be inferred from this data. Most respondents (*n* = 83, 56.5%) were aware of the Obesity 2 guidelines, however only 39 (26.5%) admitted to utilizing those guidelines. The NIH CPG was fairly well known with 59 respondents acknowledging awareness. Again, less

than half of responding APNs reported using the guideline. Fifty-five (37.4%) APNs were aware of the AACE-ACE guideline. Utilization was reported by 33 APNs (22.4%). APNs reported awareness of six unlisted guidelines, including those from the American Diabetes Association and Obesity Medicine Association. Three individuals reported that they were unaware of any CPG for the management of overweight or obesity.

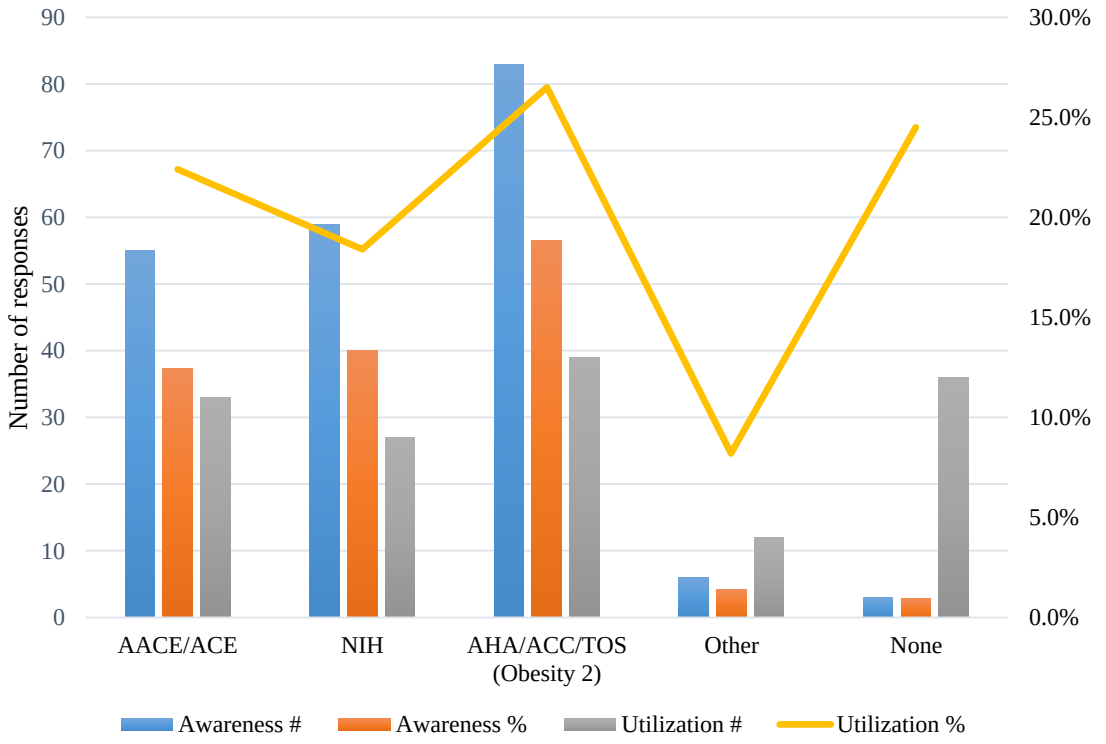

Figure 16. APN awareness and utilization of CPG *(N* = 147*)*

APNs were asked about the utilization of CPG in two different places. The first question was intentionally less direct (Figure 16. See Appendix C, question six). Thirty-six APNs (24.5%) indicated they "do not follow any guideline in the management of overweight or obesity." The later question in the survey came as a yes-no selection on instrument as item 10c. Fifty-seven APNs (38.8%) responded that they did not use CPGs (Figure 17). Seventy-five APNs (51.0%) reported using them and 15 (10.2%) did not

answer. More than half of responding APNs (59.2%) confirmed that they were aware of how to access CPGs pertaining to overweight and obesity.

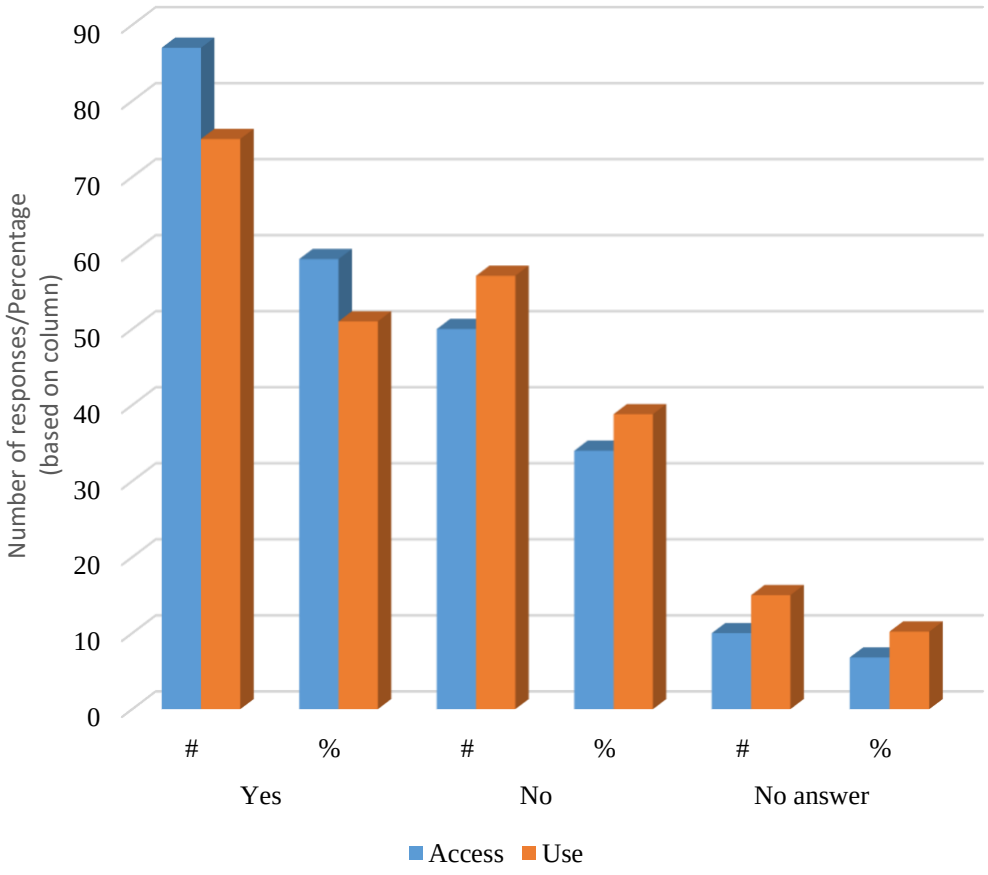

Figure 17. Is the APN aware of how to access CPGs? Does the APN use CPG in clinical practice? *(N* = 147*)*

5. What was the APN's intent to use overweight and obesity CPGs after becoming aware of them?

A majority of APNs agreed that patients were far more likely to accept treatment recommendations if they were based on CPGs (Figure 15). Furthermore, 118 APNs (80.2%) agreed that a website that provided treatment guidance based on CPGs would beneficial (Figure 18). One hundred fifteen respondents (78.3%) also agreed that a website directing care along CPGs would improve confidence when providing treatment. Only 20.4% of responding APNs (*n* = 30) felt that such a website would not be beneficial

to practice. According to 118 APNs (80.2%), they would use a website routinely to aid in implementing CPGs. The end result was confirmation that a large majority of APNs (*n* = 127, 86.4%) asserted that they were willing to treat overweight and obesity. Seven remained undecided and only one individual strongly disagreed with being willing to treat.

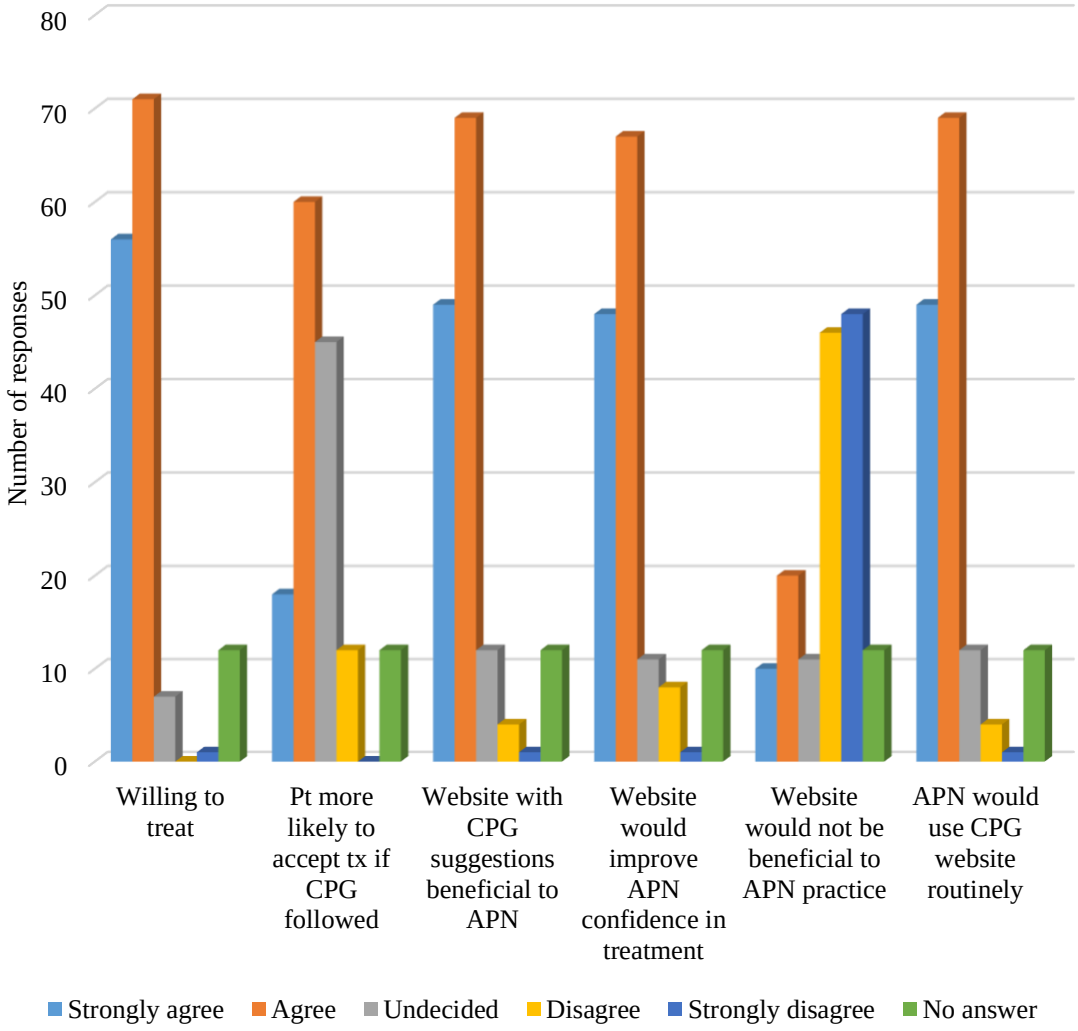

Figure 18. Factors influencing APN decision to treat overweight and obesity *(N* = 147*)*

Summary

The data revealed that there are still significant barriers to surmount if APNs are to effectively manage obesity in primary care settings. One hundred ninety individuals made it to the seventh qualifying question regarding collaborative practice agreements, but 43 APNs could not move past the question because their collaborative practice agreements limited their ability to manage overweight or obesity in the primary care setting in some fashion. APNs continue to show personal bias against overweight and obese people, at times blaming them for their disease. Despite the emphasis on EBP in APN training (AACN, 2006), a good percentage of APNs do not use evidence to address overweight or obesity.

APNs reported generally positive beliefs about the treatment of overweight and obesity, although there were mixed feelings when it came to efficacy of treatment. Most felt treatment should be offered to appropriate patients in the primary care setting and a majority admitted to feeling comfortable with discussing obesity with their patients. Most provided documentation according to CPG, but approximately 25% of APNs reported that they consistently do not document obesity diagnoses, general recommendations, or specific management. A majority of APNs manage obesity in the course of their practice.

An overwhelming majority of APNs admitted to awareness of CPGs of one sort or another, but far fewer utilize guidelines to manage overweight or obesity routinely. Part of the fault rested on patients that opted not to be treated. At one year, most APNs estimate that less than 25% of their patients who had initiated medically managed weight loss continued with the treatment. Accessibility of the guidelines was not entirely the

issue with just over half of APNs reporting that they were aware of how to access the guidelines. If this was the case, then why were overweight and obese people still not being at least offered treatment?

Some of the aforementioned barriers to care can be blamed on health care providers. The easiest way to overcome barriers is through knowledge, especially knowledge that is readily accessible. APNs indicated that they were willing to treat obesity and felt that following CPGs was important for patient buy-in. Most felt that a website that utilized CPGs to provide guidance for the treatment of obesity would be beneficial, improve provider confidence, and be used routinely. If utilized, this website has the potential to assist primary care APNs to better serve their overweight and obese clientele.

Chapter V

Discussion

Relationship of Outcomes to Research and Observations

Our intention was to examine APNs' current opinion and practice in the treatment of overweight and obesity in primary care in order to improve their management. Our secondary goal was to ascertain APNs' opinions about the potential impact of a CPG-based website on APN practice in managing overweight and obesity.

Demographics. The goal of a minimum 50% completion rate to the survey was met with 56% of eligible respondents completing the instrument. The demographic ratio of women to men in practice at approximately 8:1 was narrower than the current US estimates of approximately 11:1 by the Kaiser Family Foundation (2017). The difference to practice is likely negligible.

Attitudes and beliefs toward obesity. The study found APN attitudes toward obesity in general to be less negative than suggested by prior studies. Unlike what Schuster et al. found in their 2008 study, a large percentage of APNs asserted that they were comfortable with discussing obesity with patients. Most APNs indicated a willingness to treat overweight and obesity. Nearly one-third of APNs reported limited education and training in obesity management as a barrier to providing treatment, aligning with findings from Chisholm et al. (2013), McGowan (2016), and Rogge and

Merrill (2013) that identified lack of formal education and training in obesity management as barriers to care. Social and economic factors as discussed by Gunther et al. (2012) were felt to be barriers to obesity treatment by APNs in the primary care setting. Feelings of hypocrisy were not mentioned as barriers to care in prior literature, likely because much of the prior research addressed physician practice over APN practice, thus avoiding the question entirely.

APN knowledge and practice in obesity management. There are a multitude of barriers to the provision of overweight and obesity care. In the 2008 study by Schuster et al. that sought to improve obesity management by primary care physicians, over half of the physicians were uncomfortable with addressing obesity and weight loss with patients prior to an educational intervention. Conversely, this project found that a vast majority of APNs offered obesity treatment even prior to the opportunity for further education on appropriate, CPG-driven management. Insurance coverage for obesity treatment was beyond the purview of this study. The cost of care is a significant barrier to not only providing treatment, but also to patient acceptance of treatment. This point is moot if the opportunity for treatment is not provided. Even though most APNs responded that they treat overweight and obesity, only about 10% have patients referred to them.

The literature review did not specifically address treatment referrals as a part of patient management, but this project found APNs demonstrated a willingness to refer patients to other specialties for obesity treatment. This study revealed that APNs primarily referred to dieticians or bariatric specialists—both medical and surgical. Endocrinologists and physical therapists also received about the same percentage of business from APNs. Exercise physiologists (EPs) received the fewest number of

referrals. This may be due in part to the availability of services. According to the U.S. Department of Labor (2015a, b), there were an estimated 14,500 EPs in the U.S. in 2014 with an anticipated growth of 1,500 jobs between 2014 and 2024. With roughly one-third of the US adult population qualifying as obese (CDC, 2015b; Ogden et al., 2014), there is a ratio of one EP per every 230,000 obese adults. Only 15% of APNs (n = 22) reported that they did not refer patients for treatment, however, this question identified a study limitation. The item was left so open-ended that no information could be inferred regarding whether the APN provided treatment without making any external referrals or simply did not address overweight and obesity.

APN awareness and utilization of CPGs. A strong majority of APNs (n = 127) indicated a willingness to treat obesity while a smaller majority (n = 78) believed that the use of CPG in managing disease would improve the likelihood of patients accepting treatment. The issue then becomes the accessibility of those CPGs. As the literature review demonstrated, the guidelines are daunting in both scope and length and are not practical for rapid access. There was a clear indication that APNs believe that they have the ability to make an impact in the obesity epidemic in this country, especially if armed with the proper tools. With 80% of APNs agreeing that a site that provided CPG support as being beneficial, the impetus existed for implementation and deployment of the website.

ObesityCPG.com. The website http://www.obesitycpg.com (See Appendix B) went live August 1, 2017. In its first two months live, without sponsorship or search-result promotion, it garnered a monthly average of 239 hits. It is hosted on a commercial server, but is not beholden to advertising. End-users may access the site without charge.

Basic patient anthropometric information is required as well as a general indication of physical activity. The data is used to calculate BMI, BMR, and recommended caloric intake based on physical activity level using the Harris-Benedict equation. The end-user also has the opportunity to select various co-morbidities. The user is subsequently provided with AACE-ACE guideline-based medication considerations based on the selected conditions.

Barriers to care. The literature demonstrated that providers tend to be a primary—if not *the* primary barrier to obesity care. This study's findings supported this concept. Some of the more common barriers to care were asked about specifically, but there were several respondents that elaborated in providing open-ended answers. These APNs specifically stated that they do not write prescriptions for medications for managing overweight and obesity. This is contrary to the CPGs developed by AACE-ACE that recommend medication use in appropriate patients (Garvey et al., 2016). Although supportive of bariatric surgical programs, one APN cited lack of insurance coverage for medications or visits as rationalization for "not agree[ing] with prescribing meds for weight loss." This individual went on to say that he or she felt like prescribing medications "set the patient up for failure long term." This line of thinking is quite concerning since the provider's belief is that if the patient is not going to be successful, then there is no reason to initiate therapy.

Where is the line drawn on what conditions APNs should decide are worth the risk of treatment failure? Granted, as this study re-confirmed, the percentage of patients that accept and maintain long-term treatment tends to be low at the outset and then gradually declines. However, this is not an acceptable excuse to avoid making an effort

to treat. This is on par with the 38% of APNs that treat obesity, but do not follow any CPG.

Evaluation of Theoretical Framework

King's Theory of Goal Attainment relies on the relationship between client and caregiver and the interactions that take place with the intent of achieving specific objectives. This project addressed obesity management from the caregivers' side of the transaction process model, examining current practice and practice barriers. The survey instrument forced participants to examine their practices and biases in managing overweight and obesity. It served to reduce, if not remove, the barrier of awareness and access to obesity CPGs by introducing four guidelines by name. It also examined the attitude about utilizing an online resource that provided guidance for clinical management of overweight and obesity according to accepted CPGs. This study was not designed nor intended to test the framework per se. Clinical management of a chronic illness requires a relationship between the APN and client. That relationship is manifested as a series of transactions in the form of office visits. If the APN is to manage obesity, planning for implementation of the nursing process on the APN side of the model must take place. This study set that foundation by leading the APN to a point of readiness to implement and manage obesity CPGs.

Evaluation of Logic Model

The logic model was developed with a longitudinal study in mind. This project was intended to meet the short-term outcomes evaluating APN attitudes, identifying barriers, and improving aspects of treatment. This project was successful in examining

current APN attitudes, beliefs, and practices in the management of overweight and obesity. Barriers to care were also identified. Four CPGs were generally introduced.

The original intention was to have a website designed and deployed for end users to evaluate and to begin to study its impact on care. It was quickly determined that trying to do so would be well beyond the scope of this project due to necessary time constraints. The lead investigator considered revising the logic model to reflect the revised scope of this project, but elected to leave it unchanged with a potential to revisit it at a later date as a part of a longitudinal study to evaluate the impact of the website.

Limitations

External factor limitations. There were several limitations on this study. The original intention was to design a website that would provide specific guidance regarding prescribing medications for managing overweight and obesity based on the AACE-ACE guidelines and user input of anthropometric data and existing co-morbidities. A pre- and post-intervention survey would have evaluated the impact on both practice and patients. The scope of the study was scaled back prior to obtaining IRB approval due to the time required to undertake a study to the extent originally intended. The first issue the lead investigator ran into was the complexity of the website design. After consulting with several web designers, one came up with a preliminary design for the computations as a web form. Several weeks passed with no contact and the designer finally responded and backed out of the project two weeks prior to the planned deadline. The complexity of the site then had to be reduced due to time and expense as no funding was received for the study.

Instrument limitations. In trying to address general practice, the study was hampered by the utilization of broad definitions. While 70% of APNs (*n* = 104) stated they offered treatment for overweight or obesity, there was no opportunity to define "treatment." While specific treatment modalities were beyond the purview of this study, the lack of definition of the word "treatment" may have impacted the results.

For the purposes of this study, "treatment" included providing counseling and specific advice regarding physical activity, dietary recommendations, and defined daily caloric goals in conjunction with appropriate chart documentation and billing practices. Medications and other interventions were also considered treatment; however, diet, activity, and counseling remain the foundations of any weight loss treatment plan (Apovian et al., 2015; Garvey, et al., 2016). The APN's personal definition of "treatment" may have influenced how questions were answered.

Utilization of the CPGs was another area that may have been skewed due to lack of a clear definition. There is no way of knowing if respondents answered with the understanding that interventions directed at specific lifestyle modifications fell within the scope of the CPGs. In hindsight, improved clarity by providing operant definitions of key terminology on the instrument may have revealed an increase in reported compliance with CPG.

Sample limitations. Initially, responses were sought from APNs in the Midwestern US. After the survey had been live for two weeks, and despite advertising on every known Midwestern APN social media page, fewer than ten responses were received. The survey was then opened to APNs nationwide, again via social media outlets and utilizing word-of-mouth to garner interest and responses.

Sample size proved to be another limitation. The size and response of the convenience sample was better than expected, but it was not large enough to be a true representation of all of the U.S. APNs. The results presumed the honesty of respondents with respect to the qualifying questions, but no verification was feasible. The qualifying question about collaborative practice agreements required revision for clarity after going live. The decision was made not to block repeat surveys from the same IP address to allow different individuals in the same location to be able to respond to the survey. Without tracking or blocking IP addresses, it was possible for individuals to repeat the survey multiple times.

Implications for Future Research

There are several directions to take future research. After further development of the website, a longitudinal study of the impact of easy access and guidance to CPG on care of overweight and obese patients may be undertaken. At the same time, a study examining the influence of the website on APN practice and management of overweight and obese patients can occur. Prior to undertaking these studies, clinicians need a better understanding of why patients accept, decline, or cease treatment, as well as finding ways in which we can encourage more patients to seek change and continue on the pathways for success. Considering those APNs that oppose pharmacologic interventions, a study may examine those motivations and determine if there is a way to bring practice into closer alignment with CPGs. The final avenue to examine is the impact of collaborative practice agreements and the limitations they impose on APNs, with a focus on obesity rates and rates of treatment.

Implications for Practice, Policy, and Education

This study was an initial step in addressing how APNs manage overweight and obesity in primary care. With a significant number of APNs reporting lack of education or training as a factor in their decision to treat obesity, faculty in schools of nursing need to examine how the advanced practice curriculum addresses obesity as a disease. Adding obesity as disease to be studied in advanced pathophysiology and primary care courses is necessary to lay the foundation for later treatment, not forgetting the psychosocial factors influencing the disease at all stages.

Policy change needs to be aimed toward improving coverage for disease management, including medical, pharmacologic, psychologic, and surgical aspects. Policy needs to include education that removes blaming and shaming behaviors by all members of the healthcare team. Policies should be designed that direct the clinician to refer or treat the patient based on the documented anthropometric values. These should be easy to integrate into the electronic health record as a best practice advisory to which quality metrics could be linked and tracked as a quality improvement project.

The ultimate goal is practice change and improvement in the way obese patients are cared for by APNs in the primary care setting. Understanding where APNs are and some of their motivations and perceived barriers allows the doctorally-prepared APN to work with them to provide education and easy access to resources that will allow them to consider new practice.

The call continues for a change to the archaic requirements and undue burdens created by collaborative practice agreements. Nearly a quarter of otherwise qualifying APNs were disqualified from this study due to limited or restricted practice laws still in

effect in over half of the U.S. This is despite an increasingly large body of evidence, including the 2010 Institutes of Medicine report that recommends full, unrestricted practice authority for APNs.

Conclusion

The attitudes and current practices of APNs in the diagnosis and management of overweight and obesity in the primary care setting were evaluated. The majority of APNs were willing to treat overweight and obesity, but most felt underprepared to do so. While there was awareness of CPGs, accessibility and consistent use were somewhat problematic. The vast majority of APNs agreed that access to an interactive website that provided CPG-based guidance would be beneficial. APNs felt that improved access to the guidelines would provide a positive impact on patient care and improve their confidence and, by extension, their likelihood to manage and treat overweight and obesity in primary care.

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APPENDIX

Appendix A: Links to Guidelines

AACE-ACE Guidelines Executive Summary:

https://www.aace.com/files/guidelines/ObesityExecutiveSummary.pdf

AHA/ACC/TOS Guideline:

http://circ.ahajournals.org/content/129/25_suppl_2/S102.long

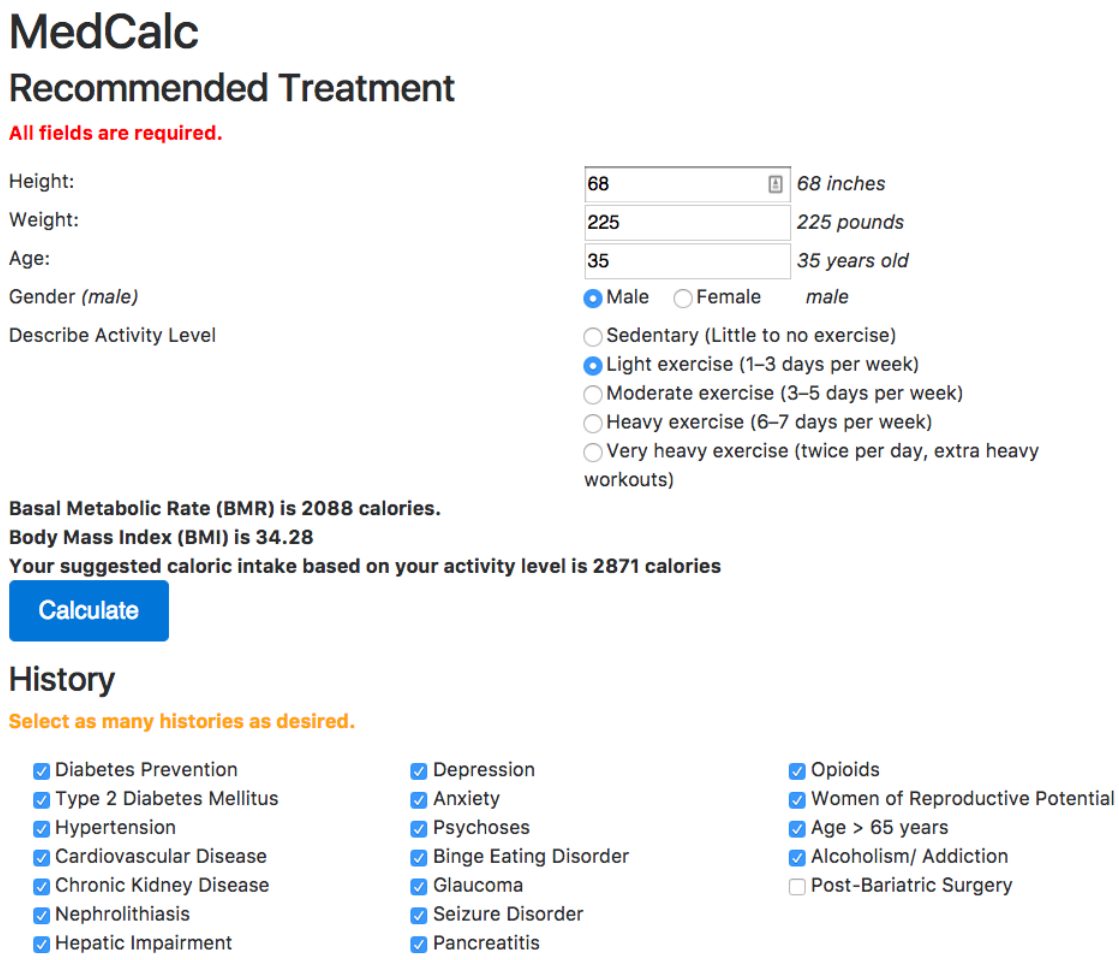
NICE Clinical Guideline: http://www.nice.org.uk/guidance/cg43

NIH Guideline 2000: http://www.nhlbi.nih.gov/files/docs/guidelines/prctgd_c.pdf

NIH Evidence Review 2013:

http://www.nhlbi.nih.gov/sites/www.nhlbi.nih.gov/files/obesity-evidence-review.pdf

Appendix B: Obesitycpg.com Website



PREFERRED WEIGHT-LOSS MEDICATIONS: INDIVIDUALIZATION OF THERAPY

KEY: PREFERRED DRUG | USE WITH CAUTION | AVOID

		Orlistat	Lorcaserin	Phentermine/topiramate ER	Naltrexone ER/ bupropion ER	Liraglutide 3 mg
Diabetes Prevention (metabolic syndrome, prediabetes)			Insufficient data for T2DM prevention		Insufficient data for T2DM prevention	
Type 2 Diabetes Mellitus						
Hypertension				Monitor heart rate	Monitor BP and heart rate Contraindicated in uncontrolled HTN	Monitor heart rate
Cardiovascular Disease	CAD			Monitor heart rate	Monitor heart rate, BP	Monitor heart rate
	Arrhythmia		Monitor for bradycardia	Monitor heart rate, rhythm	Monitor HR, rhythm, BP	Monitor HR, rhythm
	CHF	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data
Chronic Kidney Disease	Mild (50–79 mL/min)					
	Moderate (30–49 mL/min)			Do not exceed 7.5 mg/46 mg per day	Do not exceed 8 mg/90 mg bid	
	Severe (<30 mL/min)	Watch for oxalate nephropathy	Urinary clearance of drug metabolites	Urinary clearance of drug	Urinary clearance of drug	Avoid vomiting and volume depletion
Nephrolithiasis		Calcium oxalate stones		Calcium oxalate stones		
Hepatic Impairment	Mild-Moderate (Child-Pugh 5–9)	Watch for cholelithiasis	Hepatic metabolism of drug	Do not exceed 7.5 mg/46 mg per day	Do not exceed 8 mg/90 mg in AM	Watch for cholelithiasis
	Severe (Child-Pugh >9)	Not recommended	Not recommended	Not recommended	Not recommended	Not recommended
Depression			Insufficient safety data Avoid combinations of serotonergic drugs	Avoid maximum dose: 15 mg/92 mg per day	Insufficient safety data Avoid in adolescents and young adults	
Anxiety				Avoid max dose: 15 mg/92 mg per day		
Psychoses		Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data
Binge Eating Disorder			Insufficient data; however, possible benefit based on reduction in food cravings	Insufficient data; however, possible benefit based on studies with topiramate	Insufficient data, though possible benefit based on studies with bupropion Avoid in patients with purging or bulimia nervosa	Insufficient data
Glaucoma				Contraindicated, may trigger angle closure	May trigger angle closure	
Seizure Disorder				If discontinuing from max dose, taper slowly	Bupropion lowers seizure threshold	
Pancreatitis		Monitor for symptoms				Monitor for symptoms Avoid if prior or current disease

Opioid Use					Will antagonize opioids and opiates	
Women of Reproductive Potential	Pregnancy	Use contraception and discontinue orlistat should pregnancy occur	Use contraception and discontinue lorcaserin should pregnancy occur	Use contraception and discontinue phentermine/topiramate should pregnancy occur (perform monthly pregnancy checks to identify early pregnancy)	Use contraception and discontinue naltrexone ER/bupropion ER should pregnancy occur	Use contraception and discontinue liraglutide 3 mg should pregnancy occur
	Breast-feeding	Not recommended	Not recommended	Not recommended	Not recommended	Not recommended
Age ≥65 years *		Limited data available	Insufficient data	Limited data available	Insufficient data	Limited data available
Alcoholism/ Addiction			Might have abuse potential due to euphoria at high doses	Insufficient data, though topiramate might exert therapeutic benefits	Avoid due to seizure risk and lower seizure threshold on bupropion data	

Legal Disclaimer

The content of this website is provided only for medical education purposes. The author has made every effort to provide the most up to date clinical practice guideline information. The information contained herein may not reflect the current standard of care. Clinical judgement and the individualization of care supersedes any information contained herein. The content of this website is not intended to be a substitute for professional medical advice, diagnosis, or treatment. Decision-making should be undertaken between a licensed healthcare provider in conjunction with patient input and with consideration of all of the relevant facts of the case. Website users are advised to contact their licensed healthcare provider with any questions regarding their personal condition. Do not delay seeking care based on the content of this website. Reliance on the content of this website is done so at the end-user's own risk. If you believe you are having a medical emergency, contact your local EMS, healthcare provider, or present for emergency care.

Citation: Reprinted with permission from AACE. Garvey, W. T., Mechanick, J. I., Brett, E. M., Garber, A. J., Hurley, D. L., Jastreboff, A. M., . . . Reviewers of the AACE/ACE Obesity Clinical Practice Guidelines. (2016). American Association of Clinical Endocrinologists and American College of Endocrinology clinical practice guidelines for comprehensive medical care of patients with obesity. Endocrine Practice, 22(Suppl 3), 1-203. http://dx.doi.org/10.4158/EP161365.GL

Appendix C: Instrument

Obesity Views and Practices Survey

Qualifying questions

1. **Do you agree with the above terms?** (Followed informed consent. Respondent was required to answer "yes" to continue)
Yes
No

2. **Do you consent to your personal data being processed as described above?** (Followed informed consent. Respondent was required to answer "yes" to continue)
Yes
No

3. **Are you a nurse practitioner licensed to practice in at least one state?** (Respondent was required to answer "yes" to continue)
Yes
No

4. **In your current practice role, do you provide primary care to adults at least part-time? (**Respondent was required to answer "yes" to continue)

Yes
No

5. If you are in a collaborative practice agreement, are you permitted to manage overweight and obesity according to clinical practice guidelines (CPGs)? (Respondent was required to answer "yes" or "I am not in a collaborative practice agreement" to continue)
Yes
No, the collaborative practice agreement limits this.
I am not in a collaborative practice agreement.

6. Do you routinely manage adult patients between 18 and 65 years of age as a part of your normal practice? (Respondent was required to answer "yes" to continue)
Yes
No

7. In what part of the United States do you practice?
Northeast
Southeast
Midwest
Southern

Western

Please rate your agreement with the following statement using the following scale:

1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree

1. Participant view of obesity					
Obesity is a result of a character flaw.	1	2	3	4	5
Obesity is a disease.	1	2	3	4	5
Obesity is offensive.	1	2	3	4	5
Obesity is the patient's fault.	1	2	3	4	5
Obesity changes my perception of the patient in a negative way.	1	2	3	4	5

Please rate your agreement with the following statement using the following scale:

1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree

2. Participant view of obesity treatment					
Obesity treatment should be offered in primary care/family practice.	1	2	3	4	5
Obesity treatment is effective.	1	2	3	4	5
Obesity treatment should be offered to every patient when clinically appropriate.	1	2	3	4	5
Obesity treatment is counterproductive.	1	2	3	4	5
As a provider, I am comfortable discussing	1	2	3	4	5

weight management with patients.					

Please rate your agreement with the following statement using the following scale:

1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree

3. Participant current documentation of overweight or obesity and interventions/specific recommendations at annual wellness visit					
I document and/or code for an obesity-related diagnosis at every Well Visit.	1	2	3	4	5
I document and/or code for weight-loss counseling.	1	2	3	4	5
I document specific exercise recommendations.	1	2	3	4	5
I document and/or code for nutritional counseling.	1	2	3	4	5
I document weight loss medication options.	1	2	3	4	5
I document weight loss surgical options.	1	2	3	4	5

4. I offer treatment for overweight and obesity. (If no, skip to Q8)
Yes
No

5. Patients are referred to me for the management of overweight and obesity.
Yes
No

6. I use one of the following clinical practice guidelines for the management of obesity. (Select all that apply)
a. American Association of Clinical Endocrinologists/American College of Endocrinology (AACE-ACE)
b. National Institutes of Health (NIH)
c. American Heart Association/American College of Cardiology/Obesity Society (Obesity 2 guideline)
d. I do not follow any guideline in the management of overweight or obesity.
e. Other (please specify) _____

Please select the answer that best fits your estimate of patient percentages.

7. Frequency of patient acceptance of treatment				
Of the last 100 patients you offered treatment for overweight and obesity, approximately what percentage accepted the offer?	Less than 25%	25-49%	50-74%	75-100%
What percentage of patients were still being treated after three months?	Less than	25-49%	50-74%	75-100%

	25%			
What percentage of patients were still being treated after six months?	Less than 25%	25-49%	50-74%	75-100%
What percentage of patients were still being treated after nine months?	Less than 25%	25-49%	50-74%	75-100%
What percentage of patients were still being treated after twelve months?	Less than 25%	25-49%	50-74%	75-100%

8. I refer patients for medical management of overweight and obesity instead of treating myself. (Select all that apply)
a. I treat and refer.
b. Endocrinology
c. Dietician
d. Exercise physiologist
e. Bariatric specialist (non-surgical)
f. Bariatric surgeon/surgical center
g. Physical therapy
h. I do not refer patients for management of overweight or obesity.
i. Other (please specify) _____

Please rate your agreement with the following statement using the following scale:

1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, 5 = strongly agree

9. Reasons why the participant does not treat overweight and obesity.					
Obesity is a result of poor willpower.	1	2	3	4	5
Obesity is not a recognized disease.	1	2	3	4	5
Obesity treatment is not worthwhile.	1	2	3	4	5
Significant weight loss is necessary to improve health.	1	2	3	4	5
Patients do not appreciate having the option to treat obesity.	1	2	3	4	5
Clinically meaningful weight loss is not sustainable.	1	2	3	4	5
Insurance reimbursement for obesity care is nonexistent.	1	2	3	4	5
I am not comfortable treating overweight and obesity.	1	2	3	4	5
I feel like a hypocrite due to my own struggles with obesity.	1	2	3	4	5
I did not receive adequate education or training on the pathophysiology and management of overweight and obesity.	1	2	3	4	5
Other (please specify) _____					

10. Participant awareness and/or utilization of CPG
a. I am aware of the clinical practice guidelines for the management of obesity (Select all that apply)
i. American Association of Clinical Endocrinologists/American College of Endocrinology (AACE-ACE)
ii. National Institutes of Health (NIH)
iii. American Heart Association/American College of Cardiology/Obesity Society (Obesity 2 guideline)
iv. Other (please specify) _____
b. I know how to access the CPG for the management of overweight and obesity. Yes No
c. I do not follow CPGs when treating overweight and obesity. Agree Disagree

11. Factors influencing treatment					
I am willing to treat overweight and obesity.	1	2	3	4	5
Patients are more likely to accept treatment for overweight and obesity if practice guidelines are followed.	1	2	3	4	5

I would find a website that offers guideline-based suggestions for the medical management of obesity beneficial.	1	2	3	4	5
I would routinely use a website that provides guideline-based treatment suggestions for the management of overweight and obesity.	1	2	3	4	5
A website that provides guideline-based treatment suggestions for the treatment of overweight and obesity would not be beneficial for my practice	1	2	3	4	5
A website that provides guideline-based treatment suggestions for the treatment of overweight and obesity would help me feel more confident about managing overweight and obesity.	1	2	3	4	5

12. Demographic data
a. To what gender identity do you most closely identify?
i. Female
ii. Female transgender
iii. Male
iv. Male transgender

v. Non-binary, gender variant, or non-conforming
vi. Prefer not to answer
vii. Prefer to self-identify: _____
b. Years of experience
i. 0-3 years
ii. 3-6 years
iii. 6-10 years
iv. 10-15 years
v. Greater than 15 years
c. Type of practice
i. Rural- Hospital- or university-owned family/primary care practice
ii. Rural- Private individually- or group-owned family/primary care practice
iii. Rural- Specialty or multi-specialty practice providing primary care
iv. Urban- Hospital- or university-owned family/primary care practice
v. Urban- Private individually- or group-owned family/primary care practice
vi. Urban- Specialty or multi-specialty practice providing primary care

d. Level of education and licensure/board certification
i. MSN- Acute Care Nurse Practitioner Family Nurse Practitioner
ii. MSN- Adult Nurse Practitioner
iii. MSN- Family Nurse Practitioner
iv. MSN- Women's Health Nurse Practitioner
v. MA/MS- Physician's Assistant
vi. DNP- Acute Care Nurse Practitioner
vii. DNP- Adult Nurse Practitioner
viii. DNP- Family Nurse Practitioner
ix. DNP- Women's Health Nurse Practitioner
x. MD/DO- Family Practice
xi. MD/DO- Internal Medicine
xii. MD/DO- Other specialty

Appendix D: IRB Forms

Pittsburg State University
Application for Approval of Investigations
Involving the Use of Human Subjects

This application must be completed by the Investigator and sent to the Office of Graduate and Continuing Studies by the first Tuesday of the month during the fall and spring academic semesters to be considered for full review on the second Tuesday of the month.

Expedited and exempt reviews can be turned in any time. For questions about the review process contact Brian Peery in Russ Hall, #112, Ext. 4175.

1. Investigator(s) Name(s): Jeffrey M Waddell

2. Department: Nursing

3. Local Address: [redacted]

4. Phone: [redacted]

5. E-mail Address: [redacted]@gus.pittstate.edu

6. Project Title: Improving Obesity Management in Primary Care

7. Expected Completion Date: September 20, 2017

8. Expected Starting Date June 15, 2017

9. Is this project (check all that apply): Use review criteria in Form CR-1 to determine which category of review applies.

___ Application for Full Review ___ Protocol Change ___ Thesis/Special Investigation

___ Being submitted for external support ___Continued Review ~~XX~~ BP Application for Expedited Review

___ Being conducted in a foreign country ___ Faculty Research X BP Application for Exempt Review

___ Publishable research ___A Class Project

10. If notification of human subject approval is required give date required: _____

Name of agency: _____

11. If you are a student, complete the following:

Faculty Sponsor: Kristi Frisbee

Department: School of Nursing

Phone: 620-234-[redacted]

**** If submitted externally, a complete copy of the proposal must be submitted to the IRB.****

CERTIFICATION AND APPROVAL

Certification by Investigator: I certify that (a) the information presented in this application is accurate, (b)only the procedures approved by the IRB will be used in this project, (c)modifications to this project will be submitted for approval prior to use, and that all guidelines outlined in the PSU Policy and Assurance Handbook for the Protection of Human Research Subjects will be followed as well as all applicable federal, state and local laws regarding the protection of human subjects in research as outlined in Form VA-1.

M. Waddell Rose 4/21/2017

Signature of Investigator Date

Faculty Sponsor: If the Investigator is a student, his/her Faculty Sponsor must approve this application. I certify that this project is under my direct supervision and that I accept the responsibility for ensuring that all provisions of approval are met by the investigator.

Kristi L Trusler 4/25/2017

Signature of Faculty Sponsor Date

Department Review Committee Chair: I acknowledge that this research is in keeping with the standards set by our department, university, state and federal agencies and I assure that the student principal investigator has met all departmental requirements for review and approval of this research.

4/25/2017

Signature of Department Review Committee Chairperson Date

4/28/17 BP

CPHRS Chairperson Date

I. Description of the Subjects (If advertising for subjects, include a copy of the proposed advertisement.)

A. How many subjects will be involved? 100+

B. Subject Population (check all that apply) Adult licensed healthcare providers providing primary care

X Adults ___ Prisoners ___ Minors ___ Mentally Retarded

___ Mentally Ill ___ Physically Ill ___ Disabled ___ Special Education ___ Other

C. For projects conducted in schools or school settings:
(Written approval from the Building Administrator must be obtained)

What grade are the students in? _____

Approximate Age of Students _____

How many classes involved? _____

What subject: (secondary)? _____

Location: _____

Name of School: _____

D. What criteria will be used to select subjects AND/OR what criteria will be used to exclude individuals? (e.g., age, sex, race, ethnic origin, religion, or any social or economic qualifications)? State why the selection will be made on the basis or bases given.

Participants will self-identify. To be included, participants must possess a valid license as a nurse practitioner and be practicing at least part-time in a primary care setting managing adult patients. If in a collaborative practice agreement, the provider must be able to manage obesity per clinical practice guidelines without restrictions.

II. Abstract: Describe the purpose of the research and summarize the strategies used to collect data and protect participants.

This descriptive study will examine and explain current knowledge, attitudes, and practice of advance practice nurses in the management of obesity according to clinical practice guidelines in the primary care setting. This process will culminate in the development of a website that will assist in the application of the clinical practice guidelines for the management of obesity in the primary care setting.

III. Procedure: Activities Involving Human Subjects (Attach additional sheet if needed)

A. Give a brief description or outline of your research procedures as they relate to the use of human subjects.

1. Who will be the subjects? How will you enlist their participation?

The subjects are a convenience sample that voluntarily opt in for survey participation by clicking on a link on the website. All will be adults practicing in a primary care setting. They will qualify by answering a series of background questions confirming current licensure and general practice setting by self-report.

2. What precisely will be done to the subjects? State instructions given to the subjects, activities in which they will engage, tests and questionnaires (if you are using questionnaires or handouts, please include a copy with this application.)

The subjects will answer survey questions regarding their current practice and management of overweight and obesity. No personal health information will be obtained. Each subject will have to answer qualifying questions.

3. If any of the subjects are minors or "vulnerable" (children, prisoners, mentally or physically disabled, pregnant women), discuss how their special condition will be handled.

Not applicable

4. How will subjects be informed of research findings?

Subjects will have the option to opt-in for notification of the results by requesting them from the lead investigator. Data will be submitted for publication and be accessible via the journal.

IV. Confidentiality and Anonymity

How will the data be collected? (Check all that apply)

__X__ Questionnaires (Submit a copy)

____ Observations (describe how they will be conducted)

____ Interviews (Submit sample questions)

____ Standardized tests (attach a copy if possible; list names

____Test (Submit a copy if possible)

____Task(s) (briefly explain)

____Video or Audio Tapes

____ Computer Entries (explain)

____ Other in description of above:

A. Explain the procedures for collecting, recording and storing that data during the study.

Data collection and recording occur via SurveyMonkey.com on a secure-socket layer (SSL) website. All data will be held securely on their site.

B. Who will have access to the data during the study? (Access should be limited to protect anonymity of subjects and confidentiality of subject responses)

The lead investigator will have primary access to the data. The DNP Scholarly Project Advisor will have access to assist with applying statistical analysis.

C. Explain what will happen to the data once the study is completed. Is there a need to keep the data or will it be destroyed? If kept, how long and where will it be stored, how will confidentiality be ensured, who will have access to it?

The data will be held on the SurveyMonkey.com site and destroyed per their internal policies.

D. Explain the level of confidentiality you are guaranteeing the participants.

Data will be aggregated for analysis. A link to the SurveyMonkey.com privacy policy will be provided. A statement disclosing that any personal data collected may be transmitted to any country in which SurveyMonkey has offices will be included on the consent form.

V. Benefits, Risks, and Costs of this Study

A. What are the potential benefits to the subjects, to the field or discipline, or to the University?

The potential benefit is an improvement in overall health and well-being. Improving access to clinical practice guidelines and their application increases the potential for treating overweight and obesity in primary care. With the established link between overweight and obesity and other chronic health conditions, it follows that reducing the incidence of overweight and obesity will reduce the rates, morbidity, and possibly the mortality of related conditions.

B. Will compensation (money, extra credit, etc.) be offered to the subjects? If so, how will it be dispersed?

No compensation will be offered.

C. What risks or discomforts are most likely to be encountered by the subjects? Please consider carefully.

____ Employability	____ deception (benevolent misdirection)
____ financial or personal reputation	____ embarrassment
__X__ emotional stress or discomfort	__X__ psychological stress or discomfort
____ loss of confidentiality	____ criminal or civil liability
____ physical stress or discomfort	____ other (explain below)

D. What safeguards will you use to eliminate or minimize these risks? If there is the possibility of adverse reactions by the subjects, explain where the subjects can receive help.

The emotional and psychological stress, if any, will originate from personal reflection and realization of personal biases. The nature of the survey is such that complete avoidance of distress related to self-actualization is not possible.

E. In your opinion, does the research involve **more than minimal risk** to subjects? ("Minimal risk" means "the risks of harm anticipated in the proposed research are not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine or psychological examinations or tests.")

The risk expected is minimal, no more than an individual could expect during the course of normal daily living.

VI. Additional Information or Completion of a Previous Section:

Data collection and analysis is included to determine NP need for an interactive web-based algorithm of the clinical practice guidelines.

VII. Informed Consent: (Not needed for exempt review)

Unless authorized by the IRB, no investigator may involve a human being as a subject in research under the auspices of the University unless the investigator has obtained the informed consent of the subject or the subject's legally authorized representative.

Attach a copy of all consent documents that will be used to this application.

For further information about informed consent processes review the information on Continuing and Graduate Studies web page in the Forms for Research Involving Human subjects.

A. Explain the procedures that will be used to obtain consent:

Informed consent will be obtained via an introductory page on SurveyMonkey. The text from the attached informed consent will be utilized. The respondent will have to select "Yes" to both questions to provide consent. A "No" answer will end the survey. At the completion of the survey, the respondent will have the option to transmit or discard their responses.

B. Federal regulations state that the following elements of information should be provided to each subject. (Place a check mark before each component included in your consent document.)

__X__ An explanation of the purpose of the project and the expected duration of the subject's participation.

__X__ An explanation of the activities or procedures to be followed.

__X__ A description of any risks or discomforts to the subject.

__X__ A description of any benefits of the project to the subject or to others.

__X__ A statement that participation in this project is voluntary and the subject may withdraw at any time.

__X__ A statement describing the extent to which confidentiality of records identifying the subject will be maintained.

__X__ An explanation of whom to contact with questions regarding the study.

1. Explain request for waiver of any component listed above or other special conditions related to informed consent.

PITTSBURG STATE UNIVERSITY

COMMITTEE FOR THE PROTECTION OF HUMAN RESEARCH SUBJECTS (CPHRS)

Verification of Assurance Form

PRINCIPAL INVESTIGATOR ASSURANCE

I understand that as Principal Investigator, I have ultimate responsibility for the protection of the rights and welfare of human subjects and the ethical conduct of this research application.

I agree to comply with all PSU policies and procedures, as well as with all applicable federal, state, and local laws regarding the protection of human subjects in research, including, but not limited to, the following:

- Title 45, Part 46 of the Code of Federal Regulations
- The Belmont Report, *Ethical Principles and Guidelines for the Protection of Human Subjects and Research*
- The project will be performed by qualified personnel according to the research protocol
- Maintaining a copy of all questionnaires, survey instruments, interview questions, data collection instruments, and information sheets for human subjects in the respective department
- Necessary review by the PSU IRB (The Committee for the Protection of Human Research Subjects –CPHRS) will be sought if changes made in the research protocol may result in the research no longer meeting the original approved criteria.
- The Principal Investigator has completed the NIH Protection of Human Research Subjects On-Line Training Program.
- The Principal Investigator has read and understands the PSU Assurance Handbook concerning human subjects research protocols.

Pittsburg State University

Committee for the Protection of Human Research Subjects
(CPHRS)

PROJECT TITLE: IMPROVING OBESITY MANAGEMENT IN PRIMARY CARE

APPROVAL DATE OF PROJECT: 04/18/2017
EXPIRATION DATE OF PROJECT: 09/20/2017

PRINCIPAL INVESTIGATOR: Jeffrey Waddell, MSN, ARNP, FNP-C, DNP Student

CO-INVESTIGATOR(S): Kristi Frisbee, DNP, Trina Larery, DNP, Michael J. Carper, Ph.D.

CONTACT NAME AND PHONE FOR ANY PROBLEMS/QUESTIONS: Jeffrey Waddell, 913-206-6242, jmwaddel@gus.pittstate.edu

IRB CHAIR CONTACT/PHONE INFORMATION: Pittsburg State University - Irene Ransom Bradley School of Nursing Chair for Review Committee:

Gena Coomes, Member, Committee for the Protection of Human Research Subjects 112 McPherson Hall, Pittsburg State University, Pittsburg, KS 66762, (620) 235-4440

Secondary information is:

Peggy Snyder, Chair, Committee for the Protection of Human Research Subjects, 112 Russ Hall, Pittsburg State University, Pittsburg, KS 66762-7526, (620) 235-4179.

SPONSOR OF PROJECT: Not Applicable

PURPOSE OF THE RESEARCH: This research study involves the evaluation of nurse practitioner attitudes regarding overweight and obesity and treatment thereof, current practice for the management overweight and obesity, and the potential impact of web-based education and guidance on the application of the American Association of Clinical Endocrinologists/American College of Endocrinology obesity clinical practice guidelines.

The cross-sectional data will serve as the potential basis for a longitudinal study about obesity management in primary care. The survey will be hosted by SurveMonkey.com. Participants will self-report information. No patient charts will be accessed and no personal health information will be accessed. This study deals with provider attitude, perception, and intention to treat. Patient outcomes are not being examined.

PROCEDURES OR METHODS TO BE USED: The subjects will answer survey questions regarding management and knowledge about treating overweight and obesity. No personal health information will be obtained. Each subject will have answer qualifying questions. No compensation will be provided.

ALTERNATIVE PROCEDURES OR TREATMENTS, IF ANY, THAT MIGHT BE ADVANTAGEOUS TO SUBJECT: NOT APPLICABLE

LENGTH OF STUDY: One 30-minute session

RISKS OR DISCOMFORTS ANTICIPATED: No significant risks or discomfort beyond what one might experience during a normal day are anticipated. The participant may experience emotional stress or discomfort and/or psychological stress or discomfort resulting from personal reflections and recognition of personal biases.

BENEFITS ANTICIPATED: The potential benefit is an improvement in overall health and well-being of patients. Improving access to clinical practice guidelines and their application increases the potential for treating overweight and obesity in primary care. With the established link between overweight and obesity and other chronic health conditions, it follows that reducing the incidence of overweight and obesity will reduce the rates, morbidity, and possibly the mortality of related conditions.

EXTENT OF CONFIDENTIALITY: No personally identifiable demographic data will be collected for the survey. Data collection and recording will occur via SurveyMonkey.com on a secure-socket layer (SSL) website. All data will be held securely on their site. The lead investigator will have primary access to the data. The faculty sponsor will have access to assist with applying statistical analysis. The data will be held securely on the SurveyMonkey.com site and managed per their Security Statement and Privacy Policy. Data will be aggregated for analysis.

Any personal data collected may be transmitted to any country in which SurveyMonkey has offices. As of the date of the creation of this Informed Consent, offices are in the United States, Canada, Ireland, and Australia.

The SurveyMonkey com Privacy Policy may be viewed here:
http://www.surveymonkey.com/mp/policy/privacy-policy/

The SurveyMonkey.com Security Statement may be viewed here:
http://www.surveymonkey.com/mp/policy/security/

IS COMPENSATION OR MEDICAL TREATMENT AVAILABLE IF INJURY OCCURS: While no more than minimal risk is involved, in the event of injury, the Kansas Tort Claims Act provides for compensation if it can be demonstrated that the injury was caused by the negligent or wrongful act or omission of a state employee acting within the scope of his/her employment.

PARENTAL APPROVAL FOR MINORS: Not Applicable

TERMS OF PARTICIPATION:

I understand this project is research, and that my participation is completely voluntary. I also understand that if I decide to participate in this study, I may withdraw my consent at any time, and stop participating at any time without explanation, penalty, or loss of benefits or academic standing to which I may otherwise be entitled.

I verify that my typed name below indicates that I have read and understand this consent form, and willingly agree to participate in this study under the terms described, and that my name below acknowledges that I have received a signed and dated copy of this consent form.

Participant Name: _____ Date: _____

Participant Signature:_____ Date: _____

Witness to Signature: (Project Staff)_____ Date: _____