An Educational Intervention to Raise Obesity Awareness, the Importance of Follow-Up, and the Need to Utilize Recommended Strategies and Interventions Among Advanced Care Practitioners in a Sleep Center Setting

A Scholarly Project

Submitted to the

Faculty of Liberty University

In partial fulfillment of

The requirements for the degree

Of Doctor of Nursing Practice

By

Cindy L. Thomas, RN, BSN

Liberty University

August, 2019

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Scholarly Project Chair Approval:

Dr. Dana S. Woody, DNP, RN, Associate Professor of Nursing, August 12, 2019

ABSTRACT

Obesity is a national epidemic that affects approximately 40% of adult Americans. A lack of advanced practitioner (AP) knowledge about obesity and follow-up may contribute to the obesity epidemic. Diagnosing obesity and beginning prompt weight loss (WL) management with the aim to prevent the development or progression of chronic illnesses associated with obesity is imperative. Research has shown that WL of 5% to 10% of initial body weight can reverse or reduce the onset of chronic illnesses. The purpose of this evidence-based practice (EBP) scholarly project was to raise the awareness of weight management resources among APs caring for patients with a BMI of 30 or greater in a sleep center. The project leader performed a pre- and post-intervention chart audit to measure the APs' knowledge about obesity, need for follow-up, and use of interventions and strategies to support WL. The 5 A's Model was used to educate the APs while discussing effective communication to introduce preferred terms when addressing obesity. A written referral was developed for the APs to refer obese patients to follow-up with their primary care provider (PCP) for a WL plan. The results of this EBP project showed an improvement of 37% from pre-intervention to post intervention use of WL referrals indicating statistical significance. The post-survey revealed the educational intervention addressing obesity was useful and within the last month the APs integrated the 5 A's Model and the written referral into practice and plan to use these strategies for at least a year. APs play a pivotal role in the obesity epidemic. As evidenced by this project, APs must utilize strategies and recommendations about WL. Their efforts will support the prevention and reversal of chronic disease related to excess weight; and ultimately impact the financial and psychosocial burdens associated with the obesity epidemic.

Keywords: obese, 5 A's Model, follow-up, weight loss, preferred terms, referral

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List of Abbreviations

Advanced practitioners (APs)

Apnea-hypopnea index (AHI)

Body mass index (BMI)

Cardiovascular disease (CVD)

Centers for Disease Control and Prevention (CDC)

Collaborative Institutional Training Initiative (CITI)

Confidence Interval (CI)

Continuous positive airway pressure (CPAP)

Evidence-based practice (EBP)

Hospital Corporation of America (HCA)

Hypertension (HTN)

Institutional review board (IRB)

Level of evidence (LOE)

Liberty University (LU)

National Institute for Health (NICE)

Obstructive sleep apnea (OSA)

Primary care provider (PCP)

Randomized controlled trial (RCT)

Risk factor (RF)

Statistical Package for the Social Sciences (SPSS)

Type 2 diabetes mellitus (T2DM)

United States (US)

Weight loss (WL)

World Health Organization (WHO)

SECTION ONE: INTRODUCTION

Obesity is a significant issue facing the United States (U.S.) and the world today and is considered an epidemic. Obesity is a chronic and complex disease defined as a body mass index (BMI) of 30 or greater (Kyle, Dhurandhar, & Allison, 2016). The Centers for Disease Control and Prevention (CDC, 2017a) estimated that obesity affects 39.8% of the U.S. population equating to 93.3 million Americans. Obesity is considered the most significant threat to public health of this century (Kyle et al., 2016). Obesity poses physical, psychosocial, and financial burdens to individuals and society (CDC, 2018). Obesity accrued an estimated $147 billion worth of medical expenses in 2008 (CDC, 2018). Also noteworthy, an obese individual's medical expenses are $1429 higher each year when compared to a person with a normal weight (CDC, 2018). Risk factors (RFs) for obesity include poor lifestyle choices related to nutrition and inactivity, which predispose an individual to cerebrovascular disease, stroke, obstructive sleep apnea (OSA), type 2 diabetes mellitus (T2DM), cancers, and premature death (CDC, 2018).

Even though primary care providers (PCPs) are in a prime position to diagnose and manage obesity, many advanced practitioners (APs) have not received adequate training on weight loss (WL) management (Colbert & Sushrat, 2013). Research shows significant knowledge deficits among APs about obesity and the need for follow-up, which may be a contributor to the obesity epidemic (Aveyard, Lewis, Tearne, & Hood, 2016; Fitzpatrick et al., 2016; National Institute for Health (NICE), 2014; Post et al., 2011; Rose, Poynter, Anderson, Noar, & Conigliaro, 2013; Ward, Gray, & Paranjape, 2009). Research has shown that brief AP advice to the obese patient is adequate to promote significant WL (Aveyard et al., 2016; Fernández-Ruiz et al, 2018).

Obesity is the most important RF for developing OSA (Mitchell et al., 2014; Ng et al., 2015; Tuomilehto et al., 2009). In fact, the prevalence of OSA is projected to increase due to the escalating rates of obesity; an estimated 58% of patients with OSA are obese (Araghi et al., 2013; Carneiro-Barrera, Diaz-Roman, Guillen-Riquelme, & Buela-Casal, 2019; Qaseem et al., 2013). A 10% reduction of body weight in obese individuals will reduce or reverse the severity of OSA and comorbidities associated with OSA and obesity (Araghi et al., 2013; Garvey et al., 2016; Ng et al., 2015; Rotenberg, Murariu, & Pang, 2016). APs must also measure and document BMI at least yearly to establish an obesity diagnosis, promoting prompt WL management; WL reduces an obese individual's predisposition to chronic illnesses and OSA severity (McLaughlin, Hamilton, & Kipping, 2017; NICE, 2014).

Due to the obesity epidemic, an urgent need exists to educate and raise awareness among APs and enable them to utilize recommended strategies and interventions that support WL among obese OSA patients (Kyle et al., 2016). APs are in a prime position to diagnose and counsel obese patients on WL, but many have not received adequate training about WL management (Colbert & Sushrat, 2013). The scholarly project is an evidence-based practice (EBP) project that aims to increase AP awareness about the significance of obesity and need for follow-up to support WL in sleep center clients.

Background

Obesity defined. Obesity is a complex and chronic disease defined as excessive fat accumulation that may compromise health by predisposing an individual to many preventable chronic diseases (CDC, 2017a; Kyle et al., 2016). BMI is commonly used for screening and classifies obesity as an index of 30 or greater (CDC, 2017a). BMI is commonly calculated by dividing an individual's weight in kilograms (kg) by the square of their height in meters (CDC,

2017a). BMI is a reliable, non-invasive, and inexpensive way to measure body fat indirectly, screen for weight category, and track interventions that manipulate body fat (CDC, 2017a). BMI subdivides obesity into the following three categories: Class 1 as a BMI between 30 to 34.9; Class 2 obesity as a BMI between 35 to 39.9; and Class 3 obesity as a BMI of 40 or greater (CDC, 2017a).

Obesity epidemic. Americans have adopted unhealthy lifestyles that are responsible for the obesity epidemic. Obesity results from unhealthy diets and sedentary habits that lead to modifiable RFs and chronic illnesses and is even considered the most significant threat to public health of this century (Bauer, Briss, Goodman, & Bowman, 2014; Kyle et al., 2016). The CDC (2018) stated that from 2015-2016 obesity affected 39.8% of the American population equating to 93.3 million individuals. Over the last several decades, obesity trends have increased: from 1976 to 1980, 15% of American adults were considered obese; from 1999 to 2000, 30.5% of adults were obese; and in 2009 to 2010, 35.7% of adults were obese (Freedman, 2011; Robert Wood Johnson Foundation, 2018). Worldwide, the prevalence of obesity has tripled since 1975 and in 2016, 13% of the adult population were obese, which equates to 650 million people (World Health Organization [WHO], 2018). Furthermore, the obesity epidemic poses physical, financial, and psychosocial strains to the individual and community (CDC, 2018).

Obesity Risk Factors. The most common RFs associated with obesity include unhealthy diets and inactivity (Bauer et al., 2014). Unhealthy lifestyles cause an energy imbalance between the calories consumed and calories burned that lead to modifiable RFs and chronic illnesses (WHO, 2018). Health consequences of poor lifestyle choices include: cardiovascular disease (CVD), stroke, T2DM, certain types of cancers, and premature death (CDC, 2018; WHO, 2018). In particular, diets high in carbohydrates and saturated fat contribute to adiposity, which leads to

the harmful effects of obesity and chronic inflammation (Paniagua, 2016). The pathophysiological progression occurs from cytokine secretion from adipocytes causing chronic inflammation in the blood vessels, which leads to atherosclerosis, hypertension (HTN), and dyslipidemia (Paniagua, 2016). Elevated post-prandial insulinemia from inflammation progresses to insulin resistance and T2DM (Paniagua, 2016). Moreover, chronic states of inflammation preclude individuals to fatty liver, as well as colon, esophageal, and liver cancer (Paniagua, 2016). In addition, genetic, metabolic, environmental, and behavioral factors contribute to obesity (Kyle et al., 2016).

Cost of obesity. In addition to health consequences, obesity poses many financial burdens. Obesity is linked to the most costly and prevalent chronic illnesses in our country: T2DM, HTN, coronary artery disease, and various cancers. The Robert Wood Johnson Foundation (2019) estimated that $147 billion to $210 billion is spent annually on obesity related problems. On average, the obese patient's medical expenditures are $1429 higher each year when compared to a person with a normal weight (CDC, 2018). Moreover, an obese patient's emergency room visit costs 41% higher when compared to a patient with a normal weight (Robert Wood Johnson, 2019). A person's BMI correlates with increasing sick days, medical claims, and healthcare costs (Robert Wood Johnson, 2019). For example, those with a BMI greater than 40 have an increase of 81% in healthcare costs when compared to a patient with a normal weight (Robert Wood Johnson, 2019).

Obesity also affects employment. The Robert Wood Johnson Foundation (2019) estimated that each year $4.3 billion results from absenteeism and lower work performance in those with obesity. On average, employers pay at least $506 per obese employee yearly when compared to an employee with a normal BMI (Robert Wood Johnson, 2019). Reducing obesity

can lower financial burdens by reducing AP visits, tests, prescription drugs, sick days, hospital admissions, and the onset or progression of comorbidities (Robert Wood Johnson, 2019).

Clinician awareness. Obesity is a national epidemic and is usually a preventable disease that causes many comorbidities, presenting an urgent need for APs to address and manage obesity (Bauer et al., 2014; WHO, 2018). APs are in a prime position to diagnose and counsel obese patients on WL (Colbert & Sushrat, 2013). Note that many APs have a poor understanding of obesity related issues and the significance of WL resource follow-up, because most providers have not received adequate training on WL management (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009). Most APs focus on disease processes that are readily treated with pharmacological therapies such as HTN and T2DM (Colbert & Sushrat, 2013). Research shows significant knowledge deficits among APs about obesity and the need for follow-up (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009). Approximately 42% of obese or overweight patients receive WL education from their healthcare provider (McLaughlin et al., 2017).

Due to the lack of education about obesity, many APs view obesity as a lifestyle choice that is addressed by the patient, rather than a chronic disease that must be managed by primary care (McGowan, 2016). In addition, many obese patients view obesity as a customary way of life and presume that excess weight does not impact their health if a provider does not address obesity (McGowan, 2016). Diagnosing obesity in a timely manner is essential to begin prompt WL management with the aim to prevent the development or progression of comorbidities associated with obesity (Qaseem et al., 2013; Tuomilehto et al., 2009). Many patients welcome WL advice from their PCP and are more likely to attempt WL with PCP suggestions (Hudgel et

al., 2018; McLaughlin et al., 2017; Plourde & Prud'homme, 2012; Rose et al., 2016). Raising awareness about obesity among APs is essential.

Implications for practice. Obesity is a national epidemic and the most important RF for developing OSA (Mitchell et al., 2014; Ng et al., 2015; Tuomilehto et al., 2009). The prevalence of OSA is projected to increase due to the escalating rates of obesity and is estimated that 58% of patients with OSA have obesity (Araghi et al., 2013; Carneiro-Barrera et al., 2019; Qaseem et al., 2013). Many APs have not received adequate training on weight loss (WL) management, which is postulated to have contributed to the obesity epidemic (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009).

Obesity contributes to OSA since excess weight is deposited around the upper airways and thorax causing the respiratory lumens to become smaller and more likely to collapse, while reducing chest compliance (Zammit, Liddicoat, Moonsie, & Makker, 2010). Fat accumulation around the airway and respiratory structures contributes to apnea, increased cardiac workload, desaturation, carbon dioxide accumulation, and the onset of chronic illnesses (Zammit et al., 2010). The more obese the patient becomes the more severe the OSA (Araghi et al., 2013; Garg et al., 2012; Hudgel, 2018; Qaseem et al., 2013). Even a reduction of at least 10% in body weight of an obese person has been estimated to reduce or reverse the severity of OSA (Araghi et al., 2013; Garvey et al., 2016; Ng et al., 2015; Rotenberg et al., 2016).

To highlight the clinical significance of the project, APs in the project setting see over 600 patients annually. This project has clinical significance, as it will support health outcomes of the client. This project also has financial significance, with the possibility of increased savings. For example, the 40-year-old obese patient who loses weight to a normal BMI category results in third party payer cost savings of $15,024, productivity savings of $16,400, and society

cost savings of $31,447 per individual during their lifetime (Fallah-Fini, Atif, Lawrence, Bartsch, & Lee, 2017). The clinical significance of this project gives great credence for further study and exploration of obesity as it relates to OSA, financial savings, and the need for APs to be aware of WL resources in sleep center settings.

Obstructive sleep apnea. OSA is characterized by frequent periods of hypopnea and apnea events during the sleep cycle that is caused by partial or complete collapse of the upper airways (Zammit et al., 2010). Obesity is the most important RF for developing OSA because excess weight accumulates around the upper airways and thorax causing the respiratory lumens to become smaller and collapsible, while reducing chest compliance (Mitchell et al., 2014; Ng et al., 2015; Tuomilehto et al., 2009; Zammit et al., 2010). Fat deposits around the airway and respiratory structures cause apnea, increased cardiac workload, desaturation, carbon dioxide accumulation, and the onset of chronic illnesses (Zammit et al., 2010). The more obese the patient becomes the more severe the OSA (Araghi et al., 2013; Garg et al., 2012; Hudgel, 2018; Qaseem et al., 2013).

***History of OSA*.** OSA was discovered in 1965 and was commonly treated by performing a tracheostomy to eliminate upper airway obstructions (Bahammam, 2011). In 1981, continuous positive airway pressure (CPAP) therapy using a nasal mask was invented for a less invasive and effective treatment option to manage OSA (Bahammam, 2011). Though CPAP therapy is recognized as the gold standard to treat OSA, only 30-60% of individuals with OSA are initially compliant (Qaseem et al., 2013; Rotenberg et al., 2016). A steady decline of adherence over a 10-month period is common (Rotenberg et al., 2016). Moreover, poor compliance increases the likelihood of OSA severity and onset of complications from comorbidities independently related to OSA (Qaseem et al., 2013; Rotenberg et al., 2016). In 2000, research demonstrated the link

between OSA and HTN and studies in 2001 revealed the connection of OSA to CVD and stroke (Hansford, 2011).

OSA prevalence. OSA is the most common sleep disorder, affecting one out of five adults mostly in middle-age and in the elderly (Qaseem et al., 2013; Tuomilehto et al., 2009). Approximately 20 to 30% of American males and 10-15% of females are affected with OSA and the rates are progressively increasing due to the growing incidence of obesity (Araghi et al., 2013; Qaseem et al., 2013). Obesity is strongly linked to OSA and is estimated that 58% of patients with OSA have obesity (Araghi et al., 2013; Carneiro-Barrera et al., 2019; Qaseem et al., 2013).

Diagnosis of OSA. OSA is diagnosed with a sleep study, which can be performed in a sleep center or in the home setting (National Sleep Foundation, 2019). During a sleep study, the polysomnographic technologist monitors various biological functions by placing electrodes on the patient's head, chest, and legs (Sleep Foundation, 2019). OSA is categorized by severity based on the number of apnea-hypopnea index (AHI) events (Harvard Medical School, 2011). For example, an AHI level of less than five events per hour is considered normal, five to 14 AHI events per hour are considered mild, 15 to less than 29 AHI events per hour demonstrate a moderate level of OSA, and 30 or more AHI events per hour signifies severe OSA (Division of Sleep, 2011). Obesity is a significant contributor to OSA and is steadily rising (Araghi et al., 2013; Qaseem et al., 2013).

Sleep centers. The polysomnographic technologist at a sleep center performs a sleep study called a polysomnogram to determine if a patient has a sleep disorder (National Sleep Foundation, 2019). A sleep disorder may include OSA, insomnia, restless legs syndrome, and other parasomnias (Mission Health [MH], 2019). Sleep centers are located in hospitals,

independent facilities, or clinics (National Sleep Foundation, 2019). A patient is referred to a sleep center if they exhibit daytime sleepiness, difficulty staying asleep, snoring, or excess fatigue (National Sleep Foundation, 2019). A polysomnogram assesses blood oxygen levels, brain waves, breathing rates and patterns, body positions, eye movements, heart rates and rhythms, leg movements, sleep stages, and snoring patterns (National Sleep Foundation, 2019). A sleep center employs polysomnographic technologists who perform the sleep study, pulmonologists who evaluate the polysomnogram, and APs who educate patients about OSA, treatment, and the need for compliance with the regimen (National Sleep Foundation, 2019). APs also provide follow-up to ensure patients diagnosed with OSA receive the treatment modalities to manage OSA.

Comorbidities associated with OSA. OSA is the most common sleep disorder and is independently associated with CVD, T2DM, stroke, HTN, metabolic syndrome, daytime sleepiness, and death (Qaseem et al., 2013; Tuomilehto et al., 2009; Zammit et al., 2010). Some common characteristics among patients with OSA are: sleeping less than seven hours in a 24-hour period causing blood pressure increases; intrathoracic pressure changes; sympathetic hyperactivity; and impaired glucose tolerance that increases the risk for developing chronic health conditions (CDC, 2017b; Hansford, 2011). As OSA severity increases, the prevalence of comorbidities rises as well (Samson, Casey, Knepler, & Panos, 2012). Prompt WL interventions to reduce or reverse the severity of OSA is imperative for the obese patient (Araghi et al., 2013; Carneiro-Barrera et al., 2019; Hudgel, 2018; Kuna et al., 2013; McLaughlin et al., 2017; Mitchell et al., 2014; Ng et al., 2015; Tuomilehto et al., 2009).

Challenges and opportunities. A challenge in addressing obesity is that APs in sleep center settings are often not trained adequately about diagnosing and managing obesity. In fact,

significant knowledge deficits exist among APs about obesity and the need for follow-up, which may contribute to the obesity epidemic (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009). Another challenge in addressing obesity is that many APs are not aware of the preferred terminology when discussing obesity with patients. Preventing bias, stigma, and prejudice when addressing obesity issues is important for APs (Hudgel et al., 2018; Swift, Choi, Puhl, & Glazebrook, 2012; Ward et al., 2009). For example, preferred terms for obesity include unhealthy, weight problem, and unhealthy weight (Hudgel et al., 2018; Swift et al., 2012; Ward et al., 2009).

This scholarly project reveals through a review of literature that raising awareness for APs about obesity and the need to offer WL management resources to obese clients with OSA in a sleep center setting demonstrates health and financial benefits. Opportunity also exists to support the education delivery to APs via the 5 A's Model. The 5 A's Model is an evidence-based approach to educate APs about obesity and WL (Plourde & Prud'homme, 2012; Thille, 2018).

5 A's model. The 5 A's Model is a teaching sequence entailing five major steps to behavioral change and all five aspects should be used for maximal effectiveness (Plourde & Prud'homme, 2012; Thille, 2018). Asselin et al. (2017) stated that the 5 A's Model is effective to educate healthcare providers (HCPs) about WL and obesity. The 5 A's stand for *assess, advise, agree, assist,* and *arrange* (Asselin et al., 2017). *Assess* entails the HCP determining the level of obesity by measuring and documenting the BMI (Plourde & Prud'homme, 2012). *Advise* allows the HCP to provide information on obesity and its associated health risks and benefits of WL (Plourde & Prud'homme, 2012). *Agree* permits the patient and HCP to agree that WL of 5-10% of initial body weight can have benefits to health (Plourde & Prud'homme, 2012).

Assist allows the HCP to provide the patient with community resources to promote health and WL (Plourde & Prud'homme, 2012). Lastly, *arrange* provides a written referral for the patient to follow-up with their PCP for a WL plan (Plourde & Prud'homme, 2012).

Problem Statement

Decreased awareness exists among APs regarding the challenges encountered by obese patients, as well as poor utilization of resources to ensure appropriate follow-up when working with obese patients. Obesity is currently an epidemic and is regarded as the most significant threat to society (Kyle et al., 2016). However, APs are often unaware of the resources to support their patients, resulting in poor outcomes that include the onset or progression of comorbidities and financial burdens associated with obesity (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009). This issue must be addressed by APs, as obesity has significant ramifications for the patient, society, and the healthcare system.

Purpose of the Project

The purpose of this EBP scholarly project was to raise the awareness of weight management resources among APs caring for patients in the sleep center with a BMI of 30 or greater. In addition, the APs received education they can utilize in their practice in support of the utilization of resources. Raised awareness and education among the APs will improve overall communication with sleep study participants and increase quality of care.

Clinical Question

The scholarly project focused on the following clinical question. Does raising the awareness of APs in a sleep center, via the 5 A's Model, about obesity and WL resources increase the number of referrals of obese patients with a BMI of 30 or more to a WL resource?

Population. The target population for this study was obese patients with a BMI of 30 or more within the sleep center.

Intervention. The intervention was a face-to-face educational opportunity with the sleep center's APs using the 5 A's Model.

Comparison. A pre- and post-chart audit was used to determine the number of referrals made to WL resources. In addition, the pre- and post-chart audits were compared to evaluate the awareness of obesity and strategies and interventions to support sleep center APs. A post survey was used to evaluate the AP's usage of strategies and interventions.

Outcomes. The anticipated outcomes for this project were (a) to increase the APs' awareness of obesity, obesity measurement and documentation, and the importance of follow-up; (b) to provide the APs with strategies on how to approach the obese patient when referring them for WL follow-up; and (c) to evaluate the AP's use of strategies and interventions, one month after the intervention.

SECTION TWO: LITERATURE REVIEW AND SYNTHESIS

To align with the Iowa Model of Evidence-Based Practice, this project leader conducted an extensive review of the literature to evaluate the need for this project (see literature review matrix in Appendix A). This leader used two search strategies to identify articles, a computer assisted search and an analysis of reference lists. Moreover, this leader also used the Iowa Model of EBP to guide the evidence-based project progression (see Appendices B and C) (Iowa Model, 2017; Research Gate, 2019).

Search Strategy

The project leader conducted a computer-based search of the databases and used an analysis of reference lists to complete the literature review for this evidence-based practice

project. The databases consisted of CINAHL Plus with Full Text, MEDLINE with Full Text, ProQuest, and EBSCOhost databases. The key words and phrases used in the search included: *nursing staff, nurses, doctors, physicians, healthcare providers, nursing staff, healthcare professional, primary care provider, clinicians, nurse practitioners, advanced nurse practitioner, obese, obesity, high BMI, high body mass index, overweight, unhealthy weight, education, obesity guidelines, obstructive sleep apnea, obstructive sleep apnea guidelines, 5 A's Model, knowledge, awareness, knowledge awareness, information, education, intervention, strategies, best practice, learning intervention, weight reduction, follow-up, and weight loss.*

The search of the various key words yielded a total of 111 articles. The project leader narrowed the search by evaluating the title and abstract for relevance to the project, which provided 46 articles. This leader progressively tapered the literature by applying inclusion criteria consisting of availability of articles with full text, articles written in the English language, peer-reviewed articles, and articles written within the last 10 years. The leader further narrowed the literature by considering population, intervention, outcomes, and study design, which yielded 25 articles. The literature review yielded the following: five guidelines, five systematic reviews of randomized control trials, six randomized controlled trials (RCTs), two systematic reviews of descriptive studies, four systematic reviews of qualitative studies, and three qualitative reviews. The 25 articles were categorized into the following date ranges: two in 2009, one in 2011, three in 2012, four in 2013, three in 2014, one in 2015, three in 2016, three in 2017, four in 2018 and one in 2019.

Selection criteria. The project leader utilized several criteria for conducting the search for related literature. First, this leader searched for articles specific to population and types of interventions. The leader also searched for articles categorized by outcomes and study design.

Population. The primary population for this project was APs in a sleep center who discharge patients. The secondary population was obese patients defined by a BMI of 30 or more (Centers for Disease Control and Prevention [CDC], 2018). The project leader included in the literature review articles on the topics of obese, obesity, overweight, and unhealthy weight. The project leader used articles specific to OSA, using key words of OSA and OSA guidelines to capture this population.

Intervention. The project leader developed an educational intervention for the APs. The aim of this project was to raise awareness of obesity and the importance of follow-up among APs in a sleep center by providing an educational intervention. The educational intervention included how to address patients with an obesity diagnosis and follow-up using the 5 A's Model. The project leader therefore included articles with information on educational interventions, 5 A's Model, and how to address obesity were included in the search.

Outcomes. There were several desired outcomes for this project. The outcomes included: increased awareness of obesity, obesity measurement and documentation, and the importance of follow-up; provided the APs with strategies on how to approach the obese patient when referring them for WL follow-up; and evaluated the AP's use of strategies and interventions, one month after the intervention. Articles related to each outcome were included in the review.

***Study design*.** The project leader did not limited articles based on the type of study design. Various study designs were included that were pertinent to the topic and would add relevance and strength to the project.

Critical Appraisal

The project leader used a total of 25 articles for the literature review. The research was reviewed and appraised by the project leader for quality using Melnyk's Level of Evidence

(LOE) (see Appendix D). The LOE scale aids the researcher in grading the quality of evidence with a ranking scale (Thompson, 2017). Melnyk's LOE rates articles using Level I to Level VII ranging from the highest to the lowest LOE (Thompson, 2017). The project leader appraised and leveled the articles, which resulted in: 10 level I's, 6 level II's, 6 level V's, and 3 level VI's. See the literature review matrix in Appendix A for the LOE assigned to each article. The project leader considered the quality of data sources by reviewing sample size, methodological rigor, study limitations, and the value of the information provided.

Literature categories. The review of literature included 25 articles, of those 25, five were guidelines and 20 were research articles. The project leader categorized the research articles based on the topic of interest for the project. The topics included weight loss, strategies and interventions, the 5 A's Model, and associated comorbidities.

Guidelines. The project leader reviewed five guidelines in support of the project; in total, three relating to obesity and two relating to OSA. The three obesity guidelines emphasized the importance of regular screening for overweight and obesity to promptly diagnose and begin a WL program to prevent or treat comorbidities related to obesity (Fitzpatrick et al., 2016; Garvey et al., 2016; NICE, 2014). Fitzpatrick et al. (2016) stated that screening should occur for comorbidities at the time a patient with excess weight is diagnosed with obesity. In addition, the PCP should use the 5 A's Model to counsel about excess weight and is associated with increasing a patient's motivation to attempt WL methods (Fitzpatrick et al., 2016). Lastly, Garvey et al. (2016) stated that an initial WL goal of 7-11% is ideal to reduce OSA severity.

The two OSA guidelines stated that all patients with obesity who are diagnosed with OSA should begin WL management to reduce or reverse OSA severity and comorbidities associated with obesity and OSA (Hudgel et al., 2018; Qaseem et al., 2013). Moreover, obese

and overweight individuals should be screened regularly to begin prompt WL treatment (Hudgel et al., 2018; Qaseem et al., 2013). Hudgel et al. (2018) declared that PCPs should use the 5 A's Model and acceptable terminology to educate about obesity since they are effective methods to promote WL. Qaseem et al. (2013) stated there is a high rate of CPAP noncompliance, which places the patient at risk for comorbidities associated OSA.

Research. The project leader selected 20 articles for the research category. During the research review, the project leader identified repeating themes. The research articles were divided by the project leader into weight loss, strategies and interventions, 5 A's Model, and associated comorbidities.

Weight loss. The WL category was further divided to describe the impact of WL on OSA and WL goal. WL is imperative for obese patients with OSA to reduce severity and was supported in 11 research articles. The AP must establish a WL goal for the patient to effectively reduce OSA severity and is supported by four articles (Araghi et al., 2013; Garvey et al., 2016; Ng et al., 2015; Rotenberg et al., 2016).

Impact of WL on OSA. WL in patients having obesity reduces OSA severity (Araghi et al., 2013; Carneiro-Barrera et al., 2019; Hudgel, 2018; Kuna et al., 2013; McLaughlin et al., 2017; Mitchell et al., 2014; Ng et al., 2015; Tuomilehto et al., 2009). In fact, three RCTs stated that WL in patients who are obese will reverse OSA; the more weight that is lost correlates with more improvement and effectiveness to reverse or reduce OSA severity (Kuna et al., 2013; Ng et al., 2015; Tuomilehto et al., 2009). Obesity is the most significant RF for OSA and the more obese the patient becomes, the more severe the OSA (Araghi et al., 2013; Garg et al., 2012; Hudgel, 2018; Qaseem et al., 2013).

WL goal. At least a 10% WL will improve OSA severity (Araghi et al., 2013; Garvey et

al., 2016; Ng et al., 2015; Rotenberg et al., 2016). WL reduces fat accumulation around the upper airways and thorax, which decreases the incidence of nasopharyngeal collapsibility and resistance (Zammit et al., 2010). WL is associated with significant improvements in vital capacity, total lung volume, functional residual capacity, and forced expiratory volume (Cowan & Livingston, 2012).

Obesity knowledge deficit among advanced practitioners. Obesity is a national epidemic and is usually a preventable disease that causes many comorbidities, and there is an urgent need for APs to address and manage obesity (Bauer et al., 2014; WHO, 2018). At least six references stated there are knowledge deficits among APs about obesity and the need for follow-up (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009).

Strategies and interventions. Strategies and interventions were further divided into three categories including provider brief advice, preferred terminology when addressing obesity, and screening for obesity.

Provider brief advice. Two RCTs noted that brief WL interventions consisting of the provider advising obese patients that their health would benefit from WL is adequate to promote significant WL (Aveyard et al., 2016; Fernandez-Ruiz et al., 2018). WL advice from the PCP is welcomed by most patients with excess weight and is associated with significantly impacting the patient to change behavior to promote WL (McLaughlin et al., 2017; Plourde & Prud'homme, 2012; Post et al., 2011; Rose et al., 2013; Swift et al., 2012). Many APs do not diagnose or tell patients with obesity they have excess weight (Post et al., 2011). McLaughlin et al. (2017) reported only 42% of patients who are overweight or obese received WL education from the PCP. Delay of obesity diagnosis and management increases patients' risks for developing

comorbidities (Post et al., 2011).

Preferred terminology when addressing obesity. To prevent bias, stigma, and prejudice, it is important to use the preferred terms when discussing obesity with patients. The advised terms to use when consulting with patients are unhealthy, weight problem, and unhealthy weight (Hudgel et al., 2018; Swift et al., 2012; Ward et al., 2009).

Screening for obesity. Obesity has a strong association with OSA; therefore, the PCP should regularly screen for obesity to begin a WL plan (Araghi et al., 2013; McLaughlin et al., 2017; Mitchell et al., 2014; Phillips, Wood, & Kinnersley, 2014; Plourde & Prud'homme, 2012). An obesity diagnosis warrants promptly beginning a treatment regimen for WL (Ward et al., 2009). Phillips et al. (2014) emphasized the importance of consistency with APs diagnosing and managing obesity.

5 A's Model. The 5 A's Model is a teaching sequence effective in educating APs about WL and obesity (Asselin et al., 2017). The 5 A's Model is an evidence-based approach to behavioral change and includes five steps (Plourde & Prud'homme, 2012; Thille, 2018). The 5 A's stand for *assess, advise, agree, assist,* and *arrange* (Asselin et al., 2017). All five aspects should be used for maximal effectiveness (Plourde & Prud'homme, 2012; Thille, 2018).

Associated comorbidities. Comorbidities associated with obesity and OSA are important to consider. Overweight or obese patients have a higher likelihood of developing CVD, T2DM, various cancers, and premature mortality; in contrast, WL reduces comorbidities and mortality (Fruh, 2017; Hudgel, 2018; Rose et al., 2013; Tuomilehto et al., 2009). Obesity causes chronic inflammation in the blood vessels causing HTN and atherosclerosis, and predisposes an individual to insulin resistance because adipocytes secrete cytokine, which induces a chronic state of inflammation (Paniagua, 2016). Adding to obesity, OSA promotes weight gain since

fragmented sleep increases the hunger hormone ghrelin and reduces leptin resulting in appetite stimulation (Tuomilehto et al., 2009).

Synthesis and Quality of Literature

Five guidelines, five systematic reviews, six RCTs, two systematic reviews of descriptive studies, four systematic reviews of qualitative studies, and three qualitative reviews were available to support the project. Approximately 40% of the research consisted of level one evidence and 24% consisted of level two evidence using Melnyk's LOE, which left approximately 36% as level five and six. The strength of evidence supports the need to provide obese patients WL resources.

The large number of participants noted in the literature, well-utilized methodologies, and consistent findings further validated and supported the project. Limitations noted included some studies taking place in countries outside the United States, and many of the studies contained more men than women. Even with the limitations, the results can be generalized due to the high LOE using quantitative methods, consistent methodologies, and a large number of participants.

An extensive review of literature revealed significant support for this project. Obesity is the most significant RF for developing OSA. Having APs regularly screen, diagnose, and manage obesity promptly is imperative. WL in obese patients reduce and reverse the severity of OSA and associated comorbidities. The 5 A's Model is an evidence-based approach to effectively educate APs about obesity and the importance of follow-up. Lastly, brief WL interventions, consisting of the AP advising obese patients that their health would benefit from WL, is adequate to attempt and achieve WL.

Conceptual Framework

The Iowa Model of EBP was used as the conceptual model to provide a framework for

the project (Iowa Model Collaborative, 2017). The Iowa Model is a commonly used tool to provide a conceptual framework for the systematic integration of EBP and to explain outcomes (Moran, Burson, & Conrad, 2014). The Iowa Model contains the following systematic steps to guide the project: identifying the triggers for the project; stating the question; identifying if the topic is a priority; forming a team; assembling and synthesizing pertinent research to support the topic; determining if sufficient data exists to support the project; designing and evaluating the pilot intervention; evaluating the intervention to determine if adjustments are needed to adopt in practice; implementing and sustaining the intervention into practice; evaluating the intervention outcome; and disseminating the intervention (Hall & Roussel, 2014).

Triggers. Triggers identify deficits in the practice setting that need interventions to optimize outcomes (Hall & Roussel, 2014). Triggers can be problem-focused or knowledge-focused. Many problem-focused triggers prompted this project: the acknowledgement that obesity is an epidemic; research demonstrating a lack of provider awareness about obesity diagnosis and follow-up; research demonstrating obesity is the most significant RF for OSA; and OSA and obesity are noted as being responsible for various comorbid diseases and premature mortality.

Purpose of project. The purpose of this scholarly project was to increase the APs' awareness of obesity, obesity measurement and documentation, and the importance of follow-up; to provide the APs with strategies on how to approach the obese patient when referring them for WL follow-up; and lastly, to evaluate the APs' use of strategies and interventions, one month after the intervention in a sleep center. The clinical question for this project was: does raising the awareness of APs in a sleep center, via the 5 A's Model, about obesity and WL resources increase the number of referrals of obese patients with a BMI of 30 or more to a WL resource?

In addition, the APs were provided with interventions and strategies to diagnose and follow-up with obese patients using the 5 A's Model. The CDC (2018) and the WHO (2018) agreed that the epidemic of obesity needs to be addressed urgently since excess weight causes many preventable comorbidities and premature mortality.

Team. In sequence with the Iowa Model of EBP, a team was formed consisting of the project leader, the Regional Manager of Sleep Services, the Director of the Sleep Center, and the project Chair. The project leader conducted the project and along with the team supported, designed, and implemented the project. The Regional Manager of Sleep Services provided approval for this project and worked with the project leader to ensure the successful implementation of the scholarly project in the sleep center (see Appendix E). The Director of the Sleep Center worked together with the project leader and Regional Manager of Sleep Services to ensure the project was implemented in a proper manner. The project Chair gave approval for the project and guided the progression and completion of the project using the Iowa Model of EBP. The proper steps were taken to gain approval from Liberty University's (LU's) and Mission Health's (MH's) institutional review board (IRB) (see Appendices F and G). In addition, the team worked together to design and implement the project and to ensure its success among the targeted population.

Literature review. A literature review was completed and synthesized revealing sufficient, high-level evidence to support the project (see Appendix A). The literature review demonstrated a scientifically sound foundation for making practice decisions related to the issue of obesity and supported this scholarly project. The research indicated a knowledge gap exists among APs about obesity and follow-up. Moreover, sufficient evidence correlated that obesity is the most significant RF for OSA, WL efforts reduce or reverse the severity of OSA, and

comorbidities are associated with obesity and OSA. Even though limitations identified in the literature consisted of some of the research occurring outside the U.S. with a large proportion of male participants, the results were generalizable due to the high LOE and large number of participants in the studies.

Implementation and dissemination. Implementation of the educational intervention was conducted in accordance with the Iowa Model of EBP. After implementation, the results were evaluated to assess whether the changes were appropriate for adoption into practice at the sleep center. The results were disseminated among the APs at the sleep center and shared with other community-based APs.

SECTION THREE: METHODOLOGY

Design

This scholarly project aimed to implement an educational intervention within the sleep center. The project is evidence based and used a quasi-experimental approach to collect and analyze data. The Iowa Model of EBP was used as a framework for the project. The quasi-experimental approach allows for the examination of the relationships between the variables (Hall & Roussel, 2014). For this EBP project, the relationship between the independent and dependent variables were examined. The pre-intervention chart audit examined the AP's awareness of limited obesity and measured the number of referrals for obesity follow-up before the intervention. The post-intervention chart audit and post-survey was conducted one month after the obesity educational intervention to measure the AP's use of recommended strategies and interventions with sleep center patients. The post-intervention chart audit further evaluated the effectiveness of the obesity educational intervention among the participants.

Variables

The independent variable was an obesity educational intervention for APs at a sleep center. The dependent variables included: APs' awareness of limited obesity awareness, their awareness of recommended strategies and interventions, and their ability to utilize these strategies and interventions one month after the intervention.

Measurable Outcomes

The measurable outcomes for this project included:

1. After a provider educational intervention, APs will demonstrate improved awareness of the importance of obesity and follow-up
2. After a provider educational intervention, APs will demonstrate improved awareness of recommended strategies and interventions to improve obesity follow-up
3. After a provider educational intervention, APs will demonstrate improved utilization of strategies and intervention to improve obesity follow-up
4. After a provider educational intervention, APs will demonstrate an increase in referrals to WL resources

The outcomes were evaluated via a pre- and post-intervention chart audit. The pre-chart audit assessed the participant's baseline awareness of the impact of obesity and recommended strategies and interventions to improve referrals to WL management resources, while identifying the number of obesity referrals (see Appendix H). One month after the intervention, a chart audit was conducted to determine the number of obesity referrals. AP obesity awareness and use of strategies and interventions were measured by comparing the baseline number of referrals to the number of post-intervention referrals to WL resources one month after the intervention. A post-survey assessed additional information from APs to determine if they perceived the education as

helpful and if they planned to use the strategies and interventions for at least one year (see Appendix I).

Setting

The setting for this EBP project was a fully accredited, outpatient sleep center in Western North Carolina. The sleep center has a 14-bed sleep lab and is certified by the American Academy of Sleep Medicine (MH, 2019). The sleep center has been caring for patients since 1979 and provides care for approximately 600 patients yearly (MH, 2019). The sleep center APs evaluate and treat patients with sleep disorders, including OSA, narcolepsy, insomnia, and other parasomnias (MH, 2019). The sleep center is owned and operated by a for-profit hospital system and is located in a city with a population of 89,121 people covering 45.53 square miles (World Population, 2019). Up to 78% of the population is white, 17% is African American, and 3.76% is Hispanic (World Population, 2019). The average yearly income is $30, 203 with an overall poverty level of 16.25% (World Population, 2019).

The affiliated for-profit sleep center upholds a commitment to patient-centered healthcare and seeks to improve human life and outcomes without regard to race, ethnicity, gender, religion, age, disparity, veteran status, or life-style choice (Hospital Corporation of America [HCA], 2019). The hospital-system states that health care delivery must be founded on compassion, respect, and inclusion of the patient and staff (HCA, 2019). Lastly, HCA (2019) owns the sleep center and is committed to practice ethical standards, behavior, and compliance, while treating patients and staff with loyalty, integrity, and fairness.

The scholarly project was aligned with the affiliated for-profit sleep center's values since it aimed to improve health outcomes and human life. In addition, patients and staff involved with this project were treated without prejudice in all circumstances. The project was created,

conducted, and implemented in an ethical manner while safeguarding health, privacy, and dignity at all times.

The Regional Manager of Sleep Services, the Director of the Sleep Health, and the Medical Director of the Sleep Center supported this project. The Regional Manager of Sleep Services provided a letter of approval for this project (see Appendix E). The project leader worked with the Regional Manager of Sleep Services, who ensured the successful implementation of the scholarly project in the sleep center.

Population

The primary population sample for this EBP project included APs in the sleep center, who supported the discharge process. Two APs received an educational intervention regarding obesity and the importance of WL follow-up. The APs discharge approximately 600 patients from the sleep center each year. The primary sample was a convenience sample, as only those APs who volunteered to participate in the project were included (Mateo & Foreman, 2014). Inclusion criteria included only APs who discharge patients in the sleep center and participated in all parts of the project, which included the educational intervention and post-survey. Exclusion criteria included the APs who refused consent to complete the educational intervention or post-survey.

The project leader emailed a recruitment letter to the prospective participants (see Appendix J). The project leader obtained access to the emails by contacting the Manager of the Sleep Center. The recruitment letter prompted the APs to contact the project leader by email or phone for approval to participate in the project; both APs responded via email to the project leader.

The secondary population for this project included obese patients in the sleep center.

Inclusion criteria for the patient population consisted of obese patients with a BMI of 30 or greater. Exclusion criteria included patients who were pregnant, less than 18 years of age, and considered to have a BMI of 29.9 or less.

Ethical Considerations

Providing an educational intervention about obesity and the importance of follow-up posed minimal risks to the participants. The project leader and project chair completed Collaborative Institutional Training Initiative (CITI, 2016) education, which ensured that ethical considerations were incorporated into the implementation of the scholarly project. The project leader's CITI certificates are provided in Appendix K. The Regional Manager of Sleep Services provided a letter of support, and the project was further supported by the Director of Sleep Health and the Medical Director of the Sleep Center (see Appendix E). The EBP scholarly project was successfully defended to the project's Chair for approval. Upon gaining support from the project's Chair, the project gained approval from the IRBs at LU and MH.

Informed consent. The project leader met with the APs face to face. The project was explained in detail to the APs before obtaining informed consent (see Appendix L). The participating healthcare APs were guaranteed anonymity and confidentiality and assured that their participation completing the post-survey would have no influence on their job or employment status.

Protection of human subjects. This scholarly project involved minimal risk to participants, as it only provided an educational intervention for APs. The AP's rights were protected by the project leader giving clear information about the project and obtaining informed consent before participating in the project (Mateo & Foreman, 2014). The project leader conducted a pre-chart audit before the intervention and a post-chart audit one month after the

intervention to determine the number of WL referrals. A post-survey was administered one month after the educational intervention in a face-to-face manner. The post-survey was in the form of a hard copy and scanned and stored in a password-protected Word Document on a password-protected computer. All hard copies were shredded after they were scanned.

The post-surveys and chart audits were collected by the project leader and will remain confidential to protect against the invasion of the APs' and patients' privacy to ensure that no breaches in confidentiality occur. Health Insurance Portability and Accountability Act regulations were followed to safeguard the patients' privacy of their identity and healthcare information during the chart audits. The results were collected and placed on a password-protected Excel spreadsheet and saved on a password-protected computer, accessible exclusively by the project leader. The data will be maintained for three years after the completion of the scholarly project, accessible exclusively by the project leader, and no duplicates will be made. After three years, the information will be permanently deleted from the computer using commercial software. No identifying data was or will be used in project publication or presentation.

Data Collection

The data collected included a post-survey, baseline chart audit, and post-intervention chart audit. A post-survey was administered in the form of a hard copy one month after the intervention. The post-survey was handled exclusively by the project leader to prevent confounding data or bias. The post-survey measured the AP's use of recommended strategies and interventions with sleep center patients.

To avoid confounding factors or bias, the project leader performed a baseline and a post-chart audit one month after the educational intervention assessing the number of referrals for

obese patients to follow-up with their PCP for a WL regimen. The data from the chart audits determined the AP's use of strategies and interventions. The pre- and post-chart audit data was compared.

Tools and Instruments

Post-survey. The project leader created a post-survey and gave it to the participants as a hard copy one month after completing the educational intervention. The post-survey evaluated the APs' use of the recommended obesity strategies and interventions in their practice and ascertained whether the educational intervention was useful, if usage of interventions occurred within a month of the intervention, and if usage of interventions were anticipated to continue for at least a year (see Appendix I). The validity and reliability of the post-survey is not known because it was created by the project leader. The project Chair reviewed the post-survey to determine the ease of use and applicability to the educational content.

Pre- and post-chart audit. The project leader performed a pre- and post-chart audit to measure the AP's use of recommended strategies and interventions. Both audits used hard copy medical records to access 30 random charts from patients having an obesity diagnosis to determine the number of referrals for patients to follow-up with their PCP for a WL plan. The project leader identified charts with documentation stating that the patient's BMI was 30 or greater and provider charting about the patient encounter.

The pre-chart audit was conducted before the educational intervention using charts from within the year, while the post-chart audit occurred one month after the educational intervention. The baseline number of referrals were compared to the post-intervention number to determine the effectiveness of the intervention. The sleep center's goal was to reach their benchmark of at least 75% of the post-intervention audited charts having proper documentation stating that the

obese patient received a WL referral (see Appendix H). The project leader compared the baseline number of referrals to the post-intervention number to determine the effectiveness of the intervention.

5 A's model framework. The project leader used the 5 A's Model while providing education to the sleep center's APs. The 5 A's Model is an EBP approach to provide effective education to PCPs about WL and obesity (Asselin et al., 2017; Thille, 2018). The 5 A's Model is a teaching sequence entailing five major steps to behavioral change and all five aspects should be used for maximal effectiveness (Plourde & Prud'homme, 2012; Thille, 2018). The 5 A's stand for *assess, advise, agree, assist,* and *arrange* (Asselin et al., 2017). *Assess* entails the AP assessing the level of obesity by measuring and documenting the BMI and identifying the patient with a BMI at or above 30; *advise* allows the AP to provide information on obesity and its associated health risks and benefits of weight loss; *agree* permits the patient and AP to agree that WL of 5-10% of initial body weight can have benefits to health; *assist* allows the AP to provide the patient with community resources to promote health and WL; and lastly *arrange* provides a written referral for the patient to follow-up with their PCP for a WL plan (AACN, 2018; Plourde & Prud'homme, 2012).

Intervention

For this EBP project, the project leader implemented an obesity educational intervention for APs at the sleep center. Evidence supports the use of AP education to change knowledge, beliefs, and practice. Creation of the obesity educational intervention was guided by the literature review and the American Academy of Nurse Practitioners' (AANP, 2018) *Introductory Certificate of Obesity in Primary Care* EBP learning exercise in modules one through four. The educational intervention consisted of a PowerPoint presentation, which took approximately 30

minutes to review during a lunch-and-learn opportunity.

Due to the fact that obesity is a national epidemic and is the most significant threat to society, an urgent need exists for APs to address and manage obesity (Bauer et al., 2014; Kyle et al., 2016; WHO, 2018). Research supports raising awareness about obesity and the importance of follow-up among APs to promote WL and ultimately reduce or reverse comorbidities and OSA severity (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009).

PowerPoint presentation. The project leader created a PowerPoint presentation and incorporated the information from the literature review and from modules one through four of the "Introductory Certificate of Obesity in Primary Care" (AANP, 2018). The PowerPoint presentation is included in Appendix M. The content included general information about obesity, the importance of follow-up, and the recommended strategies and interventions to address obesity (AANP, 2018). Module one included information about the prevalence of obesity in America; hormones responsible to induce hunger and satiety; and how excess weight correlates with the onset and progression of comorbidities (AACN, 2018). Module two highlighted BMI and how it is used to define obesity. Modules three and four discussed the recommended strategies and interventions to address obesity; this information was used in the PowerPoint. The PowerPoint also included the 5 A's Model for behavioral change, preferred terms to use when discussing obesity, and the percentage of WL needed to reverse or reduce comorbidities associated with obesity (AACN, 2018).

The content used from the literature further supported and enriched the educational intervention about obesity, the importance of follow-up, and strategies and interventions to address obesity. Content used from Kyle et al. (2016) further supported defining obesity while

emphasizing the urgency to address the obesity epidemic. The lack of AP awareness about obesity and the importance for follow-up was discussed while further supporting general information about obesity (CDC, 2018; McLaughlin et al., 2017; Post et al., 2011; Zammit et al., 2010). A discussion about the prevalence and pathophysiology of OSA highlighted the importance of addressing obesity in the OSA population to a sleep center's APs (Araghi et al., 2013; Garvey et al., 2016; Mitchell et al., 2014; Ng et al., 2015; Rotenberg et al., 2016; Tuomilehto et al., 2009; Zammit et al., 2010). Interventions and strategies applied the 5 A's Model Framework while educating APs about obesity, preferred terminology to use when addressing obesity, effectiveness of a brief intervention to promote WL, and the written referral (Aveyard et al., 2016; Fernandez-Ruiz et al., 2018; Hudgel et al., 2018; Swift et al., 2012; Ward et al., 2009).

Post-survey. The project leader administered a post-survey one month after the intervention to evaluate the AP's usage of strategies and interventions. The post-survey asked the APs four questions about the intervention; if they perceived the educational intervention as helpful; the areas of the intervention they found most useful for practice; if they used any interventions within a month of the intervention; and if they plan to continue the interventions for at least one year. The post-survey data showcased the usage of strategies and interventions by APs to interface with obese clients in offering them WL resources.

Implementation. Implementation of the intervention consisted of two phases. Phase one included conducting a pre-chart audit, obtaining consent to participate in the project, and presenting a PowerPoint presentation in a face-to-face manner. Phase two involved completion of the post-intervention chart audit and the post-survey.

Phase one. The project leader completed a pre-chart audit prior to the educational

intervention. The project leader explained the consent and project details in a face-to-face manner to the prospective participants. The project leader guided the participants through a two-step process:

1. Consenting to participate in the project
2. Viewing a PowerPoint presentation created by the project leader during the lunch and learn opportunity

The project leader outlined clear instructions for completing each step during the face-to-face encounter. The participants were given an opportunity to ask questions.

Phase two. One month after completion of phase one, the project leader performed a post-chart audit. The project leader randomly audited 30 charts to determine the percentage rate and number of charts with proper documentation stating, "I advised the patient to lose weight, exercise, and referred him/her to their PCP for a weight management program." The number of baseline and post-intervention referrals were compared. In addition, a post-survey was completed one month after the intervention to measure the AP's use of recommended strategies and interventions with sleep center participants. The post-survey further ascertained whether the educational interventions were useful, if usage of interventions occurred within a month, and if usage of interventions were anticipated to continue for at least a year (see Appendix I).

Data Collection

The project leader collected data during a pre- and post-chart audit and a post-survey. The chart audits determined if 30 random patients who met the obese criteria at the sleep center, had an obesity referral as described in the Instrument and Tool section. The post-survey was a tool administered to the participants by the project leader in a face to face manner one month after the educational intervention as discussed in the Instrument and Tool section. The

intervention section describes how the pre- and post-chart audits and post-survey were conducted. The differences in the baseline and post-intervention chart audits, and the results of the post survey revealed the differences between obesity awareness, the importance of follow-up, and the use of strategies and interventions. The project leader documented the data in password-protected Excel spreadsheets and analyzed using the Statistical Package for the Social Sciences (SPSS) software.

Team members. The project team consisted of the project leader, project Chair, Director of the Sleep Center, and the Regional Manager of Sleep Services. The project leader was responsible for creating and delivering an educational PowerPoint presentation and post-survey to the APs. In addition, the project leader collected the data from the participants. The project Chair provided guidance and ensured successful implementation of the scholarly project. The project leader requested a statistician to assist in evaluating the collected data of the final analysis. The project leader used an editor to support the publication for the final scholarly project.

Feasibility analysis. The following was considered to determine the feasibility of the scholarly project: personnel, resources and technology, and cost/benefit analysis.

Personnel. The project leader obtained approval and support for the scholarly project from the Regional Manager of Sleep Services. Discussion on the optimal way to ensure maximal engagement in the project by the sleep center's APs led to the consideration of a lunch-and-learn for participants, as well as face-to-face communication regarding the project intervention and implementation. This approach allowed for a more intimate environment, again, a request by the center leadership. The following personnel played a role in supporting or participating in the scholarly project:

- Project leader
- Project Chair
- Director of the Sleep Center
- Regional Manager of Sleep Services
- Editor
- Statistician
- APs at the sleep center

Resources and technology. The resources and technology used to complete the scholarly project included:

- Personal computer
- Internet provider
- PowerPoint
- Microsoft Word
- SPSS Software
- Excel

Budget and cost/benefit analysis. Feasibility was considered when implementing the evidence-based project to ensure the cost did not outweigh the benefits and feasibility (Brownson, Colditz, & Proctor, 2018). The scholarly project was budget neutral, as all accrued costs were covered by the project leader. The project leader developed and presented an educational intervention without incurring costs. Each participant had a 60-minute allotment to complete the educational intervention; this time allotment occurred on a lunch break and incurred no costs for the sleep center because the lunch was covered by the project leader. The potential benefits for implementing this scholarly project outweighed the cost, as increasing

obesity awareness among APs facilitated the use of interventions and strategies to reduce the prevalence of obesity, OSA, and the onset and progression of chronic illnesses.

Statistical analysis and evaluation. The project leader collected data from the baseline-chart audit, post-intervention chart audit, and post-survey; the data was entered into SPSS software. In addition, the project leader used Excel to code the post-survey. The project leader ran descriptive statistics on the data to determine statistical significance (Moran et al., 2014).

Baseline and post-intervention chart audit. The baseline and post-intervention chart audit for obesity referrals measured the AP's awareness of obesity and follow-up; awareness of strategies and interventions to promote obesity follow-up; and utilization of strategies and interventions to improve obesity follow-up. The project leader collected data from the baseline chart audit counting the number of referrals for obesity follow-up and compared them to the post-intervention number of referrals for obesity follow-up. The project leader ran a Two-Proportions Test to examine the difference and evaluate for significance between the two audits. The project leader chose the Two-Proportions Test to analyze the data since the results produced proportions in two different populations, which are non-continuous data.

Post-survey. The project leader used a post-survey to gain insight from the participants regarding their perception of the educational intervention, usage of interventions the month following the intervention, and if usage of interventions was anticipated to continue for at least a year. The participants completed the post-survey one month after the educational intervention. The project leader pre-coded responses by assigning numbers to each of the choices allowing the data to be entered into SPSS software.

Summary of findings. The measurable outcomes for this project were: (a) after a provider educational intervention, APs will demonstrate improved awareness of the importance

of obesity and follow-up; (b) after a provider educational intervention, APs will demonstrate improved awareness of recommended strategies and interventions to improve obesity follow-up; (c) after a provider educational intervention, APs will demonstrate improved utilization of strategies and intervention to improve obesity follow-up; and (d) after a provider educational intervention, APs will demonstrate an increase in referrals to WL resources. Each outcome is discussed below.

Outcome 1: Improved awareness of the importance of obesity and follow-up. As demonstrated by post-survey findings, both of the APs found the educational intervention useful. An evaluation of the short answer on the post-survey revealed that due to the educational intervention, one of the APs was made aware of the importance to document and discuss WL counseling with obese patients. The other AP annotated that due to the educational intervention, he or she has been more intentional about educating obese patients about weight management.

Outcome 2: Improved awareness of proven strategies to improve obesity follow-up. The post-survey findings revealed the educational intervention improved the awareness of recommended strategies and interventions among the APs to improve obesity follow-up. One of the APs selected that the most useful aspect of the educational intervention was the 5 A's Model. The other AP selected that the most useful aspect of the educational intervention was learning about preferred terminology when addressing obesity. The positive responses from the APs suggest the educational intervention positively impacted their awareness of recommended strategies and interventions.

Outcome 3: Improved utilization of strategies to improve obesity follow-up. The post-survey results showed that the educational intervention improved the utilization of strategies to improve obesity follow-up with the APs. Both APs within one month of the educational

intervention used the 5 A's Model, and one used the written referral to improve obesity follow-up. One AP selected that he or she will integrate the interventions and strategies for at least a year. The other AP annotated in a short answer that he or she would not be working at the sleep center but will continue to educate patients about obesity in future employment.

Outcome 4: Increase in referrals to WL resources. The pre- and post-intervention chart audits demonstrated that there was an increase in referrals to WL resources. The pre-intervention chart audit revealed that 10% of the charts had documentation stating that obese patients received a referral to follow-up with their PCP for a WL plan. The post-intervention chart audit indicated that 47% of the charts had WL referral documentation. The results of this EBP project showed an improvement of 37% from pre-intervention to post-intervention use of WL referrals, indicating statistical significance. Also, the *p*-value was calculated as 0.001 using an alpha of 0.05 signifying clinical significance since the *p*-value is less than 0.05.

SECTION FOUR: RESULTS

The project leader utilized statistical testing and descriptive statistics to demonstrate the results of this project. Pre- and post-intervention chart audit data was conducted on 30 random charts for each audit. In addition, post-survey data was collected on two APs.

Pre-and Post-Chart Audit

Prior to the pre-intervention chart audit, the Regional Manager of the Sleep Center randomly selected patients seen by the APs at the sleep center within the last year and printed out a list with the patient's name, medical record number, and date of birth. During the pre-intervention chart audit, the project leader used the patient list to identify 30 charts that included patients with a BMI of 30 or greater and included provider documentation about the patient encounter. The provider documentation was examined for the presence or absence of an obesity

referral for the patient to follow-up with their PCP for a WL plan. Based on the pre-intervention retrospective chart audits, there were a total of three out of 30 charts with documentation stating that obese patients received a referral to follow-up with their PCP for a WL plan. Prior to the intervention, of the patients with a BMI of 30 or greater, 10% had a note in their chart indicating a referral for obesity follow-up.

The same process used to select patients for the pre-intervention chart audit was applied to the post-intervention chart audit, except the timeframe included patients seen by the APs within a month of the intervention. During the post-intervention chart audit, 30 charts were identified that contained patients with a BMI of 30 or greater and included provider documentation about the patient encounter. The project leader examined the provider documentation for the presence or absence of a WL referral for obese patients to follow-up with their PCP for a WL plan. Based on the post-intervention retrospective chart audits, a total of 14 out of 30 charts had documentation demonstrating that obese patients received a referral to follow-up with their PCP for a WL plan. The percentage of patients who received an obesity referral post-intervention was approximately 47%. The percentage of patients who received a WL referral was compared pre- and post-intervention (Figure 1).

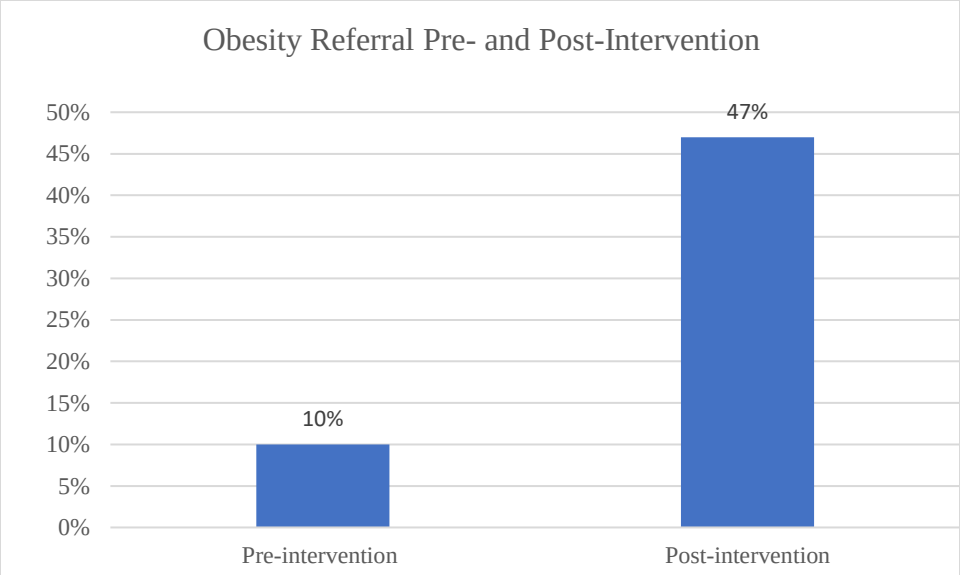

Figure 1. Obesity referral comparison pre- and post-intervention.

In order to evaluate whether this change in obesity referral follow-up was statistically significant, the project leader applied the Two-Proportions Test to the data. With an alpha of 0.05, the SPSS results for the Two-Proportion Test generated a pre- and post-intervention *p*-value of 0.001 (Table 1).

Table **1**

Pre- and Post-Intervention z-test Results

Pre- and Post-Intervention Cross Tabulation and *p*-Value Results	**Column1**	**Column2**	**Column3**
Sample	N	Referrals	Percent
Pre-Chart Audit	30	3	10%
Post-Chart Audit	30	14	47%
p-Value 0.0001			

Post-Survey

A total of two APs were invited to participate in the project, and both met the inclusion

criteria by completing the post-survey one month after the educational intervention. In response to the first question of the post-survey, both APs stated they found the obesity intervention helpful. For question two, one of the participants stated that learning about the 5 A's Model was the most useful aspect of the educational intervention, while the other participant stated that learning the preferred terminology when addressing obesity was the most useful (Figure 2). For question three, both APs stated they used the 5 A's Model, and one used the written referral within a month of the educational intervention. For question four, one AP stated he or she will integrate the interventions and strategies into practice for at least a year and further annotated that obesity education needs to become a routine discussion with patients and needs to be disseminated into broader healthcare context. The other AP annotated he or she would not be working at the sleep center, but will continue to educate patients about obesity in future employment.

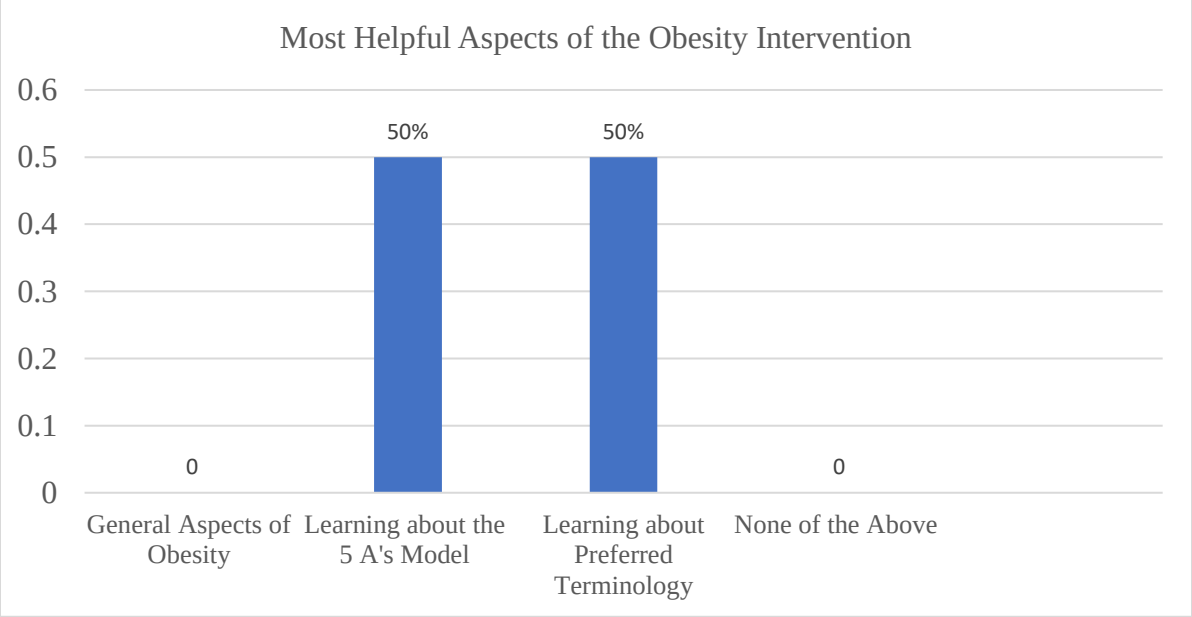

Figure 2. Most helpful aspects of the educational intervention.

SECTION FIVE: DISCUSSION

The results of the EBP project indicate the number of documented obesity referrals increased from pre- to post-intervention. Based on the results, three out of 30 of the audited charts identifying patients with obesity were referred to their PCP to follow-up for a WL plan before the educational intervention. Post-intervention, 14 out of 30 patients identified with obesity were referred, equating to an improvement of 37% from pre-intervention to post intervention.

Considering the Two-Proportions Test with an alpha of 0.05, a $p = 0.001$ determined that the pre- and post-proportions were significantly different. The *p*-value was less than 0.05, meaning the post-intervention proportion of 47% was greater than the pre-intervention proportion of 10%, signifying a difference in proportions and statistical significance. With the pre- and post-chart audit proportions being different, a lack of clinical significance can be dispelled because the *p*-value was less than 0.05, which indicates a change occurred.

The difference between the two proportion samples is 36.67%. The 95% confidence interval (CI) range is 15.84% to 57.5% based on the observed difference between the two proportions and sample size (Table 2). A 95% confidence indicates the true difference of proportions is somewhere between the range of 15.84% and 57.5%. Due to the fact the CI range does not include zero, at least a 95% confidence shows the pre- and post-proportions are different, indicating statistical significance (Figure 3).

Table 2

Confidence Interval and Difference Between Samples for Pre- and Post-Intervention Chart Audits

Difference Between Samples

Statistics	*Difference
Difference	-36.67
95% CI	(-57.50, -15.84)

*Difference = Group 1 - Group 2

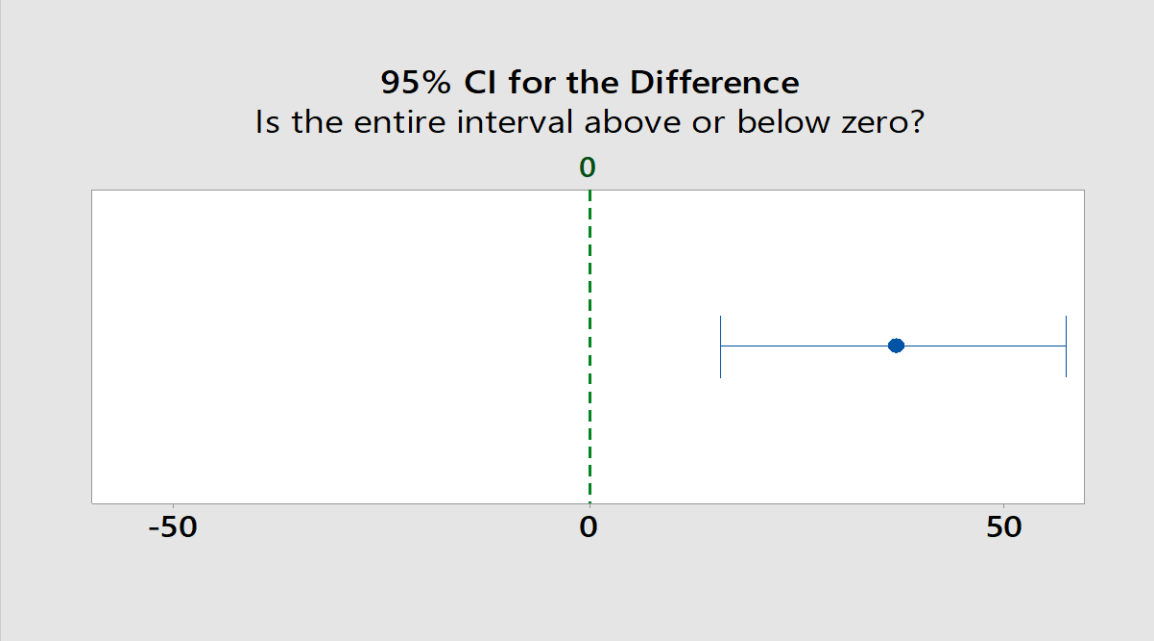

Figure 3. Pre- and post-proportion confidence interval range.

The goals of this EBP project were to raise awareness of obesity and follow-up; awareness of strategies and interventions to promote obesity follow-up; and utilization of strategies and interventions to improve obesity follow-up. The results from this project demonstrated clinical and statistical improvement in providing follow-up in the obese population at the sleep center. These results answer the project's clinical question supporting that the implementation of an obesity educational intervention and strategies for follow-up to the APs did improve WL referrals for patients identified with obesity.

Limitations

This project had limitations. First, the participant size for this project was small, as the sleep center only employed two APs. However, of note, the APs see over 600 patients each year at the sleep center and have the potential to provide follow-up with many patients identified with obesity.

Another limitation to be considered was that paper charts were utilized to collect the audit data. The sleep center has partially integrated electronic charting to date. During the audits, some of the paper charts on the patient list provided by the Regional Manager of the sleep center were not able to be found in the medical record room of the facility. In addition, some of the chart contents were missing provider documentation about the patient encounter. Missing charts and information may have affected the results since this data could not be used in the project.

Significance and Implications for Practice

Integrating education about obesity and the importance of follow-up addressed the national epidemic and threat to society (Bauer et al., 2014; Kyle et al., 2016). APs must urgently address obesity to prevent the onset or progression of comorbidities related to excess weight and reduce financial and psychosocial burdens (CDC, 2018; WHO, 2018). Research shows significant knowledge deficits among APs about obesity and the need for follow-up (Aveyard et al., 2016; Fitzpatrick et al., 2016; NICE, 2014; Post et al., 2011; Rose et al., 2013; Ward et al., 2009). Many patients with obesity welcome WL advice from their PCP and are more likely to attempt WL with provider suggestions (Aveyard et al., 2016; Hudgel et al., 2018; McLaughlin et al., 2017; Plourde & Prud'homme, 2012; Rose et al., 2013).

It is imperative that healthcare organizations incorporate new-hire AP education about obesity and the importance of follow-up to increase awareness of the consequences elicited by

excess weight. In addition, follow-up with APs regarding their integration of proven interventions and strategies to address obesity is warranted to ensure patient-centered, quality care. The EBP project improved the quality of care that APs administer to the obese population in the sleep center by enabling them to address obesity and utilize effective interventions and strategies.

Dissemination

Translating EBP into practice is crucial and is accomplished via dissemination of the project results and ensuring sustainability of the intervention (Brownson et al., 2018). As noted, obesity is a significant health concern, opportunities will be considered to share this information with other community-based APs along with policy makers at the local, state, and national levels (Bauer et al., 2014; Kyle et al., 2016). Moreover, this project will be shared with various literature repositories and journals. Sustainability will be encouraged by educating APs about obesity and the importance of follow-up by considering the creation of a policy and procedure to support the new change (Brownson et al., 2018). Objectives related to the dissemination of the research include:

1. To expand community awareness and understanding about the impact of obesity.
2. To promote the use of recommended obesity interventions and strategies by APs in daily practice.
3. To incite healthcare organizations to include education about obesity and the importance of follow-up as part of the new-hire process.

Conclusion

Due to the national obesity epidemic affecting close to 40% of adult Americans, an urgent need exists for HCPs to address the impact of excess weight (Kyle et al., 2016). Obesity

most commonly results from poor nutrition and inactivity, predisposing the individual to the onset or progression of comorbidities including OSA (CDC, 2018). Many HCPs have not received adequate training on WL management, which signifies knowledge deficits among APs contributing to the obesity epidemic (Colbert & Sushrat, 2013; Rose et al., 2013). Research has shown that WL of 5% to 10% of initial body weight can reverse or reduce the onset of chronic illnesses (Plourde & Prud'homme, 2012).

This EBP project utilized the 5 A's Model, preferred terminology, and a WL referral to educate APs about obesity and the importance of follow-up. In addition to a post-survey, the project leader performed a pre-intervention chart audit and post-intervention chart audit to determine the APs' awareness of obesity and the use of recommended strategies to address obesity. The results of this EBP project showed an improvement of 37% from pre-intervention to post-intervention use of WL referrals, indicating clinical and statistical significance. The post-survey revealed that the educational intervention addressing obesity was useful and within the last month the APs integrated the 5 A's Model and the written referral into practice and plan to use these strategies for at least a year.

Integrating obesity education, such as the educational intervention from this project, is a way for healthcare organizations to increase awareness about obesity among HCPs. This intervention will further promote the utilization of recommended strategies and interventions for obesity follow-up. The raised awareness will ultimately support patient-centered, quality care that is reflected by preventing or reducing chronic disease, reducing the severity of OSA, improving HCP communication, and reducing costs associated with obesity (Araghi et al., 2013; Fallah et al., 2017; Hudgel et al., 2018; Kuna et al., 2013; Tuomilehto et al., 2009). APs play a pivotal role in the obesity epidemic. As evidenced by this project, APs must utilize strategies

and interventions about WL. Their efforts will support the prevention and progression of chronic disease related to excess weight; and ultimately impact the financial and psychosocial burdens associated with the obesity epidemic.

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Appendix A

Literature Review Article Matrix

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Article 1 Aveyard, P., Lewis, A., Tearne, S., & Hood, K. (2016). Screening and brief intervention for obesity in primary care: A parallel, two-arm, randomised trial. *The Lancet*, *388* (10059), 2492-2500. doi.org/10.1016/ S0140-6736(16)31893-1	To determine if brief, physician-directed interventions to motivate weight loss (WL) in obese patients are acceptable and effective strategies	A randomize sample of 1882 obese patients in the primary care setting Support group: 940 patients • Male 43% • Female 57% • White 96% • African American 1% Intervention group: 942 patients • Male 42% • Female 57% • White 94%	Parallel, two-arm, randomized trial Intention to treat analysis Pre-prepared randomization cards were labeled with a code representing if the individual was placed in the control or intervention group Blinded to treatment allocation	Findings indicate that after 12 months: Control group with 1.04 kg WL Intervention group with 2.43 kg WL. Study results indicate that a brief, physician-delivered intervention is acceptable and an effective way to reduce population mean weight	Level 2: Randomized two- arm trial	The control and intervention populations are mostly white Slightly more females when compared to male participants Baseline data of participants' desire, intention, or confidence to achieve WL was not measured so unable to determine if motivation to lose weight was due to interventions	The article supports that providing brief advice to participants in the control group was adequate to promote WL. Referring obese patients in the intervention group for a WL regimen yielded more significant WL values Overall, 81% of the participants rated the physicians' brief intervention for WL as

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		• African American 4%					appropriate and helpful 12-month follow up for WL is an effective intervention to reduce weight.
Article 2 Fruh, S. M. (2017). Obesity: Risk factors, complications, and strategies for sustainable long-term weight management. *Journal of the American Association of Nurse Practitioners*, *29*, S3–S14. doi: 10.1002/2327-6924.12510	The purpose of the article is to review the effects of obesity on health and explore the existing evidence indicating that WL can reverse chronic illnesses	Literature based gathered from PubMed with key words that include: obesity, overweight, weight loss, comorbidity, cancer, diabetes, cardiovascular disease (CVD), depression, management,	Narrative review based on literature up to May 2016	Two meta-analysis showed that healthy lifestyle modifications reduced BMI 2.3 kg and reduced mean apnea-hypopnea Indexes (AHIs) by 6 events per hour. One meta-analysis showed WL	Level: 5 Systematic review of qualitative studies	The individual studies used were not individually listed in a figure, instead were listed as citations. The studies were referenced as the research type such as meta-analysis or RCT, but did not contain the number of	OSA is closely related to obesity since fat is deposited around the upper airways and thorax and compresses the airway lumens while reducing chest compliance Trusting relationships are essential to strong

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		and intervention		17.9 kg with bariatric surgery reduced AHI events by a mean of 38.2 events per hour. Obesity is associated with many comorbidities that include obstructive sleep apnea (OSA) diabetes, and CVD Over 15 studies revealed that a 5.5% WL was associated with a 15% reduction of all-cause mortality. Obesity guidelines endorse a target of 5% to		participants in the studies.	clinician-client relationships and are associated with successful WL results Obesity is associated with significant mortality and reduction of life expectancy of 5 to 10 years Evidence shows that most CVD and cancer-associated mortalities are markedly increased with obesity

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				10% WL to improve health outcomes All-cause mortality markedly rose with increasing body mass index (BMI) Literature shows that nurse practitioners are essential to assess, motivate, manage, and support WL efforts, establish WL goals, and implement initiatives to promote WL.			
Article 3 McLaughlin, J. C., Hamilton, K., & Kipping, R. (2017). Epidemiology of adult overweight recording and management by UK GPs: a	Identify the rate of documentation and management of overweight	The systematic review contains seven research articles that met criteria	Systematic Review from 2006 to 2017 using a systematic search used	The rate of BMI documentation amongst providers is steadily	Level 1	Most of the studies occurred in the UK's primary care system	This article underpins the importance of BMI measurement and

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systematic review. British Journal of General Practice, 67(663), e676–e683. https://doi-org.ezproxy.liberty.edu/10.3399/bjgp17X692309	and obese patients by general practitioners	ranging from 2011 to 2016 The study designs used in the articles consist of two cross-sectional study; a descriptive study; Three retrospective cohort study; and a cluster randomized control trial	databases that include MEDLINE, EMBASE, CINAHL Plus, ASSIA, HMIC, BNI, Cochrane Library, and the Index to Theses rendered 7 studies that met inclusion and exclusion criteria	decreasing. For example, the past 12 months showed 27.6% to 45.6% of BMI recording for males and 37.3% to 52.1% for females. Whereas, the previous 5 years showed BMI documentation at 57.8% to 79.3% for males and 60.7% to 67.6% for females. A study that included 32,079 overweight or obese participants showed that 15.1% of the participants were offered a		The participant in the cohort studies may have changed behaviors due to the awareness that they were being studied The RCTs may have included participant that did not have a general practitioner follow up This study did not include qualitative information from the participant that may include the usefulness of the GPs intervention or if they desired to integrate positive lifestyle modifications based on the	documentation to establish a diagnosis of overweight or obesity so WL management may occur as established by obesity guidelines. The scholarly project includes identifying and documenting patients with obesity to actively promote a WL regimen to reduce or reverse OSA Clinicians are more likely to diagnose obesity or overweight for patients with increased age, female gender, and increased combordities,

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				weight intervention for by the clinician. A study that included 91, 413 overweight or obese participants showed that 40% with morbid obesity were offered a WL intervention, while 15.8% to 19.8% of obese participants without morbid obesity were offered a WL intervention. All studies showed a pattern of association between compliance of BMI recording		WL interventions	while obese or overweight patients that are younger, male, or with a lack of comorbidities are not diagnosed appropriately and delayed WL management occurs. Most obese and overweight patients state they desire to lose weight and welcome direction from their PCP. Only 42% of obese adults report receiving direction for weight loss

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				with increasing age, female gender, and presence of comorbidities			
Article 4 Fernández-Ruiz, V. E., Armero-Barranco, D., Paniagua-Urbano, J. A., Sole-Agusti, M., Ruiz-Sánchez, A., & Gómez-Marín, J. (2018). Short-medium-long-term efficacy of interdisciplinary intervention against overweight and obesity: Randomized controlled clinical trial. International Journal Of Nursing Practice, 24(6), e12690. https://doi-org.ezproxy.liberty.edu/10.1111/ijn.12690	To evaluate the efficacy of a nurse-led multidisciplinary program on healthy lifestyle modifications to combat obesity in short, medium, and long-term durations.	Systematic search using the databases that include MEDLINE, EMBASE, CINAHL, Plus, ASSIA, HMIC, BNI, Cochrane Library, and the Index to Theses rendered 7 studies that met inclusion and exclusion criteria	Randomized controlled trial Interdisciplinary program over 12 months coordinated by nurse	Over 12 months: • Control group with weight gain of 0.9 kg • Intervention group with WL of 7.2 kg	Level 2 Randomized control trial	Populations lack diversity since both groups belong to same community First approach to analyzing the efficacy of nurse led WL interventions	Physician based WL programs have shown success. This study shows that initiatives led by nurses to reduce weight are successful to promote WL. The Scholarly project will be led by providers who are non-physicians WL reduction of 7.2 kg for nurse-led WL program uccess of the program is tied

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							to the nurse leading the program to actively support the initiative
Article 5 Garg, R., Singh, A., Prasad, R., Saheer, S., Jabeed P., & Verma, R. (2012). A comparative study on the clinical and polysomnographic pattern of obstructive sleep apnea among obese and non-obese subjects. Annals of Thoracic Medicine, 7(1), 26–30. https://doi-org.ezproxy.liberty.edu/10.4103/1817-1737.91561	To compare the pattern of OSA between non-obese and obese participants	A cross sectional retrospective study with 81 participants in a sleep center who were diagnosed with OSA within an 18-month period Non-obese: 36 • Mean age: 52.88 • Male 27 • Female 18 • Mean BMI 26.62 Obese: 45 • Mean age 49.76 • Male 23	Cross-sectional retrospective descriptive study by reviewing data from 81 patients diagnosed with OSA in the sleep clinic between January 2009 to July 2010 Analyzed and compared polysomnographic data between the obese and non-obese groups Clinical evaluation included Epworth	Mean AHIs per hour, desaturation rates, and arousals were significantly increased in the obese population when compared to the non-obese population **Obese population:** • AHIs per hour: 50.09 • Desaturation: 68.5% **Non-obese** • AHIs per hour: 24.36	Level 5 Systematic reviews with descriptive Studies	Small sample to compare findings Low cost and easy measurements were used to evaluate OSA that include asthyromental distance and mallampati grading though they correlate with OSA severity other technique that include CT, MRI and fluoroscopy are more accurate, but more expensive to	This study shows that OSA is more severe in obese individuals when compared to non-obese individuals signifying the importance of WL in this population OSA from obesity is caused by pharyngeal airway collapsibility from increased fat depositing on upper airways in pharyngeal region,

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		• Female 13	sleepiness scale, anthropometric measurements that include • BMI • Neck circumference • Thryment al distance • Mallampa ti score	• Desaturation: 80.3%		determine OSA severity	increased visceral fat that decreases lung volumes Non-obese patients may have OSA, but is less severe than obese patients Non-obese patients' etiology of OSA includes bony structure discrepancies It is estimated that 60-70% of patients with OSA are obese
Article 6 Plourde, G., & Prud'homme, D. (2012). Managing obesity in adults in primary care. *CMAJ : Canadian Medical Association journal = journal de l'Association medicale canadienne*, *184*(9), 1039-	To examine simple and effective strategies that improve weight loss counseling in clinical practice	Literature review that enlisted 88 articles from 2006 to 2011 that met inclusion and exclusion criteria	Literature that included databases from Medline, Embase, Scopus, and the Cochrane Database of Systematic Reviews	BMI or waist circumference should be used to assess for obesity; BMI is considered a reliable measure of adiposity-	Level 5 Systematic review with qualitative studies	This article is geared to Canadian citizens The individual studies used were not individually listed in a figure, instead	The BMI will be used to identify obese patients at the sleep center diagnosed with OSA to facilitate WL. The research states that the

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44. doi: 10.1503/cmaj.111640		Research designs include RCTs, systematic reviews and meta-analysis, cohorts, expert opinion, and guidelines	Key words included obesity, primary care, diet, physical activity, psychological counselling, weight loss, and weight management	related health risk The 5 A's Model of behavioral change is level I evidence and is effective to help patients modify health behaviors and promote physical activity Most clinicians exclude the 5 A Model that include assess, assist, and arrange; use of all areas promote effective WL		were listed as citations and described	5 A's Model is a level I evidence to promote behavior change To address overweight and obesity the research directs the clinician to use all 5 As aspects of the model The author will use all aspects of the 5 A's Model to systematically educate the sleep clinic clinicians on how to educate follow up with the obese patient Patients are more likely to lose weight if

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							advised to by PCP
Article 7: Thille, P. (2018). Knowledge brokering: (Mis)aligning population knowledge with care of fat bodies. *Canadian Journal of Public Health, 109*(5/6), 643–652. doi:10.17269/s41997-018-0147-1	The article aims to influence how clinicians address obesity by comparing two models to manage obesity and using the most effective techniques of each method	Review of methods to treat obesity that include the Framework of the Canadian Task on Preventive Health Care (CTFPHC) guidelines and the Canadian Obesity Network (CON) that highlights the 5 A's.	The authors review the Frame analysis of the CTFPHC guidelines to manage obesity and the 5 A's enlisted in the CON to determine how to effectively address and manage obesity	• The CTFPHC guidelines frame obesity mostly as a behavioral problem that excludes the chronicity of obesity • Recommend referring adults with a BMI between 25 and 40 for a WL regimen • More scientific-based with heavily cited texts	Level 5 Qualitative Studies	The authors are knowledge brokers and not health care professionals	The article gives pros and cons of CTFPHC guidelines and CON 5 A's Model. The CTFPHC guidelines do not consider the chronicity of obesity, but directs the clinician to refer overweight and obese patients for WL which is based on RCTs and has been shown to be effective methods to induce WL The scholarly project includes referral to the

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				• Narrow view when compared to 5As on how to manage and define obesity The 5 As • Gives a broader and effective approach to defining and managing obesity • Frames obesity as a complex and chronic disease management is geared toward improving			obese patients' PCP The 5 As are an evidence I to educate and manage obesity; the article gives a thorough breakdown of each area. Both findings support the scholarly project since obese patients will be referred for a WL plan and the 5 As will be incorporated

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				health and wellbeing			
Article 8 Asselin, J., Salami, E., Osunlana, A. M., Ogunleye, A. A., Cave, A., Johnson, J. A., Sharma, A. M., … Campbell-Scherer, D. L. (2017). Impact of the 5As team study on clinical practice in primary care obesity management: a qualitative study. *CMAJ open*, *5*(2), E322-E329. doi: 10.9778/cmajo.20160090	To educate health care providers on how integrating the 5As in family practices to manage obesity had a positive impact on the individual team and team practices	28 providers provided qualitative data about how integrating the 5As in practice to manage obesity impacted Registered nurses and nurse practitioners: 14 Dieticians: 7 Mental health workers 7 Intervention group: collected data using semi-structured interviews, field notes, practice facilitator diaries, and evaluation	Randomized Control Trial on implementing the 5As to help primary care providers improve clinical practice for obesity management	Providers perceived that the 5As approach to obesity management strengthened the client-provider relationship Participants stated that the 5As revealed biases about obesity and were able to reframe obesity as a chronic disease rather than a lifestyle choice and manage obesity in an effective manner to empower the patient	Level 2	Quantitative methods were used to measure the results, which may be difficult to replicate the findings No data to capture how the patients perceived the 5 A's approach Physicians' perception were not captured since they wanted monetary compensation for the RCT time	This article is important to show that the 5As approach to obesity education and management allowed providers to identify biases and reframe how they perceived obesity as a chronic disease rather than a lifestyle choice Clinicians perceived integrating the 5 A's to treat obese patients strengthens relationships amongst the providers, interdisciplinary staff, and the

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		workshop questionnaires		Providers stated that the 5 As promoted cultural sensitivity Relationships among the healthcare team members perceived positive interrelationships, increased interdisciplinary understanding about obesity, collaborated effectively amongst the disciplines about obesity, and communicated more effectively about ways to improve systems to better manage obesity			client-provider relationship The team was able to better communicate and manage obese patients The 5As approach strengthen cultural sensitivity

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Article 9 Tuomilehto HP, Seppä JM, Partinen MM, Peltonen M, Gylling H, Tuomilehto JO, … Uusitupa M. (2009). Lifestyle intervention with weight reduction: first-line treatment in mild obstructive sleep apnea. *American Journal of Respiratory & Critical Care Medicine, 179*(4), 320–327. doi:10.1164/rccm.200805-669OC	To determine if a low calorie diet to induce WL with supervised lifestyle counseling is an effective treatment for obese or overweight adults with mild OSA	The RCT included 72 obese or overweight participants that were diagnosed with mild OSA in a sleep clinic that was placed in either the intervention or control group both groups had baseline sleep study recordings and anthropometric data Intervention group: • N= 35 • Completed the 1-year follow-up trial with a 12-week weight	The RCT included 3-month and 1-year follow-up visits that measured sleep recordings and anthropometric data	The intervention group had a mean WL of 10.7 kg and the control group had a mean WL of 2.4 kg. **Intervention group**: At the 3-month follow up • Mean AHI 5.3 events per hour • 22 out of the 35 participants cured of OSA At 1-year follow-up • Mean AHI 6 events per hour • 22 out of 35 participants	Level 2 RCT	Intervention group with higher BMI when compared to the control group Both groups with mean age 50 to 51 and may not represent younger patients with OSA Participants predominately male and may not represent female patients with OSA	This article supports WL in patients with mild OSA can: • Significantly reduce AHI events • Improve SaO2 levels and QOL • Reduce incidence of DM and HTN • Enable patients to not require medications to control DM and HTN The greater the WL the greater the improvement of OSA

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		reduction program • Mean age51.8 years • Male 26 • Mean BMI 33.4 • Baseline AHI events 10 per hour • Baseline mean oxygen saturation 93.8% Control group: • N=37 • Received a single general dietary and exercise counseling session • Mean age 50.9 years • Male 27 • BMI 31.4		continued cure for OSA • Significant improvement in mean SaO2 and quality of life (QOL) • Significant reduction serum insulin and 2/4 participants able to discontinue DM medication with a weight reduction of 5-14 kg • Reduction in HTN: 5 out of 18 patients with HTN terminated			Obesity is the most important RF for OSA OSA may predispose the patient to weight gain since sleep fragmentation is associated with reduced leptin levels and increased ghrelin levels thereby increasing hunger and appetite reinforces need to promote WL to prevent further weight gain induced by OSA OSA patients have a low compliance with CPAP that reinforces need to promote WL

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		• Baseline AHI 9.3 per hour • Baseline mean oxygen saturation 94.3%		medication **Control group**: At the 3-month follow up • mean AHI 8.1 events per hour • 12 of the 37 participants cured of OSA 1-year follow-up • Mean 9.6 AHI events per hour • Less improvement of SaO2 and QOL when compared to			to cure OSA to prevent comorbidities that result from OSA

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				intervention group			
Article 10 Hudgel, D. W., Kapur, V. K., Lettieri, C. J., Naughton, M. T., Owens, R. L., Pepin, J. D., . . . Gurubhagavatula, I. (2018). The role of weight management in the treatment of adult obstructive sleep apnea: An official american thoracic society clinical practice guideline. *American Journal of Respiratory and Critical Care Medicine, 198*(6), E70-E87. doi:http://dx.doi.org.ezproxy.liberty.edu/10.1164/rccm.201807-1326ST	The purpose of the guideline is to provide evidence-based recommendations for the management of overweight or obesity in patients with OSA: (1) review evidence of the impact of WL interventions on OSA severity, quality of life (QOL), and associated comorbidities (2) provide specific recommendations for weight management with OSA who	The literature was collected, synthesized, and peer reviewed using many databases, and evaluated using the Grading of Recommendations, Assessment, and Development and Evaluation by the American Thoracic Society	Literature review employed databases consisting of MEDLINE, Excerpta Medica Database, CCINAHL, Scopus, CENTRAL, CDSR, NHS Economic Evaluations Database, DARE, and HTA Key words included OSA, obesity, weight loss interventions, drug therapy or surgery, exercise therapy, nutritional therapy or diet	Patients with OSA showed significant reduction of OSA severity, reversal of associated comorbidities, which is based on a meta-analysis of 34 RCTs • Amount of WL is associated with fewer AHI events; for example, the greater the WL the fewer the AHI events It is imperative to check BMI routinely to ensure the patient is	Level 1 Guideline	Some of the study samples used to develop the guidelines contained small sample sizes, short study durations, and high attrition rates. Not all the studies evaluated outcomes relevant to patients with OSA Not all the studies were listed in a table, rather were used to support the content of the literature	The guideline states that obesity and overweight is a common and reversible risk factor (RF) for OSA. WL interventions are associated with improvements in OSA's severity, cardiometabolic comorbidities, and QOL Patients' BMI must be assessed regularly to incorporate weight management strategies into the routine treatment of

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	are overwieht or obese		Searches were not limited to date or language	diagnosed with obesity or overweight to institute a WL regimen in a timely manner • Research shows that many providers do not routinely diagnose patients with obesity, which promotes a longer duration of time that patients go without obesity treatment predisposing them to many comorbidities			obesity or overweight Providers must refer patients with overweight or obesity for a WL program The 5A Model is effective and should be used when talking with obese or overweight patients The scholarly project will educate practitioners on how to identify an obese patient, discuss these findings with the patient, and how to follow up using a referral for WL while

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				• Even when obesity is diagnosed most providers do not refer patients for a WL program WL reduces comorbidities associated with obesity that include OSA, Type II diabetes mellitus (T2DM), and hypertension (HTN)			using the 5 A's Model Discussion with obese patients about obesity diagnosis is generally well received; the terminology that should be used includes weight problem, excess weight or adiposity-based chronic disease ; terminology that should be excluded include fatness, excess fat, large size, obesity, and heaviness
Article 11 Hudgel, D. W. (2018). Critical review: CPAP and weight management of obstructive sleep apnea cardiovascular	To educate clinicians about the advantages of incorporating	Clinical review using current literature to educate	Databases to collect the information were taken from Medline,	WL improves OSA severity and a RCT with 72 participants	Level 5 Qualitative Studies7	OSA status and weight change variables are not included in	This article states that obesity is a reversible RF for OSA and

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co-morbidities. Sleep Medicine Reviews, 37, 14–23. https://doi-org.ezproxy.liberty.edu/10.1016/j.smrv.2016.12.001	weight management for OSA patients with overweight or obesity into the treatment plan	providers about the benefits of weight reduction with patients having overweight and obesity	PubMed, and Scopus to identify systematic reviews, meta-analysis, RCTs, and cohorts Used 5 RCTs to describe the effect of WL on OSA severity	showed WL enabled the discontinuation of continuous positive airway pressure (CPAP) treatment due to resolution of OSA severity Another RCT with 264 participants showed that WL improved OSA severity for four years even with gradual weight gain; the AHI was 20 times more likely to drop below four per hour when compared to the control group (five or more AHIs per hour is an		all the studies in the literature review More research is needed to determine the effects of WL on mortality in OSA populations	the more obese a person becomes the more severe the OSA Patients with OSA are able to reduce severity or reverse effects with WL and may even not require CPAP therapy WL has been shown to reduce, reverse, or prevent comorbidities associated with obesity

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				indicator of OSA) A RCT with 33 participants found that a 13% WL is correlated with and improved desaturation index, reduced serum insulin levels, and less daytime sleepiness A weight gain of 15% or greater increases mortality over 5 to 9 year period			
Article 12: Kuna, S. T., Reboussin, D. M., Borradaile, K. E., Sanders, M. H., Millman, R. P., Zammit, G., . . . Sleep AHEAD Research Group of the Look AHEAD Research Group. (2013). Long-term effect of weight loss on obstructive sleep apnea	To Determine if the benefit of WL on OSA severity is maintained at 4 years	RCT with 264 participants with T2DM and OSA, both groups: • Mean age of 61.3 years • BMI 36.6	RCT that followed patients for 1, 2, and 4 years	The intensive lifestyle intervention group's mean WL was 10.7 kg after 1 year, 7.4 kg at 2 years, and 5.2 kg at 4 years	Level 2 RCT	37.5% attrition rate at 4 years due to participants refusing to follow up at this point Most of the patients were	This study reinforces the need for WL regimens In the OSA population to reduce severity The WL group had a higher

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severity in obese patients with type 2 diabetes. *Sleep*, *36*(5), 641-649A. doi:10.5665/sleep.2618		• Caucasian 73.4 • Females 60% The intervention group had an intensive lifestyle intervention (ILI) that included a behavioral WL program The control group received diabetes support and education (DSE)		Control group had less than a 1 kg WL at each time interval Change in AHI was related to the amount of WL; example, more WL equated to less AHI events Remission of OSA at 4 years was 5 times more common with the intensive lifestyle intervention equaling 20.7% even with a 50% weight regain when compared to the diabetes support and education at 3.6%		elderly and results may not be generalized to younger patients with OSA	OSA remission rate and WL at 4 years even when 50% had regained some weight AHI events were reduced with more WL

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Article 13 Araghi, M. H., Chen, Y. F., Jagielski, A., Choudhury, S., Banerjee, D., Hussain, S., Thomas, G. N., … Taheri, S. (2013). Effectiveness of lifestyle interventions on obstructive sleep apnea (OSA): systematic review and meta-analysis. *Sleep*, *36*(10), 1553-62, 1562A-1562E. doi:10.5665/sleep.3056	To assess the impact of weight loss through diet and physical activity on measures of OSA that include AHI events and oxygen desaturation index	Systematic review and meta-analysis that used 21 primary articles that included 7 RCTs and 14 uncontrolled before-and-after studies BMI average 29-54.6 AHI average 10 to 66.5 per hour	Systematic Review and meta-analysis and used Medline, Opengrey, Zetoc, NLM Gateway, EMBASE, CINAHL from 1982-2011	Weight reduction programs are associated with a decrease in A RCT showed that AHI was reduced by 6.04 to 12.6 per hour with WL Many studies showed significant reduction in oxygen desaturation by at least 18.91% after WL Many RCTs showed that WL by 10% to 16% can reduce AHI events by 20 to 50%	Level 1	Some of the studies occurred in Finland Some of the studies demonstrated poor quality	The study supports the scholarly project since OSA is strongly associated with obesity and WL efforts reduce AHI events, improve desaturation index, and cardiometabolic outcomes
Article 14 Swift, J., Choi, E., Puhl, R. & Glazebrook, C. (2012).	To educate healthcare professionals	1036 self-selected participants	Self-completed questionnaire collected data	When referring to obese patients	Level 6	Though the desired and undesired	This article helps frame obesity as a

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Talking about obesity with clients: Preferred terms and communication styles of UK pre-registration dietcians, doctors, and nurses. *Patient Education and Counseling, 91*(2), 186-191. doi:10.1016/j.pec.2012.12.008	about how to engage in discussions with obese people about obesity, initiating discussions about weight, and confidence about WL consultation	that consisted of nursing students, dietician students, and medical students that voluntarily attended a study session about obesity Females: 78.7% Mean age: 20.3 years Median BMI: 21.6	on demographics, preferred terms, beliefs about initiating discussions, and confidence and training needs from students in the areas of dietary, nursing, and medical	the preferred words included BMI, unhealthy BMI, weight, and unhealthy body weight 48.8% agreed that the provider should raise the issue of a person's obesity even if it is unrelated to the appointment In contrast, undesirable words included fatness, excess fat large size, and heaviness		terms to address obesity with patients reflect other sources, came from the participants and not from the obese population The participants had a normal BMI and may not be able to relate to the obese population	problem when initiating a discussion about bodyweight and is helpful to educate the sleep study clinicians on the desired and undesired terms used to describe obesity most obese patients accept and welcome providers referring to their weight as unhealthy It is beneficial for the HCP to describe the relationship between the degree of overweight and the risk to health

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							Patients are more likely to desire and attempt to lose weight if they are told by a physician that they are overweight
Article 15 Fitzpatrick, S. L., Wischenka, D., Appelhans, B. M., Pbert, L., Wang, M., Wilson, D. K. . . . Society of Behavioral Medicine. (2016). An evidence-based guide for obesity treatment in primary care. *The American Journal of Medicine, 129*(1), 115.e1-e7. doi:10.1016/j.amjmed.2015.07.015	To present a model of obesity management in primary care based on the 5 A's Model that providers (1) address patients' psychosocial issues (2) deliver counseling (3) connect patients to community resources to assist in healthy lifestyles	Clinical Guidelines geared to providers in the primary care setting based on RCTs and systematic reviews	Clinical guidelines that reference RCTs and systematic reviews	Many clinical trials show that a WL of 8-10% cause reductions in DM, HTN, CVD, and lipid management 30% of primary care providers screen and counsel obese patients on WL Due to time constraints efforts to address obesity should be brief,	Level 1 Clinical guidelines	The clinical trials and systematic reviews that were reference in the literature were not depicted in a figure The databases and key words were not included on how the author obtained the literature that was used	Providers are directed to screen patients' BMI regularly for obesity or overweight to promptly provide or refer the patient for WL and intensive behavioral counseling bese patients should regularly be screened for comorbid conditions associated

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				targeted, and effective			with excess weight Studies show that each additional 5A that are used within the model increases the odds of patients increasing their motivation to lose weight When interacting with patients it is best to use the terms weight or BMI
Article 16 Mitchell, L. J., Davidson, Z. E., Bonham, M., O'Driscoll, D. M., Hamilton, G. S., & Truby, H. (2014). Weight loss from lifestyle interventions and severity of sleep apnoea: A systematic review and meta-analysis. *Sleep*	To establish if WL by lifestyle interventions that include diet and exercise is useful to treat OSA	Two systematic reviews and eight RCTs were used Overall, 75% of the participants in	Literature was searched between 1980 and February 2012 and included participants who had OSA, were obese or overweight,	The systematic reviews both show that WL can be achieved by lifestyle modification that improve	Level 1	Many of the studies had a small number of participants 75% of the studies were male	Excess body weight is one of the strongest RFs for OSA WL improves the severity of OSA

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Medicine, 15(10), 1173–1183. doi:10.1016/j.sleep.2014.05.012		the studies were males	and who had undergone lifestyle interventions to improve OSA Databases that include MEDLINE, Cochrane Library, EMBASE, CNAHL, Web of Science, and Scopus were used to access the literature	the severity of OSA Overall results of the research shows reduced AHI by 16.09 events and reduced oxygen saturations by more than 4% Long term follow up at 4 years showed continued WL and reduced OSA severity			Long-term follow up with WL at 4 years shows continued WL and reduced OSA severity
Post, R. E., Mainous, A. G., Gregorie, S. H., Knoll, M. E., Diaz, V. A., & Saxena, S. K.(2011). The influence of physician acknowledgment of patients' weight status on patient perceptions of overweight and obesity in the United States. *Arch Intern Med., 171*(4), 316–321.	To evaluate whether patient reports of physician acknowledgment of overweight patients' weight status are associated with the patients' perceptions of	Analysis of data from 7790 participants with a BMI of at least 25 between the ages of 20 to 64 Overweight: 5474	Cross-sectional study analysis of the 2005 to 2008 National Health and Nutrition Examination Survey (NHANES) data	Participants reported that their physician acknowledged their overweight/ obese status: • Overweight 45.2% • Obese 66.4%	Level 5 Descriptive Studies	The data did not include if follow up counseling took place The percentage of those who desired weight loss after they were told of their overweight or	The data supports that many providers are not telling their patients if they are overweight or obese • Delay of intervention to reduce

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
doi:10.1001/archinternmed.2010.549	their own weight and desire to lose weight	• Males: 52.8% • Females: 47.2% • High school: 17.8 • College level: 82.2% • White 66.7% • Black: 13.3 • Married 68.4% Obese: 2874 • Male 46.5% • Highschool 18.6% • College 81.4% • White 66.1% • Black 15.4% • Married 68.4%	The NHANES combines questionnaires with physical examination finding and laboratory samples from participants	Overweight and obese patients had an increased likelihood to perceive themselves as overweight if they were told by their provider that were overweight • Overweight: 94% • Obese: 96.7% weight perceptions Participants who reported that their provider told them they were overweight or obese were more likely to desire to lose weight and		obese status was not included	weight occurs • Patients are more likely to view themselves as overweight or obese if their provider tells them of weight status • Patients are more likely to exhibit a desire to lose weight if their provider alerts them of their weight status

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				attempt to lose weight At least 33% of obese patients (23 million) and approximately 45% (74 million) of overweight patients were not told by their provider of their weight status			
Article 18 Carneiro-Barrera, A., Díaz-Román, A., Guillén-Riquelme, A., & Buela-Casal, G. (2019). Weight loss and lifestyle interventions for obstructive sleep apnoea in adults: Systematic review and meta-analysis. *Obesity Reviews: An Official Journal of the International Association for the Study of Obesity*. doi:10.1111/obr.12824	To determine if healthy lifestyle interventions that include diet, exercise-training, and sleep hygiene are effective to reduce the severity of OSA	The systematic review and meta-analysis included 1420 participants • Control: 300 • Intervention: 441 from RCT and 580 from treated before-and-after studies	The systematic search included CINAHL, ProQuest, Psicodoc, Scopus, and Web of Science with dates up to April 2018	With lifestyle modification including WL: RCT mean reductions of AHIs 9.11 with a mean AHI at baseline 30.24 AHI events Before-and-after studies with a reduction of 8.36 AHIs	Level 1	Approximately 74% of the participants were males Limited number of RCTs that fit inclusion and exclusion criteria Heterogeneity of participant characteristics amongst the studies	AHI events, ODI significantly reduced with lifestyle modifications including WL 58% of patients with moderate to severe OSA is linked to obesity 10% weight gain associated

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		• Women 26.7% • Mean age: 52.31 years from 35 studies • RCTs 13 • Uncontrolled 22		with a baseline of 31.36 AHI events Oxygen desaturation Index (ODI) • RCTs reduced by 11.23% • Before-and-after studies reduced by 11.14% Excessive daytime sleepiness (EDS) reduced by • RCTs3.05 • Before and after studies 2.33			with an increase of 32% AHI events while a 10% WL associated with 26% reduction AHI events
Article 19 Ward, S. H., Gray, A. M., & Paranjape, A. (2009). African Americans'	To determine how obese, African American	Qualitative Study with 43 African American	Qualitative study to that collected information	The participants did not like the term obese and	Level 6	Qualitative measures do not allow for	This article highlights that participants do not like the

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
perceptions of physician attempts to address obesity in the primary care setting. *Journal of General Internal Medicine*, *24*(5), 579-84. doi:10.1007/s11606-009-0922-z	(AA) patients perceive providers when treating their obesity and to identify provider behaviors that facilitate and hinder WL attempts	participants in the primary care setting Obese men and women between the ages of 18 to 65 years were recruited from two internal medicine offices Male: 37% Female: 63% Age: 30-64 with mean of 50 years old BMI 30.2 to 57.7 with a median of 38.6	from the participants with open ended questions	preferred that providers not use it since it carried negative connotations and was perceived to be associated with discrimination Most of the patients perceived their provider as approaching obesity with a lack of respect, non-sincerity, and judgmental and was reported to be counterproductive to WL efforts Participants reported appreciation when their provider		consistent reproducibility All participants were AAs, which lacks ethnic diversity	term obesity and a diagnosis of obesity should include interventions to reduce weight The sleep clinic referrals will have the diagnosis of obesity with an intervention to reduce weight AAs are disproportionately affected by obesity with a prevalence of 45% as compared by Caucasian adults at 30% AA achieve less WL when compared to Caucasians Experts have called for

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				acknowledged WL efforts Participants complained if their provider diagnosed them with obesity without ways to reduce weight			interventions to increase providers' knowledge about obesity treatment to improve obesity management efforts
Article 20 National Institute for Health and Care Excellence (NICE). (2014). Identification, assessment, and management of overweight and obesity: Summary of updated NICE guidance. Retrieved from https://www.nice.org.uk/guidance/cg189	To provide recommendations for providing care to prevent and manage overweight and obesity	NICE commissioned the National Clinical Guideline Center. The Center formed a multidisciplinary group that includes HCPs and researchers to develop the guidelines and PICO questions to provide framework and	Systematic literature search to identify clinical evidence that was relevant to the PICO questions by using databases that include MEDLINE, Embase, and The Cochrane Library. Most of the studies used were RCTs	Identify and classify BMI regularly to establish an obesity or overweight diagnosis and assess for comorbidities Offer long-term follow – up care by a trained professional Lifestyle modifications that include diet changes and physical	Level 1	The guidelines are geared toward individuals in the UK	This article highlights the importance to identify and classify BMI and to follow-up with those who are overweight or obese The scholarly project will identify patients with a BMI at or greater than 30 and refer for follow-up with

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		search for literature		exercise are treatment of choice to treat obesity or overweight			their PCP for a WL plan
Article 21 Rose, S. A., Poynter, P. S., Anderson, J. W., Noar, S. M., & Conigliaro, J. (2013). Physician weight loss advice and patient weight loss behavior change: a literature review and meta-analysis of survey data. *International Journal Of Obesity (2005)*, *37*(1), 118–128. doi:10.1038/ijo.2012.24	To examine the impact of prover WL counseling on actual changes in patient behavior	The literature review and meta-analysis included 207,226 participants found in 12 studies that met criteria consisting of PCP advice regarding patient overweight and changes in behavior compared with patients not receiving advice The participants were classified as either overweight or obese	The literature review and meta-analysis used the databases that include PubMed, Web of Science, PsycINFO, Cochrane Library, ERIC, Dissertations and Theses, and World Cat published through November of 2011	PCP advice in 11 studies showed positive effect of PCP advice on patient engagement in WL showed a WL efforts with an Odds ratio at 3.85 Additional WL was found in patients whose providers exhibited reflection or understanding of the patient's statements	Level 1	Small number of studies in the meta-analysis Break down of mean age, gender, and BMI not stated	The research article consistently shows that PCP advice on WL appears to have a significant impact on patient attempts to change behaviors related to their weight Providers should address WL with their overweight and obese patients Overweight or obese patient pursuing intentional WL may reduce the

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
							rate of morbidity and mortality associated with excess weight
Article 22 Phillips, K., Wood, F., & Kinnersley, P. (2014). Tackling obesity: The challenge of obesity management for practice nurses in primary care, *Family Practice*, *31*(1),51–59. doi:10.1093/fampra/cmt055	To explore how practice nurses manage obesity in primary care and how they identify good practice and barriers to effectively manage obesity	A semi-structured face-to face interviews were conducted with 18 participants who were practice nurses in primary care Participants • Female 100% • 28% NPs • 22% previously managed weight loss centers • 44% were familiar with brief	A semi-structured face-to-face interview	Higher likelihood for nurses to discuss weight related issues if the patient had excess weight and had obesity related-comorbidities 15 out of 18 nurses stated they would not discuss weight if patient presented with a minor ailment unrelated to obesity due to time constraints and if not able to line weight to	Level 6	Entire sample were female and related to the nursing profession Qualitative measures were used, which does not provide reproducibility in the results Interviews methods to extract information may promote bias as the interviewee wanting to be seen in a positive image	This research article highlights the importance on how a practice must have consistency on managing obesity The sleep center will have consistency in managing by referring patients with obesity to their primary care provider based on BMI and not on the number of comorbidities

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		interventions		presenting problem Nurses were unclear if they should target obese patients without comorbidities due to unclear facility guidelines on how to manage obesity			
Article 23 Qaseem, A., Holty, J.-E. C., Owens, D. K., Dallas, P., Starkey, M., & Shekelle, P. (2013). Management of obstructive sleep apnea in adults: A clinical practice guideline from the American College of Physicians. *Annals Of Internal Medicine*, *159*(7), 471–483. Retrieved from http://ezproxy.liberty.edu/login?url=http://search.ebscohost.com/login.aspdirect=true&db=mnh&AN=24061345&site=ehost-live&scope=site	To present current evidence and provide clinical recommendations on how to manage OSA	The guideline is based on a systematic evidence review sponsored by Agency for Healthcare Research and Quality (AHRQ) Intervention group: WL interventions Control group: (1) education about	The guideline is based on literature from 1966 to September 2010 using MEDLINE, The Cochrane Central Register of Controlled Trials, and the Cochrane Database of Systematic Reviews 3 RCTs were used to	The American College of Physicians Guidelines recommends that all overweight and obese patients diagnosed with OSA should receive treatment on WL Intervention group	Level 1	One of the RCTs with low number of participants Gender, age, and BMI mean not broken down	The study states that all patients with OSA should have a treatment plan to reduce weight and is strong evidence Must routinely check BMI to assess for overweight or obesity to begin specific

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		comorbid diseases (2) usual diet (3) general counseling on diet and exercise only	determine how WL interventions vs. the control group impacted OSA with baseline of 9 to 37 AHI events per hour and an average BMI of 30 or greater Follow up ranged from 2.3 to 12 months	• WL 10.7 to 18.7kg • AHI scores reduced by 4 to 23 events per hour in all 3 studies • 5% increase in Sao2 • Four-fold increase in the odds of OSA being cured in a one year study due to WL Control group • WL of 0.6 to 2.4 kg			OSA treatments OSA rates are increasing and correlated with the escalating obesity prevalence Even though CPAP is standard therapy many patients are not compliant with treatment WL programs reduce severity of OSA and may be curative
Article 24 Garvey, W. T., Mechanick, J. I., Brett, E. M., Garber, A. J., Hurley, D. L., Jastreboff, A. M. . . . Plodkowski, R. (2016) American Association of Clinical	To provide comprehensive recommendations to care for pateints with	To develop the guidelines experts searched for strong evidence and identified	Systematic search for strong literature by identifying all RCTs and meta-analysis	Overweight and obesity screening and classification must occur at least annually by using either	Level 1	RCTs may have had a small number of participants Breakdown absent to	Data from the National Health and Nutrition Examination Surveys show that 2 out of 3

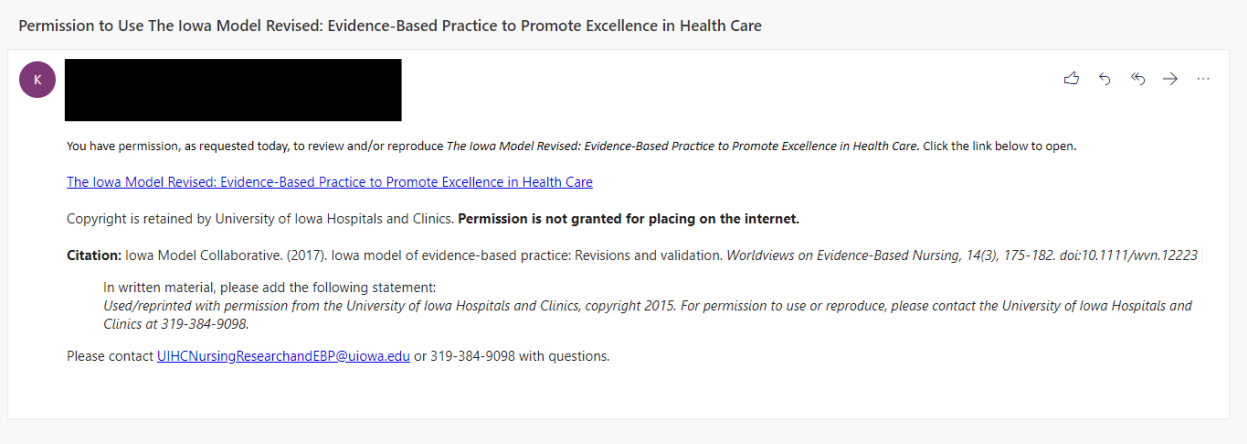
Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
Endocrinologists and American College of Endocrinology comprehensive clinical practice guidelines for medical care of patients with obesity. *Endocrine Practice, 22*(3), 1-203. doi:10.4158/EP161365.GL	overweight or obesity	many RCTs, meta-analysis, some cohort and case-controlled studies	using the PubMed database The Task force reviewed, synthesized, and rated evidence	a BMI or waist circumference Patients with overweight and obesity having OSA should be treated with WL therapy including lifestyle interventions with a WL goal of 7-11% WL has been shown to reduce or reverse comorbid diseases associated with obesity and overweight All patients with overweight or obesity should be evaluated for OSA		stratify the gender, age, and BMI of participants	American adults have overweight or obesity while 1 out of 3 adults have obesity Patients with OSA that have obesity or overweight should be treated with WL therapy with a goal of 7-11% WL The BMI will be assessed and classified, and obese patients will have a referral for PCP follow-up for a WL plan Suggested therapy based on BMI

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
				during medical history			
Article 25 Ng, S. S. S., Chan, R. S. M., Woo, J., Tat-On Chan, Cheung, B. H. K., Sea, M. M. M., … Yip. (2015). A Randomized Controlled Study to Examine the Effect of a Lifestyle Modification Program in OSA. *CHEST*, *148*(5), 1193–1203. https://doi-org.ezproxy.Liberty edu /10.1378/chest.14-3016	To assess the effects of WL through a lifestyle modification program on patients with moderate to severe OSA	The RCT contained 104 participants with moderate to severe OSA who were diagnosed with a portable home sleep monitoring unit **Intervention** group: • N=61 • Mean age 51.4 • Male: 48 • BMI 30.2 • Baseline AHI events 37-43 per hour **Control**: • N=43 • Mean age 52	The RCT intervention included a dietician-led lifestyle modification program (LMP) and the control group to received usual OSA care for 12 months The focused outcome was to compare the AHI events at baseline to values at 12 months, which were assessed by a portable home sleep monitoring unit	Intervention: • Had 16.9% fewer AHI events at 12 months when compared to baseline results • BMI reduced by 6% Control: • Increase of AHI events of 0.6% of body weight when compared to baseline values • BMI reduced by 2%	Level 2	The participants were had a Chinese ethnicity, which may render different results to other ethnicities	This article states that a reduction in BMI in individuals with excess weight had 16.9% fewer AHI events at 12 months when compared to baseline A 10% weight gain is associated with 32% increase in AHI events More WL is associated with more significant reductions in AHI events This article states that a healthy diet

Article Title, Author, etc.	Study Purpose	Sample (Characteristics of the Sample: Demographics, etc.)	Methods	Study Results	Level of Evidence (Use Melnyk Framework)	Study Limitations	Would Use as Evidence to Support a Change? (Yes or No) Provide Rationale.
		• Male 30 • BMI 30.5 • Baseline AHI events 42.5 per hour					and exercise to promote WL may prevent, correct, or reduce severity for OSA in obese or overweight patients Obesity is the strongest risk factor for OSA

Appendix B

Consent to use IOWA Model



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

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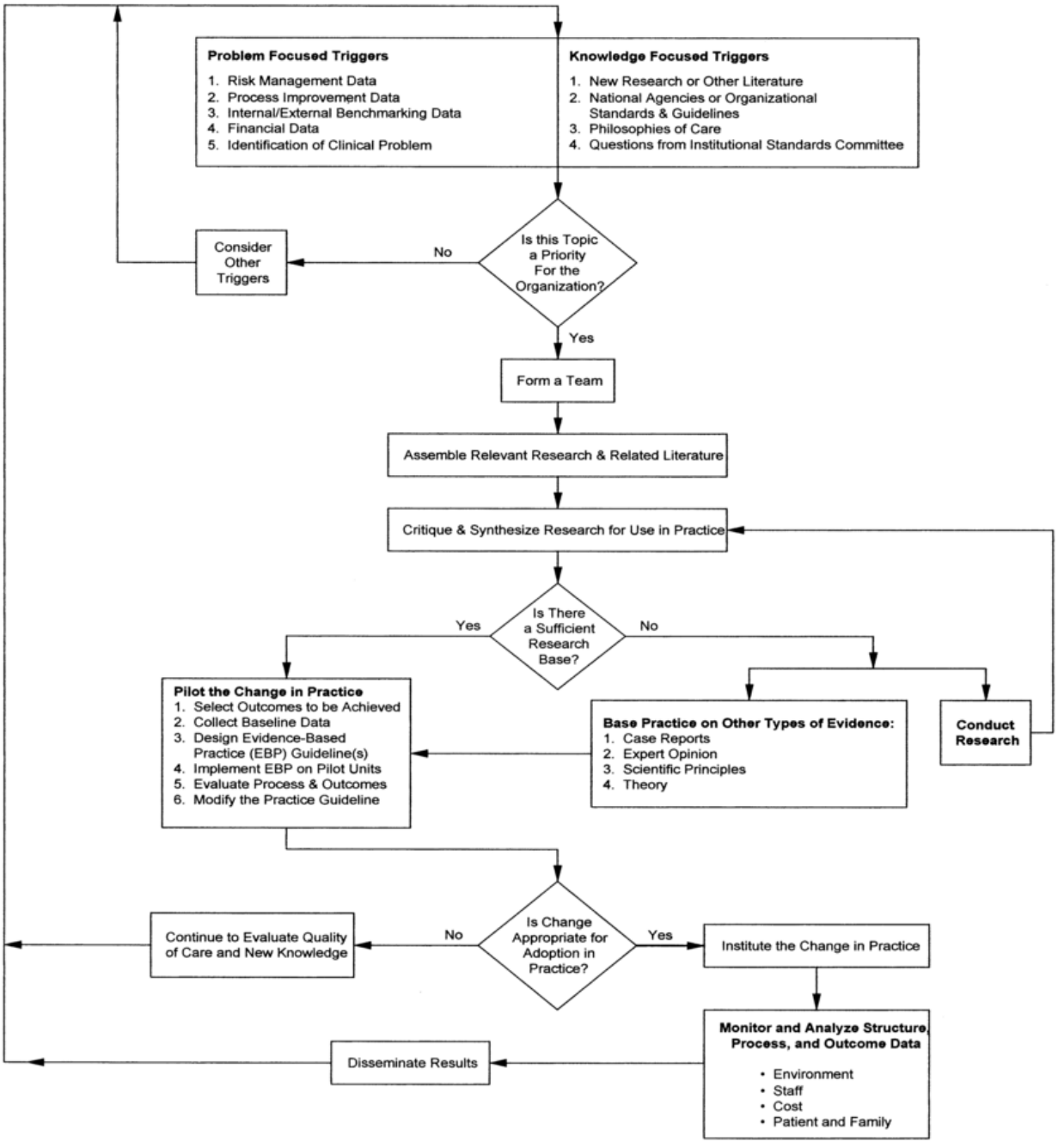
Please contact UIHCNursingResearchandEBP@uiowa.edu or 319-384-9098 with questions.

Appendix C

IOWA Model of Evidence-Based Practice



(Research Gate, 2019)

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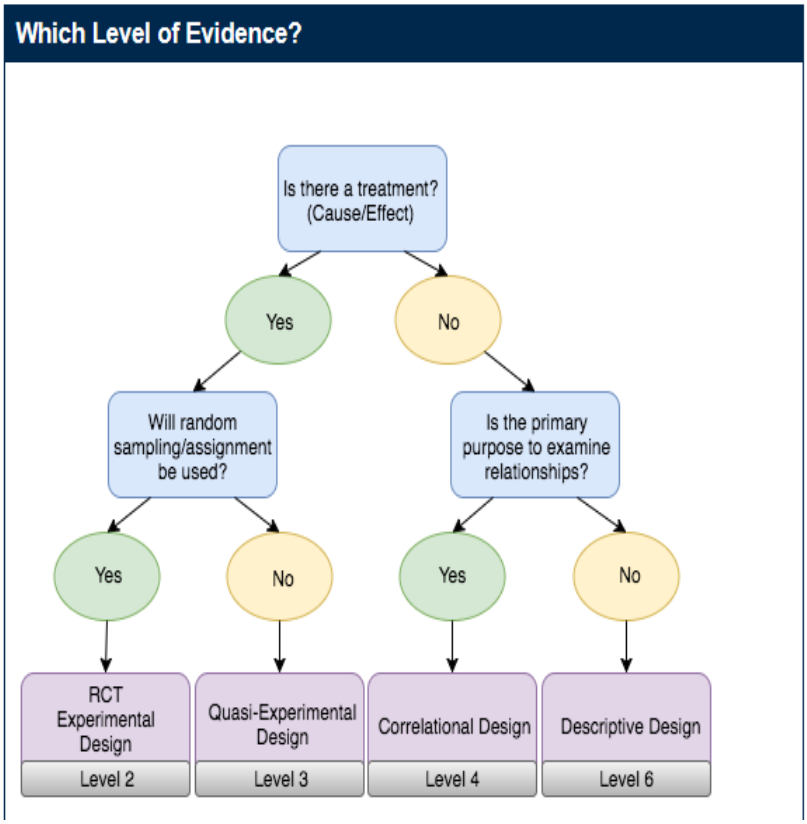
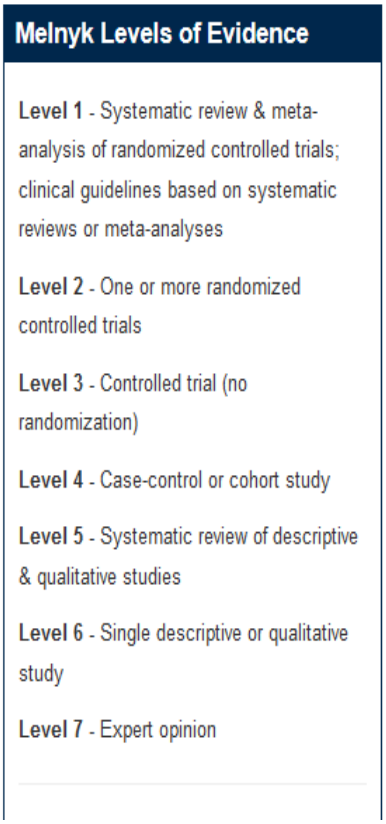
Appendix D

Levels of Evidence





(University of Michigan, 2018)

Appendix E

Sleep Study Letter of Support

MISSION HEALTH SYSTEM

March 19, 2019

Attention: IRB
Liberty University
Lynchburg, VA

IRB Members:

Mrs. Cindy Thomas, BSN, RN, a Liberty University Doctor of Nursing Practice Student, has proposed to conduct her Doctor of Nursing Practice Scholarly Project: An Educational Intervention to Raise the Awareness about Obesity, the Importance of Follow-Up, and the Need to Utilize Recommended Strategies and Interventions Among Advanced Care Practitioners in a Sleep Center Setting.

Mission Health Sleep Center is committed to providing the most advanced, comprehensive care for our patients, facilitated by the pursuit of quality improvement. Mrs. Thomas' Doctor of Nursing Practice Scholarly Project aligns with our commitment that every patient receives the ultimate quality health care.

Mission Health Sleep Center is pleased to support Mrs. Thomas' Doctor of Nursing Practice Scholarly Project: An Educational Intervention to Raise the Awareness about Obesity, the Importance of Follow-Up, and the Need to Utilize Recommended Strategies and Interventions Among Advanced Care Practitioners in a Sleep Center Setting.

Please feel free to contact me if I can be of further assistance.

Respectfully,

[redacted]

[redacted]

[redacted]

Appendix F

IRB Approval Documentation

LIBERTY UNIVERSITY.
INSTITUTIONAL REVIEW BOARD

May 13, 2019

Cindy Thomas
IRB Application 3805: An Educational Intervention to Raise Obesity Awareness, the Importance of Follow-Up, and the Need to Utilize Recommended Strategies and Interventions Among Advanced Care Practitioners in a Sleep Center Setting

Dear Cindy Thomas,

The Liberty University Institutional Review Board has reviewed your application in accordance with the Office for Human Research Protections (OHRP) and Food and Drug Administration (FDA) regulations and finds your study does not classify as human subjects research. This means you may begin your research with the data safeguarding methods mentioned in your IRB application.

Your study does not classify as human subjects research because evidence-based practice projects are considered quality improvement activities, which are not considered "research" according to 45 CFR 46.102(d).

Please note that this decision only applies to your current research application, and any changes to your protocol must be reported to the Liberty IRB for verification of continued non-human subjects research status. You may report these changes by submitting a new application to the IRB and referencing the above IRB Application number.

If you have any questions about this determination or need assistance in identifying whether possible changes to your protocol would change your application's status, please email us at irb@liberty.edu.

Sincerely,

[redacted]

[redacted]

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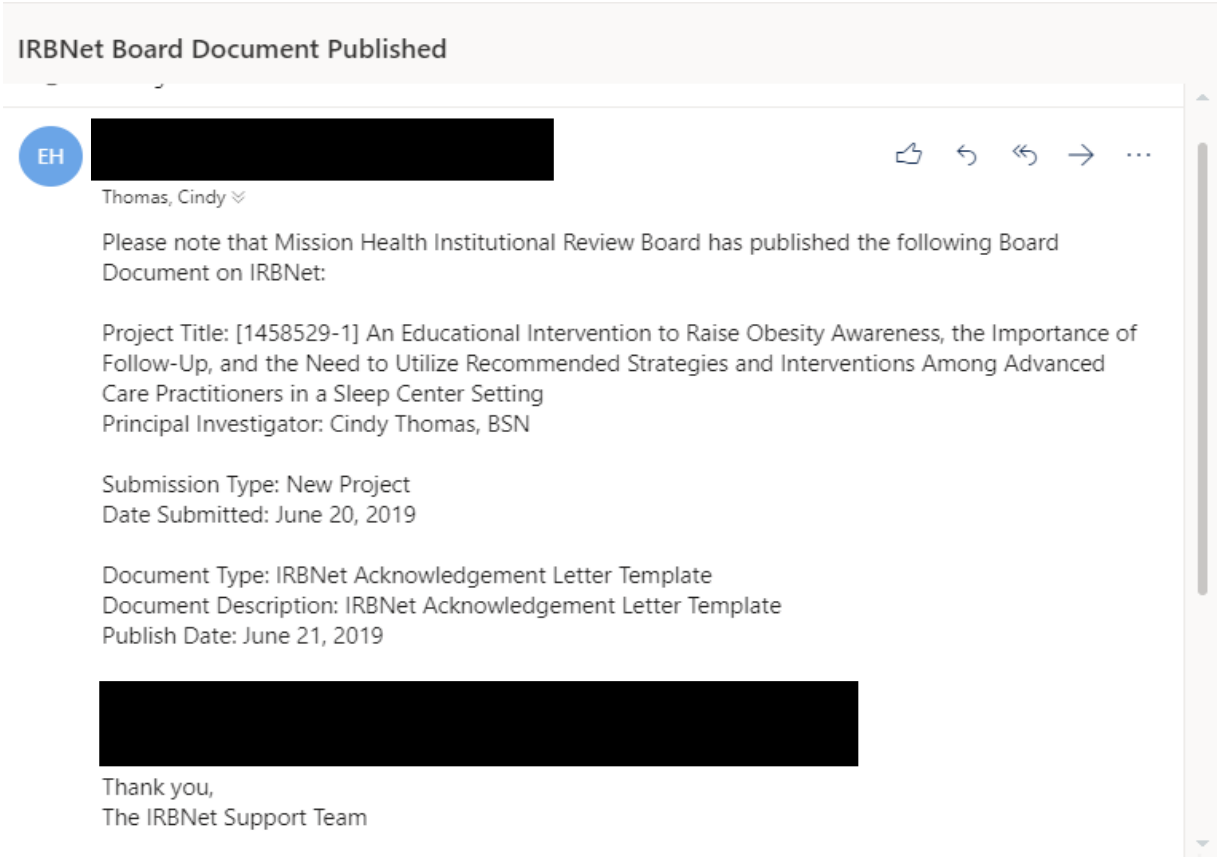
Appendix G

Mission Health IRB Support



IRBNet Board Document Published

EH [redacted]

Thomas, Cindy

Please note that Mission Health Institutional Review Board has published the following Board Document on IRBNet:

Project Title: [1458529-1] An Educational Intervention to Raise Obesity Awareness, the Importance of Follow-Up, and the Need to Utilize Recommended Strategies and Interventions Among Advanced Care Practitioners in a Sleep Center Setting
Principal Investigator: Cindy Thomas, BSN

Submission Type: New Project
Date Submitted: June 20, 2019

Document Type: IRBNet Acknowledgement Letter Template
Document Description: IRBNet Acknowledgement Letter Template
Publish Date: June 21, 2019

[redacted]

Thank you,
The IRBNet Support Team

Appendix H

Primary Care Provider Referral for Weight Loss

You have been diagnosed with obstructive sleep apnea (OSA). Many times, OSA is correlated with excess weight, which makes it hard for you to breathe. At night, inefficient breathing causes you to stop breathing making your heart work harder, oxygen levels to decrease, and sleep to become interrupted. Untreated OSA may contribute to the onset of other chronic diseases. Though the continuous positive airway pressure (CPAP) machine is necessary, overtime you may be able to completely resolve or reduce OSA issues by a weight loss program. In addition, weight loss will also help to reduce, prevent, and reverse other diseases linked to excess weight that include diabetes, heart disease, and stroke to name a few. Please follow up with your primary care provider (PCP) to find a weight loss program to best suit your needs. At Mission Sleep Center, we want the best for you and are always looking for ways to improve your health.

Additional resources worth looking into include weight loss centers to achieve and maintain an ideal weight. Weight loss centers provide individualized medical and surgical guidance to lose weight in a safe manner. Weight loss centers are associated with successful results and partner with you and your PCP to achieve weight loss goals and healthy lifestyles.

Appendix I

Post-Survey

1. Did you find the obesity educational intervention helpful?
    a. Yes
    b. No

    If yes, please list how it has changed your practice.

    _____
    _____
    _____
    _____

2. What aspect of the obesity educational intervention did you find most useful? Circle all that apply.
    a. Learning about the general aspects of obesity
    b. Learning about the 5 A's Model
    c. Learning about the preferred terminology when addressing obesity
    d. None of the above
    e. Other_____
    _____
3. In the last month, have you utilized any of the interventions to address obesity in your practice? Circle those that apply
    a. Written referral
    b. 5 A's Model
    c. Preferred terminology when addressing obesity
    d. None of the above
    e. Other_____
4. Do you plan to continue integrating the interventions and strategies into practice for at least a year?
    a. Yes
    b. No

    If yes, please elaborate on the interventions and strategies you plan to use.

_____
_____
_____
_____

Appendix J

Recruitment Letter to Advanced Providers

April 16, 2019

Dear Advanced Practitioners,

As a graduate student in the School of Nursing at Liberty University, I am conducting an evidence-based scholarly project for a Doctor of Nursing Practice (DNP) degree. The purpose of my project is to raise awareness of advanced practitioners in a sleep center setting by using the 5 A's Model, about obesity and weight loss (WL) resources to determine if this intervention will increase the number of referrals of obese patients to a WL resource. I am writing to invite you to participate in my project.

You are eligible to participate in this project if you are 18 years of age or older, an advanced practitioner that discharges patients from the sleep center, and are willing to participate in the project. It should take approximately 30 minutes for you to complete the project requirements, which includes completing an educational intervention and a post-survey. One month after the educational intervention, you will be asked to complete a post-survey, which will take less than 10 minutes. The information from the post-survey will remain confidential.

To participate, you may contact me by email at [redacted] A consent form is attached to this email. The consent document contains additional information about my project, but you ***do not*** need to sign and return it to me. I will provide a consent form for you to sign before the educational intervention is conducted.

If you choose to participate, the DNP student will provide a lunch from your choice of restaurants.

Sincerely,

Cindy Thomas
DNP Student from Liberty University

Appendix K

Collaborative Institutional Training Initiative Certificate

(Collaborative Institutional Training Initiative, 2016)

CITI PROGRAM

Completion Date 06-Sep-2018
Expiration Date 05-Sep-2021
Record ID 21175716

This is to certify that:

Cindy Thomas

Has completed the following CITI Program course:

Social & Behavioral Research - Basic/Refresher (Curriculum Group)
Social & Behavioral Researchers (Course Learner Group)
1 - Basic Course (Stage)

Under requirements set by:

Liberty University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w9d5d9cc8-cae0-4792-9c10-4a794ba92605-21175716

(Collaborative Institutional Training Initiative, 2016)

Appendix L

Consent Form

An Educational Intervention to Raise the Awareness about Obesity, the Importance of Follow-Up, and the Need to Utilize Recommended Strategies and Interventions Among Advanced Care Practitioners in a Sleep Center Setting

Cindy Thomas
Liberty University
Doctor of Nursing Practice Program, School of Nursing

You are invited to participate in an evidence-based practice project to increase your awareness of obesity and the recommended strategies and interventions that you can use when caring for patients at a sleep center. You were selected as a potential participant since you interact with patients at the sleep center as part of your job. Please read this form carefully and ask any question you may have before consenting to participate in this project.

Purpose of this Project: The purpose of this project is to raise the awareness of obesity and the importance of follow-up in a sleep center. In addition, you will learn about strategies and interventions that can be integrated in to practice. The goal is to continue to build on the excellent care that is already being provided to patients by providing education about obesity, improving communication between healthcare clinicians and the patients, and providing written referrals for obese patients to follow-up with their primary care physician.

Participant Responsibilities: If you consent to participate in this project, you will be asked to:

1. Complete this consent form.

2. Review a PowerPoint presentation about obesity, importance of follow-up, and strategies and interventions that you can use in practice to optimize outcomes. This will take approximately 15 minutes to complete.

3. One month after completing the educational intervention, you will receive a post-survey to evaluate if the educational intervention was helpful and if you integrate any strategies into practice. This will take approximately five to 10 minutes to complete. All responses will remain confidential.

Risks and Benefits: There are no identified risks to you for participating in this project other than those encountered in everyday life.

The direct benefits that you should expect to receive from participating in this project include improving your knowledge about obesity and integrating recommended strategies and interventions in your practice to optimize outcomes. This knowledge will build on the excellent care that you already provide at the sleep center.

Benefits to sleep center patients include improving follow-up and communication for individuals with obesity and increasing the quality of care they receive.

Compensation: You will not receive any financial compensation for being part of this project. There will be a lunch and learn provided during the PowerPoint education presentation.

Confidentiality: The records of this project will be kept confidential. Any type of record that may be published will not include any information that will make it possible to identify a participant. Records will be stored securely with special encrypting software, and only the project leader will have access to the records. The project leader may share non-identifying data collected from this study to use in future research studies or with other researchers; if the data collected about you is shared, all identifying information will be removed, before I share the data.

Voluntary Nature of the Project: Participation in this project is voluntary. Your decision whether to participate will not affect your current or future relations with Liberty University, Mission Health, or Hospital Corporation of America. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships.

How to Withdraw from the Project: If you choose to withdraw from the project, please contact the project leader at the email address/phone number included in the next section. If you withdraw from this study, data collected from you will be destroyed immediately and will not be included in the project.

Contacts and Questions: The project leader conducting this project is Cindy Thomas, BSN, RN. You are encouraged to ask any questions that you may have at this time. If you have questions later, you are encouraged to contact the project leader at [redacted]

If you have any questions or concerns regarding this project and would like to talk to someone other than the project leader, you are encouraged to contact Liberty [redacted]

Statement of Consent: I have read and understood the above information. I have asked questions and have received answers. By signing my name to this document, I consent to participate in this project.

_____

Name Printed

_____

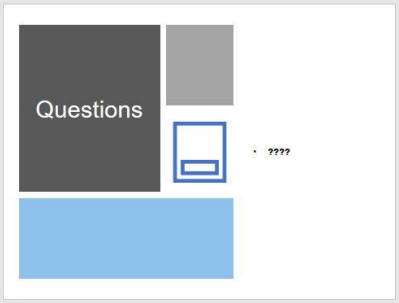
Signature

_____

Date

Appendix M

PowerPoint Educational Intervention



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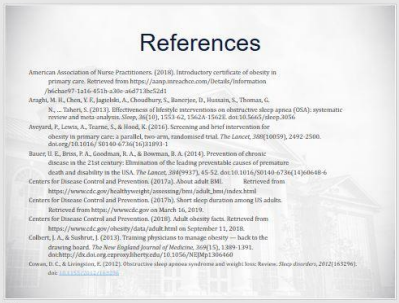

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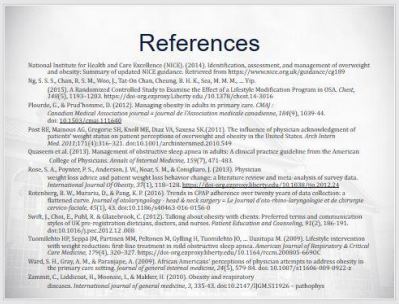

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