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Development and Validation of an Adult Diet and Physical Activity Program in Primary Care Setting

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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2017

Abstract

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MS, University of Maryland School of Nursing, 2010

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Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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Abstract

Obesity is a national health problem with serious medical, psychological, and economic outcomes. Nurses and nurse practitioners (NPs) are frequently the first point of patient contact and play an essential role in the management of obesity. The current literature noted that practitioners working in primary care settings demonstrate inadequate knowledge related to evidence based practice (EBP) strategies to treat obesity, including diet modification and physical activity. The purpose of this DNP project was to develop and validate an EBP provider educational module related to diet modification and physical activity education for adult patients diagnosed with obesity in a primary care setting. The theoretic frameworks used in this DNP project included the theory of planned behavior, the health belief model, and the plan-to-do-study-act model. Five clinical experts on adult obesity were asked to review the newly developed education module and complete a 4-point Likert scale survey evaluating the module content. Experts were encouraged to provide additional recommendations at the end of the survey. Descriptive analysis was used to analyze the survey data and 100% of the experts strongly agreed that the module contained comprehensive content related to adult obesity pathology, patient behavior modification, and the benefits of evidence-based adult diet and physical activity guidelines. Experts also strongly agreed that this project will strengthen provider skills related to history intake, assessment, and physical examination of obese patients. The project promotes positive social change in the primary care setting by improving provider awareness, knowledge, and EBP management guidelines of adult obesity patients.

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Dedication

It is a great pleasure to dedicate this project in honor of my late parents Mr. Tobias Keke and Mrs. Charity Keke who started calling me nurse as early in life as I can remember. May the souls of both of you rest in perfect peace.

To all my teachers at University of the District of Columbia, University of Maryland School of Nursing, and Walden University School of Nursing I thank you all for being great role model.

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Third, to my wonderful and beautiful children—Ignatius Ekekwe, Jr.; Sean Ekekwe; Derick Ekekwe; and Adanna Ekekwe—you four are the best things that have ever happened to me. Your love and support made it possible for me to achieve this goal.

Lastly, to my lovely husband, Sir Ignatius Ekekwe, Sr.—you allowed me the opportunity to pursue and achieve my dream. I thank you for your love, patience, and utmost support throughout the process of achieving this highest degree. Thank you for standing by my side. I will always love you.

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Section 1: Overview of the Project

Introduction

Obesity has become a national health problem with serious medical, psychological, and economic effects. Because of its widespread diagnoses and severe effects on the overall well-being of individuals, adult obesity has been recognized as an epidemic across the nation. Currently, approximately 67% of the adult population in the United States qualifies as obese or overweight (Ogden Carroll, Fryar, & Flegal, 2015). Obesity affects almost all aspects of life for individuals who experience it. Empirical evidence has indicated that obesity is positively correlated with numerous health conditions that include psychological, social, and physical challenges. The psychological challenges associated with obesity include behavioral issues, self-esteem and self-confidence issues, and various types of depression—all of which can be debilitating. In addition, obesity has been linked with various undesirable social effects, including depression, stigmatization, and discrimination (Atlantis & Baker, 2008). Examples of physical health problems associated with obesity include some types of cancer, cardiovascular disease, type 2 diabetes, and asthma (Busetto & Maggi, 2015). In addition to the above-mentioned health effects, the financial expenses incurred as a result of obesity and its associated ailments have extended into the billions of U.S. dollars.

Numerous researchers have cited physical inactivity and consumption of unhealthy meals as the primary factors responsible for the high prevalence of obesity in the United States (Wyatt, Winters, & Dubbert, 2015). As a result, the American Heart Association (2016), the World Health Organization (WHO; 2016), and the Centers for

Disease Control and Prevention (CDC; 2015) have recommended moderate or intense physical activity and a healthy diet as primary strategies that can help obese individuals acquire and sustain a healthy weight.

However, some reports have indicated that healthcare providers are inadequately trained to treat obese patients. Researchers and public health officials have recommended the inclusion of education programs for obesity management in primary care settings (Spivack Swietlik, Alessandrini, & Faith, 2010). At my practice setting, a primary care clinic, there is no educational program focusing on the management of adult obese patients. The current practice in the clinic requires the primary care providers only to inform adult obese patients how much weight they should lose for them to live healthy lives. The clinic does not have a diet modification program or a physical activity education program in place. Because the clinic does not have an obesity education program, adult obese patients currently are not presented with education and information about diet, physical activity, and other behaviors that can improve their weight, chronic disease, and overall well-being. Thus, I determined that it was essential to develop and validate an obesity education program in this primary care setting. The objective of the education program was to promote participation in physical activity and consumption of healthy meals in order to reduce the current prevalence of adult obesity in this setting.

Prevalence

The prevalence of obesity as a chronic health problem has been mounting at an alarming rate in the United States. Numerous governmental and nongovernmental surveys have been administered to determine the prevalence of obesity among the U.S.

adult population. According to the American Heart Association (2016), more than 159 million (approximately 69%) of U.S. adult residents are overweight.

Presently, more than 24 million American children are overweight, and more than 13 million are obese. This means that 32% of the U.S. population under 18 years of age is overweight or obese. The latest report by the CDC indicated that at least 35% of adults (one in every three adults) in the United States are obese, making the prevalence rate of obesity in the U.S. one of the highest in the entire world (CDC, 2015).

There is a high likelihood that the prevalence of obesity will increase in the near future. A report released by the CDC indicated that 35.7% of adults in the United States were obese in 2010. The Organization for Economic Cooperation and Development (OECD) estimated that 75% of the U.S. population will either be obese or overweight by 2020 (Pittman, 2012). The WHO (2014) report indicated that the prevalence of obesity has doubled in the past three decades, while the Manyika and Dobbs (2015) has projected that almost 50% of the global population will be obese by 2030.

Epidemiological studies carried out across the nation have identified a prominent disproportionality in obesity prevalence regarding education and income levels. Cohen, Rai, Rehkopf, and Abrams (2013) concluded that the obesity epidemic disproportionately affects adults with low levels of education and revenue. Physical inactivity and consumption of unhealthy meals have been cited as the primary factors contributing to the high prevalence of obesity in the United States. According to the American Heart Association (2016), more than 30% of adult residents in the United States do not participate in any physical activity during their leisure time.

The prevalence of obesity in the United States is higher in patients treated in primary care settings compared to members of the general population (Kushner, 2012). A retrospective study carried out by Stecker and Sparks (2012) showed that during a three-year period, 69% of all patients seeking care in Southeastern U.S. primary care settings were either obese or overweight. At my project site, more than 70% of all adult patients seeking care are either overweight or obese, and 80% of these obese adult patients have experienced at least one obesity-related chronic disease, such as diabetes or hypertension. These statistics are consistent with findings reported by Stecker and Sparks (2012), indicating that there is high number of obese or overweight adult patients in U.S. primary care settings.

Mortality

The morbidity and mortality linked to obesity or being overweight have been recognized in the healthcare sector for more than two decades (Nguyen & El-Serag, 2010). A large number of epidemiologic studies have examined the association between a higher body mass index (BMI) and mortality. Generally, the findings have indicated that a higher than normal BMI is positively correlated with mortality from almost all etiologies and cardiovascular diseases. This is especially the case for severely obese individuals. According to Bray and Perreault (2016), between 111,909 to 365,000 deaths occur on an annual basis in the United States as a result of obesity.

Being overweight also has been correlated with a decreased lifespan in a large number of studies. For example, a prospective study conducted by Adams et al. (2006) assessed the association between obesity and mortality risk for a follow-up period of 10

years. The study involved 500,000 adult participants (both males and females) between 50 and 71 years of age who were nonsmokers and free from cardiovascular disease. The researchers found that the risk of death increased between 20% and 50% among the overweight participants and was more than three times as high in the obese adults. Being overweight or obese appears to indicate a higher risk of mortality, even after controlling for ethnicity and gender.

Subsequent prospective studies have reported findings similar to those of Adams et al. (2006). For instance, a Prospective Studies Collaboration meta-analysis study reported that the risk of mortality was the lowest among people with a BMI of 22.5 to 25kg/m2, and the risk of death increased by 30% for every 5kg/m^2 increase in BMI (Prospective Studies Collaboration, 2010). Likewise, Berrington de Gonzalez et al. (2010) found that a BMI of 20 to 24.9 kg/m^2 was correlated with the least mortality, and the risk of mortality increased by 30% for every 5kg/m^2 increase in BMI for individuals in the 25 to 49.9 kg/m^2 range. The participants were free from any form of cancer and cardiovascular disease, and they had never smoked. A meta-analysis of 97 primary research studies reported similar findings. Upon data analysis, Grade II and Grade III obesity were positively correlated with all-cause mortality. The findings were similar upon adjusting the height and weight reporting methods, underlying illnesses, and smoking status (Flegal, Kit, Orpana, & Graubard, 2013). Therefore, it can be concluded from the research literature that obesity reduces life expectancy.

Morbidity

In addition to the increased mortality risk, research reports have indicated that obesity is positively correlated with increased morbidity. A recent systematic review of the research literature indicated that obese and overweight individuals experienced a greater risk of developing type 2 diabetes, cardiovascular disease, and hypercholesterolemia compared with individuals who had a normal BMI (Friedemann et al., 2012). A systematic review of the research literature was conducted by Roberson et al. (2014), who reported that the risk of developing chronic diseases, such as colon cancer and cardiovascular diseases, increased with an increase in BMI. Obesity also has been associated with other health conditions, including kidney disease, endocrine changes, colon and rectum cancers, dementia, gout, and apnea (Lengel, 2015).

Economic Burden

The economic burden associated with the management and effects of obesity has been increasing during the past decades. In addition to the burden associated with social exclusion, discrimination, obesity comorbidities, and mortality, individuals suffering from obesity have incurred substantial social and healthcare expenses related to the management of obesity and its effects. The annual total healthcare cost in the United States as a result of direct (preventive, diagnostic, and management) and indirect expenditures (premature mortality, decreased earnings, and loss due to absenteeism) on obesity has been estimated to be approximately $46 billion and $208 billion, respectively (CDC, 2015). These costs surpass the healthcare costs attributed to alcohol consumption and smoking and compose about 6% to 12% of the U.S. total annual spending on

healthcare. In line with these findings, it has been estimated that the aggregate national healthcare expenditure in the United States as a result of obesity will increase to $957 billion by the year 2030, accounting for about 18% of the U.S. expenditures in healthcare (American Heart Association, 2013).

Problem Statement

Regarding the economic, medical, and psychological effects of obesity, the goal of this quality improvement project was to design an obesity education and management program for obese adults between 40 and 65 years of age. Effective obesity management programs should be implemented in primary care settings, and patients should be targeted as the primary agents in reducing the prevalence of adult obesity. Prevention endeavors have targeted healthcare practitioners (nurses and nurse practitioners) as well as patients so that they may work together closely to achieve optimal realization of this goal. For this DNP project, the term *primary care provider* (PCP) refers to nurse practitioners.

Physical inactivity and unhealthy diets have been identified as primary causes of various diseases and medical conditions, including the skyrocketing public health concerns related to obesity and being overweight. As a result, research has clearly shown that physical activity and diet modification should be an integral component of day-to-day life, particularly among obese individuals. Consequently, community-based weight-management programs have been prioritized for members of these populations. However, reports have indicated that healthcare providers in primary care settings are inadequately trained to treat obese patients (Goldie & Brown, 2011; Nolan, Deehan, Wylie, & Jones, 2013; Phillips, Wood, & Kinnersley, 2014). Indeed, a study conducted by Hansson,

Rasmussen, and Ahlstrom (2012) found that PCPs generally regard themselves as ill-equipped and have low confidence in their ability to provide adult obesity management services. Moreover, a large percentage general practitioners have indicated that the chances of obese patients succeeding with weight-reduction efforts are limited (Nolan et al., 2013). Similar to the above findings reported in the literature examining management of obesity in primary care settings, healthcare providers working with the primary care center of interest in this project have reported poor self-efficacy and have been ill-equipped to provide effective information and education to patients regarding obesity management and practices.

Research clearly has indicated a need for development and validation of weight-management education programs in the primary care setting. It is anticipated that proper training regarding diet modification and participation in physical activity will improve adult obesity outcomes in the primary care setting. In most instances, nurses and nurse practitioners are the first point of contact with patients, and increasing their awareness about obesity management will improve obesity treatment efforts.

Purpose Statement

The purpose of this project was to develop and validate an education module focusing on diet and physical activity for obese adults between 40 and 65 years of age to improve their health outcomes. To contribute to the previous research endeavors aimed at finding a sustainable solution to the current public health concern of obesity, extant literature on physical activity and diet modification was reviewed. This review led to the development of a tailored diet modification and physical activity participation program,

which was evaluated by experts and achieved an acceptable level of content validity based on the responses provided by five expert reviewers of the program (see Appendices C and D).

Goals and Objectives

The primary goal of this quality improvement project was to develop and validate an education module focusing on diet and physical activity for obese adults between 40 and 65 years of age to improve their health outcomes. The program was developed based on important factors contributing to weight management as identified in a review of extant literature. The components of the education program that focus on diet modification and physical activity were developed using evidence-based guidelines and relevant behavioral theories, including the theory of planned behavior. The specific goals of the education program were as follows:

1. To determine physical activity and diet modification mediators of behaviors that can be engaged in to reduce the current incidence of obesity among adult patients in primary care settings.
2. To promote self-determination leading to weight reduction among obese adults.
3. To ensure that obese adult patients experience the maximum benefits of a physical activity and diet modification program.

Project Question

The following question guided this project: Does the development of an education program on diet and physical activity for obese adult patients in the primary care setting improve adult obesity outcomes?

Significance of the Project

The primary relevance of this quality improvement project was its potential in developing and validating an education program with the objective of improving the management of adult obesity in primary care settings. Considering that obesity is a chronic health condition with debilitating medical, psychological, and economic effects, attempting to evaluate how adult obesity can be best managed is a worthwhile venture.

This DNP project will serve as a quality improvement initiative, and it is anticipated that it will become relevant in the new health delivery models by assisting in the management of adult obesity. Coincidentally, weight management treatments using evidence-based practices have been advocated by various health agencies, including the WHO and the American Heart Association (Mozaffarian et al., 2016). Although this DNP project was developed for nurses and nurse practitioners, the evidence-based approaches can be transferred to related practice areas, such as diabetic care, cardiovascular care, pharmacy, physiotherapy, occupational therapy, and the general field of medicine. The U.S Preventive Services Task Force recently updated its guidelines on adult obesity management in primary care settings. This organization has recommended that all adults treated in primary care settings should be screened for obesity, and inclusive multicomponent weight-management interventions should be provided to affected

patients (Moyer, 2012). Therefore, the rationale is apparent for developing an education program that focuses on diet modification and participation in physical activity.

The Role of Nurses and Nurse Practitioners in Obesity Management

Nurses and nurse practitioners (NPs) are frequently the first point of contact in primary care settings and play an essential role in assessing individuals at risk of obesity. NPs have numerous responsibilities when it comes to caring for the sick. The International Council of Nurses' (ICN) Code of Ethics for Nurses clarifies that nurses have four basic responsibilities. These responsibilities include promoting health, restoring health, alleviating suffering, and preventing ailments (Zahedi et al., 2013).

It is expected that nurses and NPs should provide healthcare services to all families, communities, or individuals seeking healthcare treatment. This requires a high level of cooperation with patients and other healthcare practitioners in providing high-quality care. This cooperation is essential considering the responsibilities of nurses and NPs regarding health promotion and patient education. Nurses and NPs are responsible for teaching patients how to prevent and manage medical conditions in order for patients to remain healthy (Gance-Cleveland et al., 2009).

Although obesity can be managed through community-based weight-loss programs, it is the belief of this DNP candidate that involving general practitioners is critical in adult obesity management, regardless of whether obese patients are referred out of primary care settings. In some cases, the advice of practitioners working in primary care settings has been found to be an important determinant in weight-management endeavors by patients (Wadden et al., 2013).

Implications for Social Change

As project leader, I conducted an extensive literature review, which resulted in a comprehensive analysis of empirical research that has been conducted on the management of adult obesity. Through the analysis of empirical literature, I ensured that nurses and NPs remained informed about the changes that have continued to take place in obesity management protocols.

A comprehensive education program was developed, and I anticipate that the program will have a positive effect on how nurses and nurse practitioners in primary care settings handle and manage obese patients between 40 and 65 years of age. If the education program is adopted and implemented, I anticipate that the current prevalence of obesity will be reduced significantly in the long term by emphasizing diet modification and promoting physical activity.

Assumptions and Limitations

The following assumptions and limitations apply to this project.

Assumptions

The following assumptions are in effect in monitoring the impact of the diet modification and physical activity program:

1. Physical activity and diet modification are essential in weight reduction and maintenance of a healthy weight.
2. NPs in primary care settings seek to provide the best possible care to obese patients.
3. Development of a theory-based approach is essential in managing obesity.

4. Training and information about diet modification and physical activity are essential to all nurses who provide care for obese adults.

Limitations

The goal of this DNP project was to develop an education module that provides a foundation platform for nurses and NPs in the provision of care to obese patients between 40 and 65 years of age. The readiness of staff members to engage in such a program is a crucial concept that may be considered a potential limitation to the implementation of this education module. The healthcare organization in which this project will be implemented has experienced tremendous changes during the past two years as a result of the restructuring of its management and services. This unsteady environment may slow the implementation of the education program.

Definitions of Terms

The following terms and definitions apply to this project:

Body mass index (BMI): BMI refers to the measure of an individual's body fat based on his or her height and weight. BMI is calculated by dividing an individual's mass (in kilograms) by his or her height squared (in meters). BMI is commonly expressed in units of kg/m^2 (Busetto & Maggi, 2015).

Obesity: The WHO (2016) has defined the term obesity as having an excessive or abnormal amount of fat in the body that poses a risk to the wellbeing of an individual. Obesity is determined by calculating the BMI. A person with a BMI of more than 30 is considered obese.

Overweight: An excessive amount of fat in the body due to an imbalance between energy intake and energy expenditure. Similar to obesity, an overweight health status can be determined by calculating BMI. Individuals are considered overweight if their BMI is equal to or greater than 25.

Physical Activity: The term physical activity refers to any bodily motion that results in energy expenditure beyond the basal metabolic rate. It is recommended that physical activity for a healthy weight should have a moderate or a vigorous intensity (Williams & Fruhbeck, 2009).

Chapter Summary

This chapter discussed obesity as a public health concern in the United States. It presented research on obesity prevalence rates, morbidity rates, and mortality rates as well as the economic effects of obesity. The current prevalence of adult obesity has been attributed to inadequate physical activity and consumption of unhealthy meals. Reports have indicated that healthcare practitioners working in primary care settings are inadequately trained or prepared to treat adult obese patients. Therefore, the main goal this project was to develop an education curriculum focusing on diet modification and physical activity for obese patients between 40 and 65 years of age.

Section 2: Review of Scholarly Literature

Introduction

In this chapter I provide a general overview of the research that has been conducted on adult obesity. Specific concepts, including obesity risk factors, obesity screening, the effects of obesity, and obesity management are presented with a special focus on lifestyle interventions. The chapter also presents information about the current status of obesity management in primary care settings and explains the theoretical framework adopted for this project. The research literature has indicated that diet modification and physical activity programs are valuable in managing adult obesity. However, most practitioners working in primary care settings possess inadequate knowledge about the interventions that can be used to manage adult **obesity**.

Literature Search Procedure

I located relevant literature on obesity was located using various electronic databases, including PubMed, COCHRANE, and CINAHL. Google Scholar, a source of gray literature, also was used to minimize publication bias. This literature review also includes information from journal articles, government websites, and books, among other sources of health data. The key terms used in the literature search were *adult obesity, physical activity, diet modification, risk factors,* and *management of obesity.* These terms were used either alone or in combination with other search terms. The search for research literature focused on articles published in the English language between 2006 and 2016. Information from journal articles was included based on its relevance and contribution to the topic of this study.

Obesity

Adult obesity refers to a phenomenon in which excessive body fats negatively impact the health of adults. Karageorgi, Alsmadi, and Behbehani (2013) explained that obesity is viewed as a medical condition due to various negative health effects associated with it. Empirical evidence has indicated that a large number of obese individuals consume meals with a high number of empty calories and a high level of fat and that they do not participate in regular physical activity. The surplus fat in the body can result in severe illnesses that significantly reduce the quality of life or the lifespan of obese individuals.

In this review of literature, the National Heart, Lung, and Blood Institute's terms and classifications of BMI were used. The term "underweight" refers to a BMI of less than 18.5, "normal weight" refers to a BMI between 18.5 and 24.9, "overweight" refers to a BMI between 25 and 29.9, and "obese" refers to a BMI of 30 or higher. The institute categorizes obesity into three main categories: Grade I obesity refers to a BMI between 30 and 34.9, Grade II refers to a BMI between 35 and 39.9, and Grade III refers to a BMI of 40 or higher (National Heart, Lung, and Blood Institute, 2016).

However, debates have continued regarding the validity and reliability of the BMI scale in assessing healthy weight. Individuals who are muscular or who are body builders can still have a healthy weight even if their BMI is classified in the "overweight" or "obese" category (Busetto & Maggi, 2015). Ethnicity is another factor that should be considered when using the BMI scale; adults of Asian origin with normal BMI levels can

still have weight-related problems. In addition, the BMI scale should not be used for determining health status among pregnant women (Khan, 2013).

Screening and Diagnosis

It is of utmost importance to detect and categorize individuals who are obese or at risk of becoming obese. The WHO recommended that obesity screening methods and obesity diagnostic methods should be based on BMI. BMI is the most widely used technique in the screening and diagnosis of obesity. BMI is calculated by dividing an individual's weight in kilograms by his or her height in meters squared (m^2). An ideal weight should take into account an individual's body muscle, sex, age, and height. This technique has been endorsed by the WHO as the most reliable and valid measurement of evaluating an adult's weight (Williams & Fruhbeck, 2009).

Risk Factors and Causes of Obesity

Similar to other health conditions, such as cancer and diabetes, the onset of obesity can result from a broad range of factors that, in most cases, act in combination. Empirical evidence has indicated that obesity is brought about by numerous factors, including demographic factors, biological factors, genetic predisposition, and social-cultural factors.

Unhealthy Diets

Unhealthy diets are among the main causes of obesity. Unhealthy fats, foods with empty calories, sugary drinks, red meat, and refined grains have been acknowledged as the primary types of foods that promote the development of adult obesity. Studies conducted in Europe, Australia, and the United States have indicated that most people eat

foods with a large number of empty calories and saturated fats (Williams & Fruhbeck, 2009). Evidence also has indicated that overweight and obese individuals consume an inadequate amount of fruits, whole grains, and vegetables (Colaizzo-Anas, Smith, Tetewsky, & Wieczorek, 2016).

Physical Inactivity

Lack of physical activity has been recognized as a major factor that promotes development of obesity among adults. Physical activity can protect individuals from unhealthy weight gain, and empirical evidence has indicated that obese individuals are generally less physically active (Gortmaker et al., 2013). Moreover, the number of individuals living sedentary lifestyles has increased, and clear evidence has associated high incidences of obesity with an increase in sedentary lifestyles.

Age and Gender

Age has been described as an obesity risk factor because BMI tends to increase with age. A number of studies have ascertained that women and men tend to add weight as they age, especially between 50 and 60 years of age (Hirko et al., 2015; Laska et al., 2015; Zhu, Coombs, & Stamatakis, 2016). Statistics on obesity have indicated that women are disproportionately affected and contribute to a high level of obesity incidences due to gestational weight gain (Yeo, Crandell, & Jones-Vessey, 2016). Some women lose excess fat gained during the gestational period, while other women fail to do so.

Social and Environmental Factors

The role of environmental and social-cultural factors as one of the main contributors to obesity has been widely documented in existing research literature. *Environment* refers to all the circumstances surrounding human life, and these circumstances have an influence on the accessibility of healthy food and participation in physical activity. The environment can preclude individuals from participating in physical activity and consuming healthy meals.

An example of environmental influence (specifically, the neighborhood environment) is the tendency to consume junk food and fast food, which are cheaper and easier to prepare in comparison to healthy meals. These nutrition-less meals usually contain high numbers of empty calories and high levels of fats. Another way that the neighborhood environment can contribute to obesity is the absence of adequate sidewalks and a dearth of readily available recreation areas (Suglia et al., 2016).

Low levels of education and poverty also have been identified as social-cultural factors that facilitate development of obesity. Suglia et al. (2016) concluded that lower education levels and poverty are obesity risk factors because high-fat, high-calorie meals are usually cheaper and faster to prepare in comparison to healthy meals that include vegetables and fruits.

Other Obesity Risk Factors

Other obesity risk factors include health conditions and illnesses, such as polycystic ovary syndrome, Cushing's syndrome, hyperthyroidism, and depression (Ruiz-Narváez, Palmer, Gerlovin, Wise, & Rosenberg, 2016). Inadequate sleep; certain drugs,

including steroids; genetics; reduced rate of metabolism; and antidepressants that promote food intake have been recognized as obesity risk factors (Malik et al., 2013; Yeo, et al., 2016).

Effects of Obesity

Obese adults suffer from various long-lasting health conditions as a result of obesity. Reports have indicated that obese adults are more likely to suffer from type 2 diabetes, asthma, and heart diseases, in addition to other obesity-related diseases. O'Brien, Latner, Ebneter, & Hunter (2013) reported that obese individuals often suffer from discrimination and bullying as a consequence of their health status.

Flint and Snook (2014) observed that some obese individuals are discriminated against while others are harassed, even by their relatives. A large number of obese individuals have suffered from negative stereotyping and marginalization in society. Some reports have indicated that many individuals assume that overweight and obese people are lazy and consume too much food. These stereotypes have resulted in stigmatization, lower self-esteem, and lower self-confidence among obese populations (Flint & Snook, 2014).

Management of Obesity

Although obesity has been a chronic and problematic health concern, a number of strategies have been identified that can be used to manage obesity.

Surgery and Medications

The main methods used in the treatment of obesity include lifestyle interventions, pharmacotherapeutic interventions, and obesity surgery. The pharmacotherapeutic

interventions have shown modest effects on weight management and are commonly used in combination with diet management programs. Orlistat (Xenical), among other generic drugs, has been approved by the Food and Drug Administration and is currently used in long-term management of obesity (Bray & Ryan, 2014). On the other hand, obesity surgery (bariatric surgery) works through physiological mechanisms and results in weight reduction.

Lifestyle Interventions

The term "lifestyle" (as applied to obesity) is commonly used to describe an individual's choice of a health-related behavior. A closer look at the role of lifestyle suggests that individual behaviors and preferences are influenced by age, social status, access to resources, gender, and level of education. With these factors in mind, it is evident that changing an individual's lifestyle can be a daunting task due to personal and extrapersonal barriers (Kirk, Penney, McHugh, & Sharma, 2012). However, despite their importance, environmental and social factors rarely have been considered when designing obesity management programs (Aadland & Anderssen, 2013). Reviews summarizing literature on obesity management have recommended that lifestyle interventions should be inclusive and focus on diet and physical activity modification as well as behavior change. In addition, research has indicated that such multicomponent programs are more likely to be successful in managing weight than single-component interventions. For example, a systematic review by Paul-Ebhohimhen and Avenell (2009) indicated that group-based programs seem to produce more weight loss compared with individual therapy. Allocation of skilled healthcare providers and follow-up care during a

specified period has been cited as an effective method of achieving sustainable behavior change.

A large number of existing research studies have evaluated the influence of lifestyle interventions on weight loss among obese adults (Aadland, Andersen, Anderssen, & Kvalheim, 2013; Goodpaster et al., 2010; Karlsen, Søhagen, & Hjelmesæth, 2013). A meta-analysis conducted by Franz et al. (2007) reported that lifestyle intervention could lead to a 5-9% weight loss within the first six months. In addition, a multicentered randomized trial conducted by the Look AHEAD group reported a 4.7% weight loss among participants in the eighth year (Unick et al., 2011). The study is reliable because a large sample size and a wide range of participants were included. The use of randomization in allocating the participants to various treatment groups eliminated biases. The study was characterized by low attrition due to follow-up protocols, and the participants were followed for a lengthy duration (8 years).

Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) is a major component of the three cornerstones of multi-component lifestyle interventions. CBT focuses on modifying thinking habits and provides tools and approaches that encourage obese individuals to adopt a healthy lifestyle by modifying their diet and becoming physically active (Manzoni et al., 2015). CBT encourages obese individuals to set and strive to achieve realistic goals. Problem-solving, nutrition education, stimulus control, and mental restructuring are among additional strategies used to promote behavior change.

Diet

Diet is another key component of lifestyle-based interventions (Teede & Moran, 2016). The main requirement in this technique is that the total energy intake should be less than the total energy output. It has been recommended that obese individuals should reduce energy consumption by 500 to 1,000 kcal/day to realize a weight reduction of 0.5-1.0 kg within a week. Individuals weighing more than 114 kg ought to ingest between 1,200 and 1500 kcal/day (Johns et al., 2014).

Researchers have evaluated the effects of diets containing various macronutrients in the management of obesity, and the general conclusion is that the decrease of calorie consumption is more essential for weight reduction in comparison to the administration of various pharmacotherapeutic regimens (Johnston et al., 2014; Kirk et al., 2012; Wadden et al., 2012). Consequently, most recommendations for weight management emphasize consumption of a balanced diet composed of low levels of refined sugars, saturated fat, and calorie content. However, long-term adherence, individual factors, and medical comorbidities should be considered when determining diet components (Kirk et al., 2012). Dietary modification programs should be individualized and tailored to the needs and preferences of patients regarding weight reduction.

Physical Activity

Physical activity is the third component of multi-component lifestyle interventions, and it is one of the health-connected behaviors that will be evaluated in this proposed research project. Wadden et al. (2012) asserted that physical activity is an intricate behavior that is influenced by environmental, social, and individual factors.

Silfee et al. (2016) have argued that numerous cognitive factors influence physical activity levels. Examples of these factors include individuals' perceived level of control and level of self-efficacy. Physical activity includes sports activities as well as non-sport activities, such as transportation, leisure, work-related activities, and household activities. Physical activity guidelines in the US have recommended that adults between 18 and 64 years of age should complete at least a minimum of 150 minutes of moderately intense aerobic activity per week, 75 minutes of vigorously intense physical activity per week, or a combination of both (Hallal et al., 2012; Stapleton & Bulger, 2015).

According to a report released by the CDC in 2013, approximately 80% of US adults do not meet the physical activity recommendations (CDC, 2013). Obese and overweight individuals reportedly experienced lower levels of physical activity, while highly educated individuals were more likely to meet the minimum recommendations. This correlation has been established in a variety of studies evaluating adherence to physical activity guidelines (Anderssen & Kolle, 2013; Beavers et al., 2015; Swift et al., 2014).

Wilson (2016) claimed that relying exclusively on physical activity to lose weight can be challenging, considering that the requirements to be met are in most cases unrealistic for most obese individuals. Nevertheless, exercising has been shown to play a crucial role in multi-component lifestyle interventions for a variety of reasons. First, it has been proven that a combination of physical activity and diet modification is one of the most effective strategies for losing weight and sustaining healthy weight among obese and overweight individuals. The Look Ahead Research Group (2014) observed that

increased physical activity was positively correlated with initial and sustained weight loss in obese adults living with type 2 diabetes. A systematic review by Adland and Anderssen (2013) indicated that a recommendation of 30 to 60 minutes of moderate-intensity physical activity (3 to 5 days a week) led to weight loss between 1 kg and 3 kg in obese and overweight adults.

In addition to the reduction in body weight, research has indicated that physical activities result in further benefits, including improved cardiovascular health, improved aerobic fitness, and reduced incidences of various obesity co-morbidities (Andersen & Anderssen, 2013). It has been recommended that the actual level of physical activity should be evaluated when using physical activity as a strategy for weight loss. Various devices, including motion sensors (accelerometers), can be used to assess objectively levels of physical activity. This approach provides more reliable and valid data in comparison to the current tendency of relying on self-reported data from personal diaries or questionnaires.

Current Status of Obesity Management in Primary Care Settings

Primary care providers (PCPs) have been given a mandate to screen all adult patients for obesity and offer obesity management interventions to obese and overweight patients. However, only a small number of PCPs discuss weight management with their clients, and few evidence-based guidelines exist for implementing lifestyle interventions in primary care settings (Nolan et al., 2013).

Research studies have indicated that PCPs possess inadequate skills and knowledge to provide lifestyle-based interventions, which include the recommended

techniques for weight management in obese or overweight adult patients (Goldie, & Brown, 2011; Hansson, Rasmussen, & Ahlstrom, 2012; Nolan et al., 2013). Additional research reports have cited lack of time and lack of motivation to manage obesity among patients in primary care centers. Research has indicated that a high percentage of PCPs consider the likelihood of an adult obese patient succeeding in weight reduction to be minimal (Phillips et al., 2014).

It has been reported that most PCPs have negative attitudes about adult obese patients, and they generally perceive these patients as possessing inadequate motivation, reluctant to change their lifestyles, non-compliant with weight-management guidelines, and lacking the drive or desire to lose weight (Ferguson et al., 2010; Phillips et al., 2014; Wadden et al., 2013). As a result, most PCPs attribute the failure to reduce weight to patient-related barriers rather than primary care (institutional) factors or professionally related factors. Nevertheless, some reports have supported the presence of institutional and professionally related barriers in the course of patient visits, including inadequate knowledge, deficiency of patient-oriented educational programs, and time constraints (Wadden et al., 2013).

Theoretical Framework

Research literature has provided clear evidence that obesity can be managed through energy balance, which can be achieved by participating in physical activity and avoiding foods containing a high number of empty calories. Nevertheless, management of obesity through lifestyle modification has been a challenging task, especially in primary care centers. Empirical research focusing on cognitive motivation and weight-

management motivation has indicated that patients' perceptions, attitudes, and beliefs influence the nutritional behavior adopted by obese individuals (Chung & Fong, 2015).

Theoretical models that have been used in diet modification and promotion of physical activity intervention in weight management include the trans-theoretical model (TTM), social-cognitive theory (SCT), self-determination theory (SDT), the health belief model (HBM), and the theory of planned behavior (TPB). The TPB model aims at creating an enhanced understanding of individual determinants and intentions associated with performing a certain behavior. Interventions based on the TPB model enable individuals or groups to deliberate on their choices and cultivate strong intentions about achieving their ultimate target behavior (Chung & Fong, 2015). The TPB theoretical model has been shown to be more economical and inclusive compared to other health models, such as the HBM (Abamecha, Godesso, & Girma, 2013). According to Eto et al. (2011), the TPB model makes it possible to explain the factors that determine the intention of individuals to modify their dietary behavior.

The theory of planned behavior emanated from the theory of reasoned action, and it serves as a conceptual framework for understanding human action. The model asserts that human actions are determined by three main considerations: (a) beliefs about the elements that may encourage or hinder the target behavior (control beliefs), (b) beliefs about normative anticipations and the encouragement to comply with these anticipations (normative beliefs), and (c) the perceptions about possible effects of a behavior and the assessment of the effects (Chung, & Fong, 2015).

Behavioral beliefs can generate either a favorable or unfavorable attitude about the behavior in question. Control beliefs lead to perceived behavioral control, and normative beliefs give rise to subjective norms—i.e., social pressure (Chung, & Fong, 2015). When combined, discernment, subjective norms, and attitudes about a certain behavior result in the development of behavioral intention. In essence, the more positive the subjective norm, and the higher the perceived behavioral control, the higher the level of intention to perform a certain behavior. Lastly, it is expected that individuals implement their intentions when given sufficient control over their behavior (Chung, & Fong, 2015). As a result, the intention is presumed to be the instantaneous antecedent of a behavior.

The theory of planned behavior has been widely used to explain health-related behaviors, such as participating in physical activities; adopting healthy meals, such as vegetables and fruits; and engaging in mammography screenings to detect breast cancer (Abamecha, Godesso, & Girma, 2013). Some scholars, including Sniehotta, Presseau, and Araújo-Soares (2014), have leveled strong criticism against the use of the TPB model, claiming that it has limited predictive validity. However, a recent systematic review conducted by Chung and Fong (2015) concluded that TPB can be effectively employed in developing and implementing weight-reduction programs for obese individuals. This review demonstrated that weight-management programs centered on TPB can improve adult obesity outcomes by facilitating weight loss.

Weight-management interventions based on TPB have indicated that effective weight loss is influenced by attitudes, perceived self-efficacy, and subjective norms. The

project leader isolated and classified potential determining factors of weight reduction from the existing literature on weight management, and it is anticipated that the education program will make it possible for obese individuals to achieve sustainable weight loss through programs that promote diet modification and physical activity.

Chapter Summary

A holistic approach to the management of obesity is essential. Empirical evidence has indicated that adult obesity is best managed through multi-component lifestyle interventions that include diet modification, participation in physical activity, and cognitive-behavioral services. Adult obesity management is aimed at facilitating weight loss that leads to a healthy and high-quality lifestyle. The main risk factors for developing obesity include physical inactivity and unhealthy diets. Thus, initiatives targeting these two most important factors are indispensable.

Extant literature has indicated that obesity management in primary care settings is inadequate due to inadequate skills and knowledge among nurses and PCPs about the best methods for managing obesity. It is anticipated that an evidence-based education module focusing on diet modification and participation in physical activity will effectively guide nurses and PCPs in managing adult obese patients. It also is hoped that the program will facilitate the development of positive attitudes and appropriate skills among PCPs in ways that will encourage patients to modify their nutritional behavior in order to live healthier lives. The next chapter presents a discussion of the approach and the techniques that will be used to carry out the quality improvement initiative.

Section 3: Approach/Methods

Introduction

The educational program proposed in this project is aimed at addressing an identified practice deficit within a specific healthcare organization by empowering nurses with knowledge and skills required to successfully manage adult obesity. The program plan was validated by a team of five experts in the field of obesity management, and I will implement the program after graduating from Walden University. The plan-do-study-act (PDSA) model was used as the foundation for this project. In this chapter, I describe the approach I followed in designing and developing the educational program.

Approach

The PDSA model is a quality improvement tool that can be used to introduce changes aimed at promoting improvement within organizations. The tool has been effectively used by thousands of healthcare institutions in a number of countries to improve health outcomes and processes. In comparison with the more conventional epidemiologic modules (such as randomized controlled studies, in which an intervention is established in advance and the variances are controlled for or eradicated), the PDSA model offers a realistic and systematic approach for testing and promoting improvements in intricate systems. According to Taylor et al. (2014), the four stages in the PDSA model imitate the systematic process of developing and testing hypotheses in scientific studies.

The PDSA model is a valuable tool because it facilitates rapid evaluation of interventions and provides flexibility in adopting the change in line with feedback received. The interactive approach used in evaluating interventions guarantees that

appropriate solutions are developed (Taylor et al., 2014). The model gives its users a chance to act and learn while at the same time minimizing the resources required and risks to patients. In addition, it has been proven that the model provides opportunities to involve stakeholders, thus improving cooperation and increasing confidence in the interventions implemented.

Just as it is with scientific research techniques, the documentation of each PDSA stage is essential for ensuring that knowledge is acquired to support institutional memory and facilitate knowledge transfer to other institutions (Melnyk & Fineout-Overholt, 2011). The next section presents step-by-step details and describes how the PDSA cycle was implemented in this project.

Step One: Planning

In the PDSA cycle, the first step is defining what is to be accomplished (the aims). In particular, the changes designed to promote the improvement should be made clear (Taylor et al., 2014). The overarching aim of this project was to determine whether developing an education program promoting diet and physical activity for obese adults in primary care settings would improve adult obesity outcomes. The education program is also meant to prompt nurses and nurse practitioners in primary care settings to address diet modification and physical activity interventions as well as provide evidence-based guidelines that indicate how lifestyle interventions can be improved to address adult obesity.

The main steps in Stage 1 of the PDSA model as practiced in this project study included the following activities:

- After conducting a comprehensive literature review, I developed an education program focusing on modifying dietary habits and promoting physical activity among obese adults between 40 and 65 years of age (see Appendix A).
- The contents of the education program on diet modification and physical activity were reviewed by a team of five external experts in the field of adult obesity management (see Appendices B, C, and D).
- I assumed the leadership role and coordinated all activities and processes involved in the project. I employed interpersonal relationship skills and transformational leadership practices throughout the project design and will continue to do so throughout the implementation and evaluation phases.
- The project commenced by assembling a team of knowledgeable primary care staff members who work directly with adult obese patients. This team included nurses and nurse practitioners, who were encouraged to share their expertise and knowledge about adult obesity management.
- Upon recruiting the team members, the project leader clarified their responsibilities, and they were consulted before developing the meeting schedule.

Step Two: The "Do" Step

The second stage in the PDSA cycle is the "doing" step. This step involved reviewing literature that subsequently guided the team in developing an education program that emphasized diet modification and physical activity in the management of adult obesity. This literature also guided the team in developing pretest/posttest

questions, a training protocol, an implementation plan, and an evaluation plan (see Appendices A, E, and F). The implementation of the project will occur after this DNP candidate graduates from Walden University.

Step Three: Study

The third step in the PDSA cycle involves analyzing data to determine whether the change that was implemented brought about the desired improvement. The following activities will be implemented during this phase:

- The barriers and risks involved in implementing the education program will be evaluated.
- The measured results of the education program will be compared with the predicted outcomes to determine whether the project led to the expected improvements.

Step Four: Act

The fourth step of the PDSA model consists of thoroughly reviewing the project, after which recommendations will be provided about how the plan can be made better in the next cycle.

The Project Team

A team can be described as a group of people working together to achieve the same objective. Nancarrow et al. (2013) recommended that a group should be heterogeneous in its components but with a homogenous mindset. In essence, an interdisciplinary project team should have a wide range of expertise and knowledge in the service of the same goal. Klipfel et al. (2014) asserted that defining the roles and the

responsibilities of each team member eliminates unnecessary conflicts and enhances performance.

According to O'Modhrain (2013), an effective team is not built by randomly selecting team members. The output of the project to a huge extent depends on the expertise possessed by the team members; thus, the process of selecting the team members should be meticulously premeditated. One has to select team members who possess the required knowledge and expertise in order for the set objectives to be accomplished. The primary objective of establishing a team for this project was to gather diverse team members with extensive expertise in the field of physical activity and nutritional modification in order to achieve the goals of the project. O'Modhrain (2013) recommended that project leaders should involve team members who are experts in a particular area but who also possess a breadth of expertise and experience that can integrate the know-how and understanding of other team members. The team members were picked based on their qualifications, their expertise, their flexibility, and their interest in making meaningful changes to the current status of adult obesity. The members of the team included the following:

- Project team leader: The role of the project leader was to facilitate, harmonize, and educate the members of the team throughout the quality improvement program. The team leader was also assigned the responsibility of adopting and implementing the guidelines as well as coordinating all activities and disseminating the essential outputs.

- Quality improvement coordinator: The quality improvement coordinator was given the task of analyzing data and distributing the outcomes to the multidisciplinary team.
- Information technologist: The information technologist was a nursing informatics specialist who established nonpharmacological electronic medical record screens and reports.
- Two nurses and two nurse practitioners: Their duties were to share their expertise and contribute to the overall project.

The team met every two weeks to discuss the progress, the achievements, the challenges, and the inputs that could be used to improve the project. Rashidi and Davari (2016) explained the importance of effective leadership in weight-management programs, and it is expected that a transformational leadership style will aptly guide and sustain the obesity management program.

Team Building and Teamwork

As the leader of this project and the project leader/DNP candidate, I applied various transformational leadership skills in order to ensure that the project development was successful. The project development was successful as a result of incorporating the following elements of effective teamwork.

Team Leadership

The main leadership skills that were essential for the success of the project development included the ability to harmonize team members' activities, motivate team members, plan effectively, direct team members, and assign relevant tasks (Kay, Yacef,

& Reimann, 2006). Transformational leadership skills were applied throughout the project development and will continue throughout the implementation phases. The team members were involved in all decision-making processes and were consulted prior to task assignment. This consultation process was aimed at ensuring that the team members remained motivated by being matched up with appropriate responsibilities or tasks based on their skills and preferences (Chou, Lin, Chang, & Chuang, 2013).

Backup Behaviors

Backup behaviors were involved in helping team members perform their roles by identifying their needs and providing essential resources that assisted them in accomplishing the set goals. Backing up behavior has been cited as a critical requirement for accomplishing the goals set by team members.

Adaptability

As project leader I was capable of adjusting and adapting depending on the availability of resources and responded to change based on information provided by team members. In addition, I was able to identify areas that required improvement while being responsive to changing circumstances (internal and external circumstances).

Team Orientation

As project leader I was able to take into consideration and involve team members during group meetings and focus on team goals rather than on the goals of individual team members.

Mutual Performance Monitoring

I nurtured a shared understanding of the team environment and employed suitable techniques for monitoring project performance (see Kay et al., 2006).

Shared Mental Models

As project leader I was able to predict the needs of the team and find appropriate strategies that were used to address the needs of team members without interfering with the project.

Mutual Trust

I remained open to feedback as well as recognized and honored the ability of the team members to perform their roles and protect the interests of their colleagues.

Closed-Loop Communication

I followed up to certify that the team members possessed a clear understanding of the project implementation requirements (see Kay et al., 2006).

Project Team Meetings

Another practical leadership skill essential for this project was the ability to conduct effective team meetings. According to Tropman (2013), meetings should be conducted with a purpose, and all attendees should be kept aware of the objectives. Regular face-to-face meetings were held to keep every team member aware of the progress made and provided an opportunity to discuss how the project could be improved. The project leader contacted the team members prior to each meeting to identify relevant points to be discussed during the meetings. The team members discussed and agreed upon the schedule and the venue during the first meeting, and the

team meetings were held once every two weeks on Saturdays from 2:30 p.m. to 4:30 p.m. Lehfeldt (2016) asserted that pre-planning meeting dates is one of the most effective techniques in ensuring well-planned and well-attended meetings.

Ethical Considerations

In terms of Walden University guidelines for ethical compliance, this project can be considered low risk. Considering the research topic and the data collection techniques, this is a minimal-risk project because there are no significant foreseeable risks for the participants as a result of their participation in the project. Nevertheless, it is a mandatory requirement of Walden University to certify that all research involving human participants adheres to the established ethical guidelines in conducting research. The IRB approval number for this project is 10-10-16-0528646. The research approach used in this project is supported by Creswell (2013), who has acknowledged that responsible researchers ought to engage in necessary proactive measures while planning and designing research in order to handle any ethical issues that may arise in the process of conducting the research. I sought ethical approval from Walden University's institutional review board (IRB) before embarking on the development of this project. The benefits of the project, such as obtaining a healthy weight, will be explained to the participants, and there will be no monetary compensation in exchange for their participation. The participants also will be assured of their privacy; neither their names nor other identifying information will be exposed.

Budget

The education training program will be conducted during the nurses' regular schedules and during working hours. It is expected that implementing the diet and physical activity education program will not result in additional financial effects. Because the training program will be conducted during working hours, this will decrease cost to staff members.

Chapter Summary

This chapter described the multi-disciplinary team members and their roles, the PDSA cycle and the steps followed, and the responsibilities of the project leader. The chapter concluded with a discussion on resources required and ethical considerations within the context of the proposed project. The next chapter consist of an extensive analysis of all the materials that were developed. The implementation of this project will be completed after this DNP candidate has graduated from Walden University.

Section 4: Findings, Discussion, and Implications of the Findings

Introduction

The purpose of this DNP project was to develop and validate an education program that emphasizes diet modification and physical activity for obese adults between 40 and 65 years of age. The goals of the project were (a) to determine physical activity and diet modification mediators of behavior that can be engaged in to reduce the current incidence of obesity among adult patients in primary care settings, (b) to promote self-determination among obese adults leading to weight reduction, and (c) to ensure that adult obese patients experience the greatest benefits of a physical activity and diet modification program. The outcomes of the project were as follows:

- Outcome 1: Education Program Module (see Appendix A)
- Outcome 2: Pretest/Posttest Content Validity (see Appendix F).
- Outcome 3: Education Training Program Module Protocol (see Appendix E)
- Outcome 4: Implementation Plan of the Program Module
- Outcome 5: Evaluation Plan of the Program Module

In Section 4 of the project, I discuss the findings and evaluate the project. I explain ihe implementation and evaluation plans, the project's strengths and limitations, and the research literature supporting the program in this section.

Outcome 1: The Education Program Module

Discussion

The education program Module (Appendix A) was developed after obtaining IRB approval from Walden University. This program module was developed following an

extensive literature review of evidence-based resources focusing on lifestyle modification strategies in the management of adult obesity. The education program module and the evaluation plan (see Appendix B) were distributed to five experts so that they could review each objective related to the program module plan and content. The expert reviewers were asked to rate each objective using a four-point Likert scale response format: 1 = Strongly Disagree, 2 = Disagree, 3= Agree, 4 = Strongly Agree. The experts were asked to provide comments, and they returned the program module along with their evaluations within two weeks. The experts compared the program module content with the objectives, and each of the five experts rated all objectives pertaining to the program content positively. The experts were chosen based on their extensive experience in the management of obese adults in obesity specialty clinics and primary care clinics. Three experts were very experienced in (a) commencing weight management programs, (b) understanding nutritional and lifestyle interventions, and (c) long-term monitoring of adult obese patients.

Evaluation

The evaluation was conducted using a four-point Likert scale response format: 1 = Strongly Disagree, 2 = Disagree, 3= Agree, 4 = Strongly Agree. The summary of the evaluation is noted in Table 1. The results indicate that each of the expert reviewers (N = 5) rated the seven objectives with the highest score, 4 = strongly agree. This indicated an interrater reliability of 100%. Based on the rating by all five experts, all objectives were met, which indicated 100% program acceptance. One of the expert reviewers stated that

"this is an excellent program and well needed in primary care settings and will improve the knowledge of nurses, nurse practitioners, and other health care providers."

Table 1

Expert Reviewer Responses

Objective number	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5
1	4	4	4	4	4
2	4	4	4	4	4
3	4	4	4	4	4
4	4	4	4	4	4
5	4	4	4	4	4
6	4	4	4	4	4
7	4	4	4	4	4
Total	28	28	28	28	28

Data

All the program module objectives were rated 4 (Strongly Agree) by each of the five content experts, indicating that the program module met the program objectives (see Table 1).

Recommendations

One of the expert reviewers recommended adding community resources into the program. She said linking obese patients to existing community resources to match their needs will provide support for weight loss and assist with sustaining weight loss and healthy living. Another expert recommended adding an item to the questionnaire asking whether any member of the patient's family has died before the age of 50 and, if so, the cause of the death. She noted that it is very important to know whether the patient has a

family history of cardiac problems, which could lead to more thorough investigation before recommending physical activity.

Outcome 2: Pretest/Posttest Content Validity

Discussion

The pretest/posttest consisted of 13 items. The program plan, the pretest/posttest, and the answer key were distributed to five experts in order to appraise the construction of each individual test item. A few corrections were suggested by the experts, which led to revision of three items of the pretest/posttest. The five experts were asked to establish the content validity of each pretest/posttest item (see Appendix F).

Evaluation

The content validity of this program module indicates that the pretest/posttest items effectively represent the content area addressed in the program module. The five experts were asked to determine the content validity of each pretest/posttest item using a four-point Likert scale: 1 = Not Applicable, 2 = Somewhat Applicable, 3 = Applicable, 4 = Very Applicable (see Appendix G). All five experts rated each item as "very applicable." The five experts evaluated the content using the content validity index scale (see Appendix H).

Data

The content validation index score = 1.00 (see Appendix H). All five content validity experts rated each element as "very applicable." Adding the ratings for each of the 13 items by the five content experts led to the content validity index score of 1.00 (see

Appendix H) indicating that each pretest/posttest item replicate the content and objective of the education program module.

Recommendation

Two of the five external experts in evaluation and measurement suggested rewording three items on the pretest/posttest for clarity. The revisions of the three items on the pretest/posttest suggested by the two experts were incorporated accordingly.

Outcome 3: Education Program Module Training Protocol

The project team and I established a program module training protocol for managing obesity among adult patients. The purpose of this training protocol was to provide a step-by-step approach for implementing an adult diet and physical activity program module at the primary care clinic. A protocol is a directive tool aimed at supporting standards of care (Flynn & Sinclair, 2005). The goal is to provde a consistent direction for training nurses and nurse practitioners to administer an adult diet and physical activity program that will enable them to provide evidence-based care to all obese patients seeking care at the primary care clinic.

Evaluation

The program team and I reviewed, evaluated, and revised the training protocol for clarity and relevance to the health care organization and ultimately approved it.

Data

None.

Recommendations

The project team members and I estimated that the total amount of time required for each training sesion is 3.5 hours, with an additional 30 minutes to complete the test. The minimum acceptable score for the test is 80%. The project team and I futher agreed that if an individual fails the test twice, that individual will be required to complete the traning program again before taking the test for the third time. All nurses and nurse practitioners are required to attend the training upon being hired into the organization and again annually.

Outcome 4: Implementation and Evaluation Plan

Discussion

During the last team meeting, I presented the implementation and evaluation plan to the project team members. The team members were made aware of unexpected hurdles that could arise during the implementation and evaluation period. The team members identified inadequate training of staff as an organization, factors that can negatively affect the implementation and evaluation of the project. One of the ways to resolve this type of problem is to provide adequate training to the staff prior to the implementation and evaluation period (Hwang, Lin, & Lin, 2012) and to retrain staff as needed.

Evaluation

The team discussed inadequate training as the organizational factor that could negatively impact or slow the implementation and evaluation process. The team members will be well trained before the implementation and evaluation process begins.

Data

None.

Recommendation

The implementation plan and evaluation plan will be used to evaluate and measure results within the primary care clinic. The short-, medium-, and long-term outcomes also will be measured within the primary care clinic.

Qualitative Summative Evaluation

Discussion

Summative evaluation is an assessment approach implemented at the conclusion of a project to measure the result of the project or to measure what the project team leader has accomplished (White & Dudley-Brown, 2012). This type of evaluation technique is used by project leaders to obtain feedback on areas that need improvement as well as growth. At the conclusion of the project, a summative evaluation questionnaire consisting of seven items was administered (see Appendix L) to each of the team members to evaluate (a) the team's participation and contribution in establishing the program module plan, the pretest/posttest, and the training protocol; (b) how I led the team during the project; and (c) the project content and process. All the team members participated in this evaluation.

Evaluation

All the team members returned their questionnaires with responses. The summary of the team responses is presented in Appendix M.

Data

The themes within the data included the following: The project team rated my leadership skills, how I (team leader) led the meetings, and the results of the project. The themes are discussed below.

DNP student with the team. The first theme that emerged was leadership. The team described my leadership style as transformational leadership through inspiring, coaching, mentoring, and allowing team members to share ideas and thoughts about the project (Baker, Day, & Salas, 2006). All the team members contributed to establishing the program module, the pretest/posttest, and the training protocol.

Student role as a team leader. The team members felt that throughout the meetings I stayed focused on the goals and objectives of the project, maintained a collaborative team environment, helped team members set priorities, assigned responsibilities, and maintained effective communication within and outside the team. Each of the team members appreciated the opportunity to be part of the QI initiative establishment process.

Product result. The third theme that emerged was a complete program plan. The team members believed that the program plan would be a success as long as the teamwork continued.

Implementation Plan

Theory provides a basic structure for projects and enables positive change in delivering healthcare (McEwen & Wills, 2014). These educational initiatives regarding diet and physical activity for adult obese patients will be implemented using the theory of

planned behavior. The translation of research findings to practice in nursing can be made effective through the use of theory (Grove, Burns, & Gray, 2012). Drawing on the theory of planned behavior will make possible the opportunity to explore the influence of the education module on individuals as well as within healthcare organizations. Nurses require knowledge and skill to carry out healthcare behaviors (implementation of adult obesity management), and this educational initiative will equip nurses and nurse practitioners with the necessary knowledge and skills to successfully implement an adult obesity management program within the primary care clinic.

Nurses and nurse practitioners will assess patients' intentions to lose weight through their attitudes, subjective norms, and apparent behavior control. The theory of planned behavior can be used to predict how nurses and nurse practitioners can provide care to adult obese patients. Understanding nurses' perceptions and beliefs about obese patients can help to provide the best healthcare interventions for each patient. When a change process is successful, it can lead to desired behavior.

The theory of planned behavior can be used to analyze the training of nurses about the change process within the primary care clinic. The theory of planned behavior assumes that individuals can effectively implement certain required behaviors when they believe they have mastered the behavior and have influence over the behavior (Visser, 2010). The required behavior must be support by the organization. Implementation of adult obesity management will equip nurses and nurse practitioners with information required to effectively provide education to adult obese patients regarding diet and physical activity that can increase their motivation to engage in the desired behavior

(healthy diet, physical activity, and weight loss). There are three factors that motivate individuals to engage in a behavior: (a) attitude or feelings about the behavior, which could be positive or negative; (b) subjective norms, which refers to how important other individuals perceive the behavior to be; and (c) apparent behavior control, which refers to whether the individual will be able to overcome any difficulties involved to successfully implement the behavior.

The theory of planned behavior will be used to examine the extent to which nurses and nurse practitioners (staff members) are able to provide education to obese patients about lifestyle modification, the degree to which staff members feel satisfaction regarding their ability to provide healthy teaching, the difficulties staff members experience in providing such teaching, and whether the upper management support staff members in providing obese patients with such teaching.

Implementation Plan

The core purpose of project evaluation is to determine whether the initial objectives were accomplished and to find ways of improving the project. The education program on weight management for obese patients was evaluated during the multi-disciplinary monthly meetings in order to identify opportunities for improvement. According to Kelly (2014), in healthcare practice settings, data can be used in diagnosing and monitoring the outcomes of treatment implementation. Whenever a quality improvement project is introduced, ongoing evaluation is necessary to monitor outcomes and to compare the outcomes with the expected outcomes. To evaluate this program, a logic model of evaluation will be used to pinpoint the effectiveness of the program after

implementation. A logic model is a graphic representation of how a program is anticipated to work and links outcomes with actions and hypothetical expectations of the program (Hayes, Parchman, & Howard, 2011). A logic model provides an illustration of a program to show whether a program module will accomplish what it is intended to achieve. The evaluation plan for this project is illustrated in Figure 1.

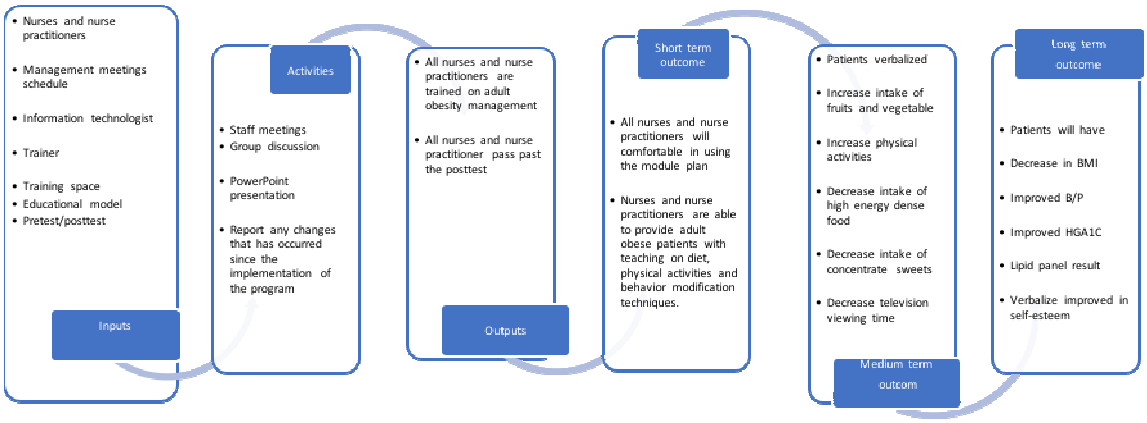

Figure 1. Logic model for program evaluation

Literature Supporting the Program

A comprehensive review of literature about the management of adult obesity provided substantial evidence to support the development of an education training module focusing on diet modification and exercise as key interventions in managing obesity among adults between 40 and 65 years of age (Aadland et al., 2013; American Academy of Family Physician, 2017; Bauer, Briss, & Goodman, Bowman, 2014; Beckley University of California, 2015; CDC, 2015; Dietary Guideline of America, 2010; Franz et al., 2007; Goodpaster et al., 2010; Karlsen et al., 2013; Miller & Miller, 2011; National Institute of Diabetes and Digestive and Kidney Diseases, (2012); Nordmann et al., 2006; Unick et al., 2011; U.S. Department of Health and Human Services, 2008; University of

Maryland School of Medicine, 2017; Warburton, Nicol, & Bredin, 2006; Westman, 2014). Dietary modification is a key technique in lifestyle-based interventions. The main requirement in this technique is that the total energy intake should be less than the total energy output.

Most recommendations on weight management emphasize consumption of a balanced diet composed of low levels of refined sugars, low levels of saturated fat, and reduced caloric intake (Goodpaster et al., 2010). However, long-term adherence (as well as personal barriers, such as income level, education level, and medical comorbidities) should be considered when determining the diet components (Silfee et al., 2016). The education program in this project emphasized the development of weight management plans tailored to patients' needs and preferences about weight reduction, which is an evidence-based intervention supported by existing research (Aadland et al., 2013; Franz et al., 2007; Unick et al., 2011).

Another key element of effective obesity management is participating in physical activity. Physical activity includes sports as well as non-sport activities, such as leisure activities, work-related tasks, and household activities. Wilson (2016) has claimed that relying exclusively on physical activity to lose weight can be challenging, considering that the requirements to be met are in most cases unrealistic for a large number of obese individuals. Nevertheless, exercise plays a crucial role in multi-component lifestyle interventions for a number of reasons.

To start with, it has been proven that a combination of physical activity and diet modification is one of the most effective strategies in losing weight and sustaining a

healthy weight among obese and overweight individuals. The Look Ahead Research Group (2014) observed that increased physical activity was positively correlated with initial and sustained weight loss in obese adults living with type 2 diabetes. A systematic review by Adland and Anderssen (2013) reported that a recommendation of 30 to 60 minutes of moderate-intensity physical activity (3 to 5 days in a week) led to weight loss between 1 kg and 3 kg in obese and overweight adults.

Although some studies have reported positive effects of exercising among obese adults, the level of participation in physical activity among patients seen in primary care settings remains low. According to a report released by the Centers for Disease Control (CDC) in 2013, approximately 80% of US adults do not meet the recommended guidelines for physical activity (CDC, 2013). Various barriers to participation in physical activities have been identified among adult obese patients receiving treatment in primary care settings. Some of these barriers include inadequate patient knowledge; inadequate primary care provider education; and various cognitive factors, such as low levels of self-efficacy (Silfee et al., 2016). Addressing these barriers was the primary impetus for developing the education curriculum, which is founded on evidence-based interventions supported by recent research on the management of adult obesity.

Implications

Evidence-Based Practice and Social Change

Lifestyle interventions are preferred when it comes to the management of adult obesity. The educational module developed to increase the knowledge and skills of nursing staff members about adult obesity management has the potential to improve

obesity outcomes at the primary care clinic. Most programs in primary care settings have implemented a one-size-fits-all model of developing diet menus for obese adults; consequently, these programs have failed to address the unique socio-economic circumstances and other needs of patients living with obesity.

Effective implementation of this project will facilitate adoption and implementation of individualized diet modification and physical activity participation plans in the management of adult obesity. The project will promote positive changes in practice by encouraging healthcare providers to adopt individualized approaches when developing diet menus and exercise programs for adult obese patients. The patient population must be involved in developing these weight-management plans. The overarching goal of the education module is to ensure that no adult patient living with obesity and comorbidities will leave primary care clinic with the belief that he or she has received insufficient education about diet management, the importance of participating in physical activities, and strategies for self-management. Thus, this project has the potential to contribute to positive social change by promoting healthy diets and reduced sedentary lifestyles, reduced BMI, improved physical fitness, and improved quality of life for obese adults.

Moreover, a critical analysis of the content validation data indicated that the education program is fundamentally sound, aligned with the theoretical framework, and able to positively influence clinical practice among nurses managing adult obesity. The education program format can be adapted in variety of primary care settings, making this adult obesity healthcare program applicable to other clinics serving and treating similar

patient populations. The education program provides strategies for educating patients about diet modification and the importance of participating in physical activities. The contents of the education module were revised based on feedback received from five experts.

Future Research

The purpose of this DNP project was to develop and validate a diet modification and physical activity program for managing adult obesity. I am planning to implement the education module at the primary care clinic after graduating from Walden University. The implementation of this program will be a second step towards validating the content items of the education module and demonstrating educational accomplishments for a doctorally prepared nurse. It is anticipated that the program will lead to (a) increased knowledge and improved skills among nurses regarding obesity management and (b) improved patient education about adherence to diet modification and participation in physical activity in order to maintain a healthy weight.

Strengths and Limitations of the Project

Strengths

The primary strength of this project is its ability to address the unique needs of obese adults between 40 and 65 years of age. Complications associated with excessive body fat can be reduced by effectively providing education to patients (Manzoni et al., 2015). The primary goal of this project is to implement the educational program in order to increase the knowledge and improve the skills of nurses in their efforts to manage adult obesity among senior citizens between 40 and 65 years of age. Currently, the the

primary care clinic does not have an education program for senior residents seeking care for obesity-related complications. As a result, nurses working at this healthcare organization are unable to provide care in this area based on best practices.

Another strength of this capstone project is that the education module was developed and guided by the theory of planned behavior (TPB), a middle-range theory with clear theoretical constructs. Furthermore, a comprehensive literature review was conducted that validated diet modification and participation in physical activity as the two most effective interventions in managing adult obesity, thus providing support for the development of the education program. The contents of the program were validated by a team of five experts in adult obesity management, and the feedback obtained from the reviewers was used to improve the appropriateness of the educational material.

Limitations

One limitation associated with this capstone project is the fact that the educational program was initiated with one primary care setting in mind, which can limit the generalizability of the project. Another limitation is the constant restructuring of the management at the project site may delay the implementation of the project.

Analysis of Self

Becoming a doctoral-prepared nurse comes with prominent roles and challenges. It is essential that every nurse practitioner is aware of the devastating effects of adult obesity on patients, their families, society, and the overall healthcare system. Evidence-based practice by nurses refers to the process of establishing research questions that address clinical problems, collecting information, and appraising evidence to answer the

research questions (Melnyk & Fineout-Overholt, 2011). The rigorous process of completing this DNP project resulted in professional growth and improvement that is invaluable. Because of the skills and expertise developed during my DNP journey, the DNP program has equipped and positioned me to function as an advanced practice nurse within the healthcare system.

As a DNP-prepared nurse, I have acquired skills to bring positive changes to my practice area and explore how evidence-based practice may lead to improved clinical outcomes and patient outcomes. Zaccagnini and White (2011) asserted that doctoral-prepared nurses can bring positive change to bedside practices and leadership positions, thus improving patient outcomes in the healthcare sector. As a result of this project, I have become not only an advanced nurse practitioner skilled in clinical practice but also a practice leader that can influence various healthcare settings in meaningful ways. The following subsections describe how I have developed as a scholar, project leader, and nurse practitioner.

As a Scholar

Incorporating evidence-based practice and nursing leadership skills within a clinical care setting demonstrates that nursing has a significant and credible presence in the dynamic and intricate US healthcare system. The DNP degree reinforces prevailing clinical competencies and prepares nurses for possible changes in the healthcare system (Zaccagnini & White, 2011). The changing nature of the twenty-first century healthcare system requires advanced practice nurses to be continuously aware of new information and possess the skills required to translate research findings into practice (Melnyk &

Fineout-Overholt, 2011). As a scholar, I am fully prepared and positioned to implement positive changes in healthcare practices at my workplace. The DNP program has provided me with the ability to progress as a scholar as well as the knowledge and skills to bring positive change to various healthcare settings.

Developing an educational module to help manage adult obesity has increased my awareness of the vast array of resources that can be used to improve adult obesity outcomes in primary care settings. It is my goal to implement the proposed project now that the content validity of the module has been established. As an advanced practice nurse, I believe that the need for an education module for nurses based on evidence-based practices cannot be overemphasized. Lifestyle interventions focusing on diet modification and participation in physical activity have been championed as evidence-based practices in managing adult obesity (Franz et al., 2007). However, there has been little progress at the primary care clinic in terms of adopting and implementing recommendations for managing adult obesity, and the education program proposed in this DNP project will serve as a starting point for adopting effective practices.

The integration and application of this education program within primary care settings has the potential to improve the quality of care provided to adults living with obesity. Integrating the program into practice also will enable me as a scholar to translate evidence-based knowledge into clinical practice. This process of translation is an essential activity for doctoral-prepared nurses (Melnyk & Fineout-Overholt, 2011).

As a Project Developer

As a potential project developer, I have managed the diet modification and physical activity participation program from the planning phase, and now the program is entering the implementation phase. The education module is the starting point for nurses to provide patient education at the primary care clinic. Validating the education module helped me and other care providers at primary care clinic to identify areas that require improvement. This education module may serve as the basis for developing similar programs in other care settings with similar patient populations.

Advanced nurse practitioners are expected to address noteworthy healthcare problems arising from their interests and practice settings (Zaccagnini & White, 2011). The fact that I am a nurse practitioner with more than 23 years of experience in the healthcare industry, and that I have lost close friends as a result of obesity-related complications, has contributed to my decision to focus on developing an education module to improve management of adult obesity in primary care settings. Developing a module to improve management of adult obesity has been possible through the guidance provided by my committee chair and my preceptors during my DNP journey.

As a DNP-prepared nurse, I am expected to possess the knowledge and ability to translate evidence-based findings into practice. In addition, as a DNP graduate, I was expected to effectively coordinate the multidisciplinary project team and implement an evidence-based project designed to improve practice directly or indirectly. Developing the education module was not a straightforward task for me because it involved numerous

amendments based on the feedback I received from the committee members and the five nursing experts who evaluated the validity of the education module.

The entire process required exhaustive groundwork and planning, and each task had to be accomplished in a timely manner. I faced substantial time-management challenges in the beginning, and I had to readjust my schedule while at the same time increase my ability to establish and maintain a given schedule. The process of developing the education module and receiving feedback from the five nursing experts provided me with an opportunity to improve my time-management skills, which will be valuable as I continue to develop and implement future projects.

As a Practitioner

The DNP program helped sustain my focus on health promotion by facilitating the provision of a patient education model centered on evidence-based practices that promote diet modification and physical activities that lead to a healthy life. According to Zaccagnini and White (2011), the development of nursing knowledge emphasizes an inclusive approach that focuses on assessing, planning, implementing, and evaluating programs that have the potential to lead to improved patient outcomes. Doctoral-prepared nurses are required to reflect upon and respond to changes in the healthcare environment. The DNP program provided me with essential knowledge and the expertise to be an agent of change in the healthcare sector. The dynamic nature of the US healthcare system requires practitioners to possess essential scientific knowledge and skills to promote quality patient outcomes.

As a doctoral-prepared nurse, I am now well positioned to introduce and promote positive practice at the primary care clinic. I am fully equipped to promote the adoption and implementation of evidence-based practices that will improve the quality of care provided to obese patients. Through my practicum experience, I have developed the necessary skills for the increasingly complex leadership roles and practice problems I will face. I am confident that I can work as a nurse leader, policy maker, and administrator in any healthcare setting.

As mentioned earlier, a doctoral-prepared nurse has the potential to promote positive practice change in any healthcare setting (Zaccagnini & White, 2011). As a practitioner, my professional responsibilities and expectations have now changed. I now have a new role, which is to create an environment that encourages adoption and implementation of evidence-based practices to solve problems in the contemporary healthcare system (Zaccagnini & White, 2011). Developing and validating the education module for nurses based on the best available evidence is a crucial role for me as a doctoral-prepared nurse. I will continue to be an active advocate for evidence-based practices in managing adult obesity and comorbidities at my specific workplace and in primary care settings in general.

Future Professional Development

I have grown as a scholar, practitioner, and project leader through the process of completing the DNP program. My personal growth as a nurse practitioner has evolved from that of a registered nurse to that of a doctoral-prepared nurse. I feel that my journey as a nurse has ushered me from a novice nurse to an expert. Developing the education

program for nurses is only the beginning for me in my efforts to address the practice problem of inadequate knowledge and poor attitudes among nursing staff members regarding obesity management. Implementing this project has the potential to bring positive social change in the professional development of the nursing staff members at the primary care clinic as well as improve the quality of patient education provided to adult obese patients.

Section 5: Scholarly Product

Project Summary

Substantial evidence has supported the conclusion that adult obesity can best be controlled through diet modification and participation in physical activity (Franz et al., 2007; Unick et al., 2011). Despite the existence of effective therapeutic options, inadequate control of adult obesity has continued in primary care settings. The advice of primary care providers about the management of obesity is essential; however, healthcare providers should possess the required knowledge to provide essential education to obese adults in order to initiate self-management. This DNP project proposes an evidence-based practice that increases the knowledge of nurses about diet modification and physical activity in the management of adult obesity. It is expected that the education program will lead to an improved understanding among nurses, which will translate to better care of adult obese patients between 40 and 65 years of age.

Dissemination Plan

Dissemination of scholarly findings is an integral role of doctoral-prepared nurse practitioners (Bradley, McSherry, & McSherry, 2009). DNP-prepared nurses participate in evidence-based practices for the purposes of initiating positive practice change and promoting improvements in the quality of care provided to patients. To accomplish the goals of this DNP project, I collaborated with other healthcare providers within the nursing profession as well across other healthcare disciplines, and together, we worked to achieve outcomes that are important to the primary care clinic. The focus of this project

was developing an education module to manage adult obesity by participating in physical activity and diet modification.

Written Dissemination

Disseminating the findings from DNP projects is essential in providing new evidence that informs practice (Melnyk & Fineout-Overholt, 2011). Zaccagnini and White (2011) stated that the two main purposes of disseminating scholarly findings are (a) sharing the findings with practitioners working with similar patient populations or in similar care settings, and (b) presenting the findings to scientific community members and key industry stakeholders. Disseminating the findings from this project is crucial in informing nurses about the importance of diet modification and participation in physical activity when managing adult obesity. The participation of nurse leaders in research and publishing findings is essential in advancing the nursing profession (Grove et al., 2012).

I intend to publish the findings of this project in a scholarly nursing journal to allow online accessibility to the education program. Oermann, Shaw-Kokot, Knafl, and Dowell (2010) noted that it is essential for researchers to identify an appropriate journal in which to publish their findings. I will seek publication in a journal that has an open viewing policy whereby practitioners and patients can view the education module and the findings of this project without purchasing a subscription. To improve the likelihood of publishing the findings, the final manuscript will be reviewed for clarity by experts and nonexperts on obesity management. I also have asked clinical experts to review the education program in order to validate its content.

Oral Dissemination

The second strategy that I will use to disseminate the findings of this DNP project is orally presenting the results. Zaccagnini and White (2011) recommended that a doctoral-prepared nurse should possess and demonstrate professional communication skills in their day-to-day practice activities. Oral presentations of the findings will enable me to interact with the audience, share the journey through the research process, and communicate passion for the research topic. The findings from this project will be presented to the stakeholders during an internal meeting at the primary care clinic. The internal meeting will enable me to share the outcomes of implementing the education module among the nursing staff.

Summary and Conclusions

Obesity is a serious chronic health condition associated with substantial economic, psychological, and medical effects. The primary causes of obesity include physical inactivity, unhealthy meals, social environmental factors, imbalance between energy intake and energy expenditure, and other factors. The prevalence of obesity as a chronic health problem has been increasing at an alarming rate in the United States and across the globe. Lifestyle interventions have been the recommended method of managing adult obesity in primary care settings. Nurses are in most cases the first point of contact in primary care settings and have an essential role to play in assessing individuals at risk of obesity. However, reports have indicated that primary care providers are inadequately trained to treat obese patients. Current research in the field of weight

management has recommended multicomponent lifestyle interventions in managing adult obesity.

The main objective of this DNP project was to develop an education program focusing on obesity management through physical activity and nutritional modification for adult obese patients between 40 and 65 years of age seeking care in primary care settings. The education program was developed based on the theory of planned behavior and recommended practices in the management of adult obesity. To accomplish the goals of this project, the curriculum was reviewed by a team of five experts in an effort to establish content validity. The primary contents of the education plan included factual knowledge, motivation, self-management, and behavioral change. The outcomes of the content validation process indicated that the education program has the potential to increase the knowledge of nurses about the management of adult obesity and translate that knowledge to improved patient outcomes.

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Appendix A: Educational Program

Problem: The problem identified in this DNP project is that healthcare providers working at my project site are ill-equipped to provide patients with effective obesity management education.

Purpose: The purpose of this DNP project was to develop an adult diet and physical activity educational program. The program includes a protocol to guide the management and training of nurses and nurse practitioners on adult obesity to improve health outcomes.

Goal: The goal of this program is to provide knowledge and dependable guidance for training nurses and nurse practitioners caring for adult obese patients in a primary care setting.

Objectives	Content Outline	Evidence	Method of Presenting	Evaluation Method
Describe adult obesity, the process of diagnosis, and its causes and effects	Introduction A. An overview of adult obesity Definition: Obesity is an accumulation of surplus body fat that could cause health problems or illnesses. Obesity is screened and diagnosed based on body mass index (BMI). BMI is calculated by taking an individual's weight in kilograms and dividing it by height in meters squared (m^2): Classification • Underweight is below 18.5 • Normal weight is 18.5–24.9 • Overweight is 25.0–29.9 • Obesity is 30.0 -39.9 • Extreme obesity is 40 and above Categories of Obesity • Grade I obesity refers to	National Heart, Lung, and Blood Institute (2016) Busetto & Maggi (2015) Williams & Fruhbeck (2009) Freedman, Horlick, & Berenson (2013) National Institute of Diabetes and Digestive	PowerPoint Presentation and Group Discussions PowerPoint Presentation and Group Discussions	Pretests/ Posttests

	a BMI between 30 and 34.9. • Grade II refers to a BMI between 35 and 39.9. • Grade III refers to BMI of 40 or more. • When calculating BMI, take into account body muscle, sex, age, and height. • BMI can overestimate body fat in athletes or underestimate body fat in older individuals. • Obtain waist circumference(WC) to assess risk for metabolic complications: men - WC > 94 cms (Asian men > 90 cms); non-pregnant women - WC > 80 cms (non-pregnant Asian women > 80 cms) B. Risk factors of obesity can be a combination of two items or all in the list: • Genetic • Demographic • Biological • Social-Cultural Factors • Other Factors (e.g., medication) C. Effects of Obesity: • Type 2 Diabetes • Coronary Heart Disease • High Blood Pressure (Hypertension) • High LDL Cholesterol, • Stroke • Osteoarthritis • Gallbladder Disease • Sleep Apnea and	and Kidney Diseases (2012) CDC (2015) CDC (2016)	PowerPoint Presentation and Group Discussions	

	Breathing Problems • Certain Cancers • Decrease in Quality of Life • Mental Illness • Body Pain and Decreased Bodily Functioning			
Describe some current popular diets and various types of physical activity.	Knowlegde of current popular diet and various types of physical activity A. Some popular types of diets: • High-Protein: More than 15% of calories consumed come from protein-rich foods, such as meats, fish, milk, legumes, and nuts • Carbohydrate Counting: Entails keeping track of the amount of carbohydrates consumed. Often used to manage blood glucose levels. • Meal Replacement: Method of controlling caloric intake in form of drinks, bars, or soups. A substitute for a solid-food meal, and usually calories per serving equal 200 to 250 • Low Glycemic Index: Consists of foods that release glucose more slowly into the bloodstream; this includes legumes and dry beans, all non-starchy vegetables, some	American Diabetes Association (2017) Food Processing (2017) National Institute of Diabetes and Digestive and Kidney Diseases (2012)	PowerPoint Presentation and Group Discussions PowerPoint Presentation and	Posttests

Describe the benefits of participating in physical activities and healthy diets.	starchy vegetables (e.g., sweet potatoes), most fruits, and many whole-grain breads and cereals. • Low-Calorie Diet: A low-calorie diet is one comprising fewer calories than needed to maintain weight, usually less than 1,200 calories per day for an adult. • Very Low-Calorie Diet (VLCD): A distinct diet that delivers up to 800 calories per day. It consist of prepackaged formulas, such as bars, liquid shakes, and soups, which replace all your regular meals. • Low-Fat: Limits fat intake and often saturated fat and cholesterol. Consumption of not more 30% of the daily energy intake from fat. • Ornish: The emphasis mainly is on eating a low-fat diet of plant products and simple carbohydrates to attain weight loss and improved health without feelings hunger. • Vegetarian: Consists of foods that come mostly from plants, such as vegetables, fruits, and whole grains. Various popular physical activity	Nordmann, A. J. et al., (2006) Beckley University of California (2015) University of Maryland School of Medicine (2017) U.S. Department of Health and Human Services (2008)	Group Discussions PowerPoint Presentation and Group Discussions	

Describe the history, assessment, and physical examination of obese patients.	• Water Aerobics • Tennis (doubles) • Walking briskly (three miles per hour or faster, but not race-walking) • Bicycling slower than 10 miles per hour • Ballroom Dancing • General Gardening • Bicycling 10 miles per hour or faster • Swimming laps • Tennis (singles) • Racewalking, jogging, or running • Aerobic Dancing • Heavy Gardening (continuous digging or hoeing) • Jumping Rope • Running • Treadmill • Water Aerobics • Hiking uphill Address the benefits of being physically active and consuming a healthy diet • Reduced risk of early death • Reduced risk of stroke • Reduced risk of metabolic syndrome • Reduced risk of colon cancer • Reduced risk of high blood pressure • Reduced risk of coronary heart disease • Reduced risk of adverse blood lipid profile	Unick et al., (2011) Bauer, Briss, & Goodman (2014) Westman (2014)	PowerPoint Presentation and Group Discussions PowerPoint Presentation and Group Discussions	

	• Reduced risk of type 2 diabetes • Reduced risk of colon cancer • Reduced risk of breast cancer • Deterrence of weight gain • Increase weight loss, mostly when done collectively with decreased calorie consumption • Enhanced cardiorespiratory and muscular health • Reduction of falls • Decreased depression • Improved cognitive function (for older adults) • Improved functional well-being (for older adults) • Decreased abdominal obesity • Reduced risk of hip fracture • Reduced risk of lung cancer • Reduced risk of endometrial cancer • Improved preservation of weight loss • Improved bone density • Better quality of sleep Steps to obesity treatment: • Obtain patient weight and height. • Calculate the body mass index (BMI) = weight in kilograms divided by height in squared	American Academy of Family Physicians (2017)	PowerPoint Presentation and Group Discussions	

	meters. • Use the table in Appendix M to approximate patient BMI. • Classify patient based on BMI: underweight, normal weight, overweight, obese, or severely obese. If overweight or above, provide treatment. • After obtaining weight, height, BMI, waist circumference, and classifying patient, do the following: • Assess family history of obesity, dyslipidemia, coronary heart disease, type 2 diabetes mellitus, hypertension, thyroid disease, and genetic disorders. • Ask patient if any member of his or her family died before the age of 50 and the cause of death. • Assess weight history, any prior weight loss attempts, and how successful they were. • Assess how many ounces of fruit juice, water, soft drinks, sport drinks, sweetened beverage, milk (1%, 2%, or whole) consumed daily. • Assess description of meals eaten on a typical day, number of meals	Dietary Guideline of America (2010) Kushner (2012) American Heart association (2017) WHO	PowerPoint Presentation and Group Discussions PowerPoint Presentation and Group Discussions	
Have an understanding of a weight loss goal and how to set a realistic goal. Have				

knowledge about the recommended diet and amount of physical activities that can lead to weight loss.	eaten outside, and fast food weekly. • Assess number of servings of fruits and vegetables eaten daily. • Assess time and place of breakfast, lunch, and dinner. • Assess daily amount of physical activity and types. • Assess availability of local parks and community gyms. • Assess underlying reasons for being overweight or obese. • Assess psychological health and psychiatric history, such as poor self-image, feelings of isolation, anxiety, and/or depression. • Assess environmental, social, and family factors, including family history of being overweight and obese. • Assess for medical problems and whether patient is taking any medications. • Obtain physical assessment (including blood pressure and heart rate), assess for papilledema, tonsillar size, wheezing, thyroid noodle, liver span, epigastric tenderness, gait, and range of motion. • Assess for personal	(2017) CDC (2015) American Academy of Family Physicians (2017) Look Ahead Research Group (2014) Andersen & Anderssen (2013) Anderssen, & Kolle (2013) Wilson (2016)	PowerPoint Presentation and Group Discussions	

	history of comorbidities, such as type 2 diabetes, cardiovascular disease, hypertension, osteoarthritis, dyslipidemia, and sleep apnea. • Obtain lab work to assess for other risk factors using fasting lipid panel, blood and glycosylated hemoglobin (HbA_{1c}), and comprehensive metabolic panel. • Assess for readiness and motivation to change lifestyle. • For patients who are not ready to make lifestyle modifications, offer an opportunity to return for additional discussions when they are prepared to discuss their weight again. Provide information about the benefits of weight loss and healthy eating. • When counseling patients for obesity management, take into account the person's gender, cultural needs, age and stage of life, ethnicity, and social/economic circumstances. • Assist patient to customize a complete weight loss plan that includes a reduced-calorie diet, increased physical activity, and	Teede & Moran (2016)	PowerPoint Presentation and Group Discussions	

	behavioral approaches. Setting a weight-loss goal: • Discuss the importance of setting a SMART goal: S-specific, M-measurable, A-achievable, R-realistic, and T-timed Goals of Weight Loss include the following: • Decrease body weight. • Maintain a lower body weight over the long term. • Avoid further weight gain. • Target weight-loss therapy goal: Reduction of about 10% of body weight within a six-month period. A. Healthy diet and portion control: • Encourage patient to consume more fruits, vegetables, whole grains, fat-free/low-fat dairy products, and seafood. • Encourage patient to decrease consumption of sodium, saturated and trans fats, added sugars, and refined grains. • Encourage patient to make half of his or her plate fruits and vegetables. • Consume more whole-grain foods than refined-grain foods. • Drink water instead of sugary beverages.	Hallal et al. (2012) Stapleton & Bulger (2015) Anderssen & Kolle (2013) Beavers et al. (2015) Swift et al. (2014). U.S. Department of Health and Human Services, (2008).		

	• Inform patients that weight loss requires energy expenditure and/or decreased energy intake to acquire an energy deficit. • Women to consume 1,000 to 1,200 calories/day or energy deficit of 500 kcal/day. • Men to consume 1,200 to 1,600 calories/day or energy deficit of 800 kcal/day. • Calories can be increased or decreased depending on weight-loss goals and other circumcises. • Inform patient that a1lb. to 2lb./week weight loss requires a reduction of 500 to 1,000 kcal/day, which will lead to 3,500 to 7,000 kcal/week. • Example: A patient with a BMI of 35 with energy deficits of 500 to 1,000 kcal/day will lead to weight losses of about 1lb. to 2lb./week and 10% loss in body weight if continued for six months. • Example: A patient with a BMI of 27 with an energy deficit of 300 kcal/day will result in weight losses of about 1/2 lb./week, which is a 10% loss in body weight if continued for six months.	Manzoni et al. (2015)		

	• Behavioral Strategies: Offer skills to help patients adopt to recommended eating habits. • Weight plateaus can result after six months. Increases in physical activity and decreases in calories will be individualized. B. Physical Activity • Definition: Physical activity is any movement that could help increase or preserve physical fitness as well as overall health. • Seek advice from your primary healthcare provider before starting physical activity if you have a heart condition or have had a stroke, exercise induced shortness of breath, chest pains induced by exercise, dizziness or blacking out, joint or back problems that get worse with exercise, or if you have not exercised for a long time. • Assist patients in choosing a physical activity that they enjoy. • Types of physical activities include aerobics, running, walking, etc. (noted above). • Take into account the			

	person's current physical fitness and ability for all activities. • Encourage patients to reduce the amount of time they spend inactive, such as watching television, using a computer, or playing video games. • Address the risks and safety precautions to be taken into consideration while exercising. • Start slow, such as 10 minutes/day, and build up over time by adding 3 minutes every week. • Encourage moderate levels of physical activity for at least 2 hours and 30 minutes/ week. • Examples of moderate physical activity include biking, ballroom dancing, canoeing, gardening, baseball, softball, volleyball, tennis, walking briskly, and water aerobics. • Encourage use of community resources and provide the name of a contact person, phone number, and address. • Encourage the use of a podiometer, smart watch, or smart phone to count steps. • Issue a diary and encourage patients to record daily caloric			

	intake and physical activities. See sample in Appendix H. • Encourage patients to start slow, such as 10 minutes, and increase by 5 minutes a week. • Encourage patients to weigh themselves daily at the same time and under the same conditions. • Schedule patients to follow up in two to four weeks. Stress the importance of maintaining compliance with protocols to meet goals. • Assist patient in identifying and addressing barriers to weight loss. • Monitor patients' progress with their goals and modify them based on patients' needs. C. Behavior Modification • Problem solving • Nutrition education • Stimulus control • Mental restructuring is among the additional strategies used to promote behavior change. • It is always important to get patient permision before discussing his or her weight. • Do not call patient obese (stigmitization); rather, say patient has obesity.			

	• Use open-ended questions to help patient elaborate.			
Self-management education and skills and community resources	Promoting Self-Management Support • Provide self-management skills, such as weighing self daily, recording food consumed, time consumed, and whether food was consumed while watching TV or other programs. • Encourage problem-solving skills related to weight loss; encourage the use of community resources. • Community resources (see Appendix L) • Comorbidities may be referred to dietitian or multidisciplinary weight-loss clinic,	Stombaugh (2010) Physical Activity Guideline of America (2008) U.S. Department of Health and Human Services (2008)	PowerPoint Presentation and Group Discussions	Posttests

Appendix B: Expert Evaluation of the Program Module Plan

EXPERT EVALUATION OF THE PROGRAM MODULE
OUTLINE/CONTENT/EVIDENCE

Title of the Project: Development and Validation of an Adult Diet and Physical Activity Program in a Primary Care Setting

Student: Christiana Keke-Ekekwe

Date:_____ **Name of Reviewer:** _____

Product for Review: Adult Diet and Physical Activity Program for Obese Patients
Instructions: Please review each objective related to the program plan content and select one answer for the following questions: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.

Objective 1
Decribe adult obesity, diagnoses, and causes and effects.
1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.
Objective 2
Describe some current popular diets and various types of physical activity.
1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.
Objective 3
Describe the benefits of participating in physical activity and maintaining a healthy diet.
1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.
Objective 4
Describe taking a history, assessment, and physical examination of an obese patient.
1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.
Objective 5
Have an understanding of a weight-loss goal and how to set a realistic goal.
1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.
Ojective 6
Have knowledge about the recommended amount of diet and physical activity that can lead to weight loss.
1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.
Objective 7
Self-management education skills and community resources.
1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.

Appendix C: Summary of Expert Evaluation of the Program Plan

Title of Project: Development and Validation of an Adult Diet and Physical Activity Program in a Primary Care Setting

Products for Review: Program Plan, Complete Program Content
Every content expert was asked to respond to the questions by choosing one of the following: 1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree. They also were asked to provide comment as needed.

For objective 1, decribe adult obesity, diagnoses, and causes and effects, each of the 5 experts selected "4," supporting that at the conclusion of this educational experience, nurses and nurse practitioners will be able to decribe adult obesity, diagnoses, and its causes and effects. There were no further comments.

For objective 2, describe some current popular diets and various types of physical activity,
each of the 5 experts selected "4," supporting that at the conclusion of this educational experience, nurses and nurse practitioners will be able to describe some current popular diets and various types of physical activity. There were no further comments.

For objective 3, describe the benefits of participating in physical activities and maintaining healthy diets, each of the 5 experts selected "4," supporting that at the conclusion of this educational experience, nurses and nurse practitioners will be able to describe the benefits of participating in physical activities and maintaining healthy diets. There were no further comments.

For objective 4, describe the history, assessment, and physical examination of obese patients,
each of the 5 experts selected "4," supporting that at the conclusion of this educational experience, nurses and nurse practitioners will be able to describe the history, assessment, and physical examination of obese patients. Comment: One of the experts suggested that ask patients whether any member of their family died before the age of 50 years and, if so, what was the cause of their death.

For objective 5, have an understanding of a weight-loss goal and how to set a realistic goal,
each of the 5 experts selected "4," supporting that at the conclusion of this educational experience, nurses and nurse practitioners will have an understanding of a weight-loss goal and how to set a realistic goal. There were no further comments.

For objective 6, have knowledge about the recommended amount of diet, physical activities, and behavior modification that can lead to weight loss, each of the 5 experts

selected “4,” supporting that at the conclusion of this educational experience, nurses and nurse practitioners will be able to have knowledge about the recommended amount of diet, physical activities, and behavior modification that can lead to weight loss. There were no further comments.

For objective 7, self-management education skills and community resources, each of the 5 experts selected “4,” supporting that at the conclusion of this educational experience, nurses and nurse practitioners will be able to provide self-management education and skills. Comment: Initially, “community resources” was not part of Objective 7; however, it was added because one of the experts suggested it was important to link obese patients with available community resources to improve treatment outcomes.

Appendix D: Content Expert Evaluation of Module Plan Summary

1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree.

Objective Number	Evaluator 1	Evaluator 2	Evaluator 3	Evaluator 4	Evaluator 5
1	4	4	4	4	4
2	4	4	4	4	4
3	4	4	4	4	4
4	4	4	4	4	4
5	4	4	4	4	4
6	4	4	4	4	4
7	4	4	4	4	4
Total	60	60	60	60	60

Recommendations: Based on the rating by all 5 expert content evaluators, all objectives were met, which resulted in 100% curriculum acceptance.

Appendix E: Training Protocol

Purpose: The purpose of this training protocol is to provide a step-by-step approach for facilitating the implementation of an Adult Diet and Physical Activity program at the Family Medical Clinic.

Goal: The goal of this protocol is to provde a consistent direction for training nurses and nurse practitioners in how to implement an Adult Diet and Physical Activity program that will enable them to provide evidence-based care to all overweight and obese patients seeking care at the Family Medical Clinic

a. The training program will be provided to all nurses and nurse practitioners upon their hire and yearly thereafter.
b. Each section of the training will consist of not more than 10 members in a group to increase participation level.
c. The content will be taught yearly in 3 training sessions, each of which consists of 3.5 hours of training.
d. Nurses and nurse practitioners must attend this training to remain in their jobs.
e. Allow 15 minutes break after the first hour of training.
f. The minimun passing score is 80%. Nurses and nurse practioners who fail to attain a passing score must retest. If a staff member fails to pass the exam a second time, the staff member must be retrained again before retesting. A minimum of 50 minutes will be allowed to complete the exam.
g. All exam result will be entered in the staff member's training folder.

Objective	Content	Presentation and Competency Valuation	Time Frame
1	Describe adult obesity, methods for its diagnosis, and its causes and effects.	PowerPoint Pretest/Posttest	30 minutes
2	Describe some current popular diets and various types of physical activity.	PowerPoint Pretest/Posttest	30 minutes
3	Describe the benefits of participating in physical activities and healthy diets.	PowerPoint Pretest/Posttest	30 minutes
4	Describe the process of obtaining and conducting a history, assessment, and physical examination of obese patients.	PowerPoint Pretest/Posttest	30 minutes

5	Have an understanding of a weight-loss goal and how to set a realistic goal.	PowerPoint Pretest/Posttest	30 minutes
6	Have the necessary knowledge about the recommended amount of diet and physical activity that can lead to weight loss.	PowerPoint Pretest/Posttest	30 minutes
7	Self-management education skills and community resources.	PowerPoint Pretest/Posttest	30 minutes

Appendix F: Pretest/Posttest

Name:_____Date_____

1. Obesity is a public health problem.
   a. True b. False

2. Body Mass index (BMB) is…
   a. Weight in kilograms and divide by height in meters squared (m^2)
   b. Total body fat
   c. Determined by weight
   d. Determined by height

3. A person that is obese will have a…
   a. BMI below 18.5
   b. BMI between 18.5 and 24.9
   c. BMI between 25.0 and 29.9
   d. BMI between 30.0 and 39.9

4. Which of the following are risk factors for obesity?
   a. Genetic
   b. Demographic
   c. Biological
   d. Social-cultural factors
   e. All of the above

5. Which of the following about obesity is <u>incorrect?</u>
   a. Increases type 2 diabetes.
   b. Increases coronary heart disease.
   c. Decreases high blood pressure (hypertension).
   d. Increases high LDL cholesterol.

6. Which of the following is a current popular weight-loss diet
   a. Carbohydrate counting
   b. Meal replacement
   c. Low-fat diet
   d. Vegetarian diet
   e. All of the above

7. Which of the following is incorrect when counseling patients about obesity management—you should take into account the patient's…
   a. Job type
   b. Gender
   c. Age and stage of life

d. Ethnicity and social/economic circumstances

8. To attain weight loss requires energy expenditure and/or decreased energy intake to acquire an energy deficit.
a. True b. False

9. To attain a 1lb to 2lb/week weight loss requires a reduction in 500 to 1,000 kcal/day, which leads to a reduction of 3,500 to 7,000 kcal per week.
a. True b. False

10. Which of the following is an example of "behavioral strategies"?
a. Offer exercise program.
b. Offer money to help purchase food.
c. Offer skills to help patients adopt recommended eating behavior and activity.
d. Offer help to drive patient to the gym.

11. Physical activity is any movement that could help increase or preserve physical fitness as well as overall health.
a. True b. False

12. Goals of weight-loss and management are to (select all that apply)…
a. To decrease body weight.
b. To maintain a lower body weight over the long term.
c. To avoid further weight gain.
d. All of the above.

13. Target weight loss therapy goal for reduction should be about 10% of body weight over 6 months.
a. True b. False

Answers
1. A=TRUE
2. A
3. D
4. E
5. C
6. E
7. A
8. A
9. A=TRUE
10. C
11. A=TRUE
12. D
13. A

Appendix G: Pretest/Posttest Content Expert Validation

Date: Student Name: Christiana Keke-Ekekwe

Reviewer's Name: ________________________________

Package: Program Plan, Pretest/Posttest with Answers

INSTRUCTIONS: Carefully check each item to ensure that the question representes the course objectives and the correct answer symbolizes the course content.

Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
Comments:
Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
Comments:
Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
Comments:
Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
Comments:
Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
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Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
Comments:
Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
Comments:
Not Applicable __ Somewhat Applicable__ Applicable__ Very applicable__
Comments:

Appendix H: Content Expert Validity Index Scale Analysis

Rating on a 13-Item Scale by five Experts on a 4-point Likert Scale
Table 1

Pretest/ Posttest	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Total Rating	Item CVI
1	4	4	4	4	4	20	1.0
2	4	4	4	4	4	20	1.0
3	4	4	4	4	4	20	1.0
4	4	4	4	4	4	20	1.0
5	4	4	4	4	4	20	1.0
6	4	4	4	4	4	20	1.0
7	4	4	4	4	4	20	1.0
8	4	4	4	4	4	20	1.0
9	4	4	4	4	4	20	1.0
10	4	4	4	4	4	20	1.0
11	4	4	4	4	4	20	1.0
12	4	4	4	4	4	20	1.0
13	4	4	4	4	4	20	1.0
Total	52	52	52	52	52	260	1.0
Proportion						S-CVI	
Applicable	1.0	1.0	1.0	1.0	1.0	1.0	

I-CVI, item- level content validity index.
S-CVI/UA, scale content validity index, universal agreement calculation method
Adopted from Polit, D. F., & Beck, C. T. (2016) content validity index.

Appendix I: Program Evaluation Plan

Goal: The goal is to evaluate the impact of training nurses and nurse practitioners on adult obesity management within the primary care setting and sustain the use of such practices within the organization.

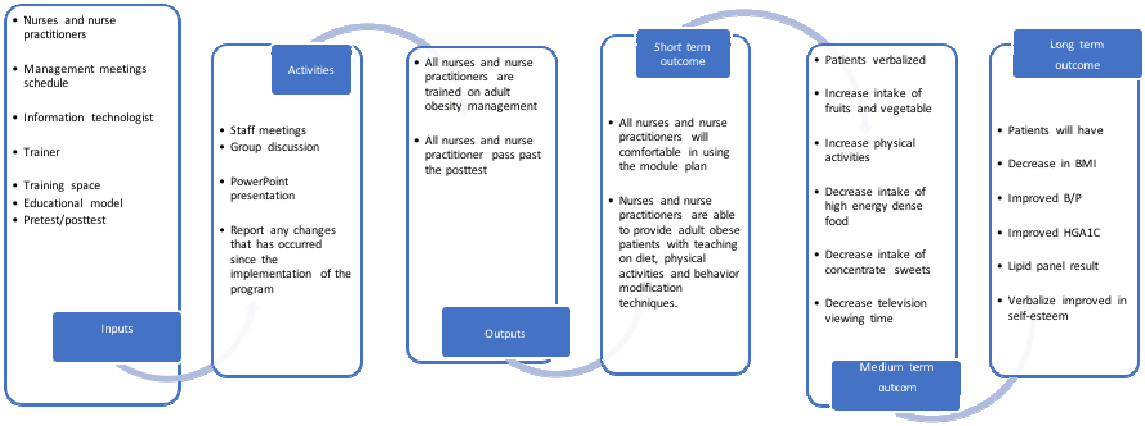

Figure 1. Logic Model for Program Evaluation

Assumptions of the Project

The following assumptions are in effect in monitoring the impact of the diet modification and physical activity program:

1. Physical activity and diet modification are essential in weight reduction and maintenance of a healthy weight.
2. Nurse practitioners in primary care settings seek to provide the best possible care to obese patients.
3. Development of a theory-based approach is essential in the management of obesity.
4. Training and information about diet modification and physical activity are essential to all nurses who care for obese adults.

Appendix J: Plan-Do-Study-Act Model Framework of the Project

Purpose: The purpose of this DNP project is to develop an adult diet and physical activity educational program.

Steps of Change	Responsible Person	When to be done	Where to be done
Develop an Education Program and Training Protocol	Christiana KekeEkekwe	September-February 2016	Organization located in Maryland
Plan			
Task	Responsible Person		Measures for Predicted Outcome
• Assemble program team. • Create a timeline. • Evaluate and synthesize evidence-based research on diet and physical activity. • Determine the best evidence. • Develop an educational program and training protocol. • Attain content validation. • Develop an implementation plan. • Develop an evaluation plan.	Christiana KekeEkekwe		

Do

1. Development of adult diet and physical activity program
2. Development of the training protocol

3. Development of an implementation plan
4. Development of an evaluation plan

Study (will be completed after graduation)

Outcomes after implementation will be measured and compared with the predicted outcome.

Act (will be completed after graduation). Any modifications of the program will be added based on the outcome of the implementation.

Appendix K: Summative Evaluation

Student: Christiana Keke-Ekekwe
Team, I thank each of you for completing the summative evaluation on my project. Please complete and send it anonymously via interoffice mail to Christiana Keke-Ekekwe.

Qualitative Summative Evaluation Team Members/Stakeholders

A. The development of the project was a team approach with the DNP student serving as the team leader.
    1. Please describe how you feel about your participation as a team member.
    2. Describe the effectiveness of the team approach related to communication, meetings, and proposed outcomes.
    3. What would you like to improve in the committee process?
B. The outcomes of this project were the program module and the pretest/posttest
    1. Describe the role you played as a team member in the project.

Defining the role of team members and accountabilities was one of the great abilities of the team leader.

C. The role of student as a team leader
    1. Describe how effective the team leader was in directing the meetings.
    2. Describe how the team leader supported the team members in meeting the goal of this
       Project.
D. Please provide any ideas for improvement.

Appendix L: Summary of the Qualitative Summative Evaluation

Adult Diet and Physical Activity Program

This evaluation from the team members was established on four key points: (1) how the team member sensed the approach of the team leader and team members during the project, (2) whether the team members' contribution during the project establishment, (3) how the team felt about my role as a leader, and (4) to provide any ideas and suggestion regarding the project. All the team members stated that they participated in the establishment of the project. According to the team, I stayed focused on the goals and objectives of the project, maintained a collaborative team environment, helped team members set priorities, assigned responsibilities, and maintained effective communication within and outside the team. The team commended my ability to effectively manage each of the team meetings and identified this ability as one of the factors that guided the development of the program module plan, pretest/posttest, and training protocol. All the team member equally contributed to the project during the team meetings. All the team members said that they received calls from me regarding the meeting agendas before each meeting as well as a report of each session after the meeting had ended. There were no further suggestions.

Appendix M: List of Community Resources

Recipes on the Run: This is implemented to support healthier lifestyles by providing people with a selection of inexpensive, quick-to-prepare meal options.

Locations
District of Columbia
4900 Puerto Rico Avenue, NE
Washington, DC 20017
P: (202) 644-9800
F: (202) 529-1767
Virginia

6833 Hill Park Drive
Lorton, VA 22079
P: (571) 482-4770
F: (703) 541-0179
Website: https://www.capitalareafoodbank.org/programs/capacity-building/ror/

Farmers Market
Prince Georges County encourages the famers market. This is one of the ways to increase accessibility, availability, and affordability of existing healthy food options. Below you will find list of famers markets as well as their locations (city/town and zip code)
Website:
http://mypgchealthyrevolution.org/media/FarmersMarketReportCLNwtitle_final.pdf

Farmers Markets in Prince George's County, MD Markets highlighted in blue are those in the CTG-HEAL Coverage Area		
Farmers Markets	City/Town	Zip Code
1. American Market at National Harbor	Oxon Hill	20745
2. Arcadia Farmers Market at Adelphi	Adelphia	20783
3. Bowie Farmers Market	Bowie	20715
4. Branch Avenue in Bloom Farmers Market	Hillcrest Heights	20748
5. Cheverly Community Market	Cheverly	20785
6. College Park Farmers Market	College Park	20740
7. Downtown College Park Farmers Market	College Park	20740
8. The Farmers Market at Maryland	College Park	20740
9. Frank & Gail's Farmers Market	Laurel	20707
10. Freedom Farmers Market	Fort Washington	20744
11. Glenn Dale Farmers Market	Glenn Dale	20769

12. Greenbelt Farmers Market	Greenbelt	20770
13. Hollywood Farmers Market	College Park	20740
14. Hyattsville Farmers Market	Hyattsville	20782
15. Montpelier Farmers Market	Upper Marlboro	20774
16. Mount Rainier Farmers Market	Mount Rainier	20712
17. Riverdale Park Farmers Market	Riverdale Park	20737
18. Seat Pleasant Farmers Market	Seat Pleasant	20743
19. St. Thomas Church Farmers Market	Upper Marlboro	20772
20. Suitland Farmers Market	Suitland	20746
21. USDA(Beltsville)Farmers Market	Beltsville	20705

Free Walk and Run 2017 schedule.
Walking is good medicine, and it is a great way to connect with others.
Phone number: 301-446-6800; TTY: 301-699-2544, e-mail: wellness@pgparks.com.

Classes may be cancelled due to inclement weather. Please call 301-927-0822 prior to class for weather-related cancellations.
Date and Time: Monday, April 03, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30 am
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7 pm
Tuesday, April 04, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, April 05, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am
Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am
Monday, April 10, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30 am Description: Walking is good medicine, and it is a great way to connect with others.
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7 pm
Tuesday, April 11, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, April 12, 2017
Wellness: Walk and Talk With the Doc

Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am
Monday, April 17, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30 am
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7 pm
Tuesday, April 18, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, April 19, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am
Monday, April 24, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7 pm
Tuesday, April 25, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, April 26, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am Description: Walking is good medicine, and it is a great way to connect with others.
Monday, May 01, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30 am
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7 pm
Tuesday, May 02, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, May 03, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am
Date and Time: Monday, May 08, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30 am
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7
Tuesday, May 09, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, May 10, 2017

Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am
Monday, May 15, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30 am
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7 pm
Date and Time: Tuesday, May 16, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, May 17, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am
Monday, May 22, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 8:30-9:30 am
Wellness: Walk and Talk With the Doc
Date and Time: Mondays, April 3 - May 22, 2017, 6-7 pm
Tuesday, May 23, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Tuesdays, April 4 - May 23, 2017, 8:30-9:30 am
Wednesday, May 24, 2017
Wellness: Walk and Talk With the Doc
Date and Time: Wednesdays, April 5 - May 24, 2017, 7:30-8:30 am

Yoga in the Parks 2017 Schedule
Mondays, June 5th – August 28th
8:30-9:30am

Tucker Road Athletic Complex
1770 Tucker Road, Ft. Washington, 20744
301-203-6000; TTY 301-699-2544
Mondays, June 5th- August 28th6:30-7:30 pm
Walker Mill Regional Park
8840 Walker Mill Rd., District Heights, 20747
301-218-6700; TTY 301-699-2544

Tuesdays, May 30th- August 29th 6-7 pm
Tucker Road Community Center
1711 Tucker Rd., Ft. Washington, 20744
301-248-4404; TTY 301-699-2544
Tuesdays, May 30th- August 29th 9-10 am & 10:30-11:30 am
Watkins Regional Park
301 Watkins Park Dr., Upper Marlboro, 20774

301-218-6700; TTY 301-699-2544
Wednesdays, May 31st- August 30th 7-8 pm
Bladensburg Waterfront Park
4601 Annapolis Rd., Bladensburg, 20710
301-779-0371; TTY 301-699-2544
Wednesdays, May 31st- August 30th6:30-7:30 pm
Walker Mill Regional Park
8840 Walker Mill Rd., District Heights, 20747
301-218-6700; TTY 301-699-2544
Thursdays, June 1st- August 31st9-10 am & 10:30-11:30 am
Watkins Regional Park
301 Watkins Park Dr., Upper Marlboro, 20774
301-218-6700; TTY 301-699-2544

Fridays, June 2nd- September 1st 9-10 am
Ellen E. Linson Splash Park
5211 Paint Branch Pkwy., College Park, 20740
301-277-3717; TTY 301-699-2544

8:30- 9:30 am Saturdays, June 3rd- September 2nd
Good Luck Community Center
8601 Good Luck Rd., Lanham, 20706
301-552-1093; TTY 301-699-2544

Saturdays, June 3rd- September 2nd 9-10 am
Lake Artemesia Natural Area
8200 55th Ave., Berwyn Heights, 20740
301-627-7755; TTY 301-699-2544

Saturdays, June 3rd- September 2nd 9-10 am
Marlton Community Park
8061 Croom Rd., Upper Marlboro, 20772
301-446-6800; TTY 301-699-2544

2017 Dine and Learn program

Enjoy step-by-step live cooking demonstration with a Registered Dietician and FREE food samples and new recipes to take home and fun and easy moves to keep you active for life.
call 301-446-6817; TTY 301-699-2544 for dates and time or e-mail www.wellness@pgparks.com
Website:
http://www.pgparks.com/Things_To_Do/Sports/Health_and_Wellness_Programs/Dine_and_Learn.htm

Get Fit Mobile2917 schedule

Health and Wellness: New Year, New You! Family Bootcamp
Date and Time: 9-10:30 am
Series Dates: Saturdays, January 7-28
Cost: FREE
Ages: All ages please call (301) 446-6800 or e-mail wellness@pgparks.com
Location: Southern Regional Technology & Recreation Complex
7007 Bock Road, Fort Washington, MD 20744

A Health Balance: Family Cooking Session
Date and Time: January 27, 2017, 11 am-12 noon
Cost: FREE
Ages: All ages
contact Health and Wellness at (301) 446-6800 or e-mail wellness@pgparks.com.
Location: Southern Regional Technology & Recreation Complex
7007 Bock Road, Fort Washington, MD 20744
Health and Wellness: Spread the Love! Workout
Date and Time: Saturday, February 12th, 9:00 am-10:30 am
please call (301) 446-6800 or e-mail wellness@pgparks.com.
Cost: FREE
Ages: 13 & up
Location: Bladensburg Waterfront Park
4601 Annapolis Road, Bladensburg, MD 20710

Prince Georges County park and wellness Centers
Allentown Splash, Tennis and Fitness Park
Year Round Pool with Seasonal Outdoor Pool
7210 Allentown Road
Fort Washington, MD 20744
301-449-5566, 301-449-5567;
TTY 301-699-2544

Bickford Natatorium at Prince George's Community College
Year Round
301 Largo Road
Largo, MD 20774
301-546-0676; 301-322-0979; TTY 301-699-2544
Fairland Sports and Aquatics Complex
13820 & 13950 Old Gunpowder Road
Laurel, MD 20707
- 301-362-6060; TTY 301-699-2544

Glenn Dale Splash Park
Summer Pool
11901 Glenn Dale Boulevard

Glenn Dale, MD 20769
301-352-8980 (summer); TTY 301-699-2544;
301-352-8675 (fax)
GlennDale.SplashPark@pgparks.com
This seasonal facility is closed.

Hamilton Splash Park
Summer Pool
3901 Hamilton Street
Hyattsville, MD 20781
301-779-8224 (Summer)
301-853-9115 (Fall/Spring)
TTY 301-699-2544
This seasonal facility is closed.

J. Franklyn Bourne Memorial Pool
Summer Pool
6500 Calmos Street (Dateleaf Ave) Seat Pleasant, MD 20743 301-350-4422 (summer), 301-583-2572 (fall-spring); TTY 301-699-2544
This seasonal facility is closed

Lane Manor Splash Park
Summer Pool
7601 West Park Drive
Hyattsville, MD 20783
301-422-7284 (summer), 301-853-9115 (off season)
TTY 301-699-2544
This seasonal facility is closed.

North Barnaby Splash Park
Summer Pool
5000 Wheeler Road
Oxon Hill, MD 20745
301-894-1150 (summer), 301-449-5566 or 5567
(off season); TTY 301-699-2544
This seasonal facility is closed.

Rollingcrest-Chillum Splash Pool
Year Round Pool
6122 Sargent Road
Chillum, MD 20782
301-853-9115; TTY 301-699-2544
Theresa Banks Memorial Aquatics
Center/Glenarden Complex
8615 McLain Avenue
Glenarden, MD 20706
301-772-5515; 301-772-5516; TTY 301-69

Northern Area Office
1500 Merrimac Drive, Hyattsville 20783
301-445-4500, TTY 301-699-2544
Información en Español: 301-445-4509
Central Area Office
301 Watkins Park Drive, Upper Marlboro 20774
301-218-6700, TTY 301-699-2544
Southern Area Office
10701 Livingston Road, Fort Washington 20744
301-203-6000, TTY 301-699-2544
Community centers
Beltsville Community Center Park
CONTENT CONTROL START 3900 Sellman Road
Beltsville, MD 20705
301-937-6613; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	9 am-9 pm
Fri.:	9 am-7 pm; 7 pm-10 pm (Xtreme Teens)
Sat.:	9 am-4 pm

Sun.: CLOSED; Rentals only

Berwyn Heights School Community Center Park
CONTENT CONTROL START 6200 Pontiac Street
Berwyn Heights, MD 20740
301-345-2808; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.: 9 am-12 noon; 3-9 pm
Fri.: 9 am-12 noon; 3-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 9 am-4 pm
Sun.: CLOSED

Bladensburg Community Center Park
CONTENT CONTROL START 4500 57th Avenue
Bladensburg, MD 20710
301-277-2124; TTY 301-699-2544
Hours of Operation

Mon. -Thurs.: 9 am-9 pm
Fri.: 9 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 9 am-5 pm; 7-10 pm (Xtreme Teens)
Sun.: CLOSED

Bowie Community Center
CONTENT CONTROL START 3209 Stonybrook Drive
Bowie, MD 20715
301-464-1737; TTY 301-699-2544
Hours of Operation

Mon. & Weds.: 7 am-9:30 pm
Tues.: 9 am-9:30 pm
Thurs.: 9 am-10 pm
Fri.: 7 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 9 am-5 pm; 7-10 pm (Xtreme Teens)
Sun.: 11 am-3 pm

Cedar Heights Community Center Park
CONTENT CONTROL START 1200 Glen Willow Drive
Seat Pleasant, MD 20743
301-773-8881; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.: 9 am-9 pm
Friday 9 am-7 pm; 7-10 pm (Xtreme Teens)
Saturday 9 am-1 pm; 7-10 pm (Xtreme Teens)
Sunday Rentals only

College Park Youth Services Center
CONTENT CONTROL START
4912 Nantucket Road
College Park, MD 20740
301-345-4425; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	2-6 pm
Fri.:	2 pm-6 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-1 pm (Classes Only)
Sun.:	CLOSE

College Park Community Center Park and Youth Soccer Complex
CONTENT CONTROL START 5051 Pierce Avenue
College Park, MD 20740
301-441-2647; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	9 am-9 pm
Fri.:	9 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-4 pm
Sun.:	12 noon-4 pm

College Park Community Center Park and Youth Soccer Complex
CONTENT CONTROL START 5051 Pierce Avenue
College Park, MD 20740
301-441-2647; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	9 am-9 pm
Fri.:	9 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-4 pm
Sun.:	12 noon-4 pm

Columbia Park Community Center Park
CONTENT CONTROL START 1901 Kent Village Drive
Landover, MD 20785
301-341-3749; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	2-8 pm
Fri.:	2-7 pm
Sat.:	8 am-3 pm; 7-10 pm (Xtreme Teens)
Sun.:	8 am-1 pm

Deerfield Run Community Center
CONTENT CONTROL START 13000 Laurel-Bowie Road
Laurel, MD 20708

301-953-7882; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	9 am-9 pm
Friday	9 am-7 pm; 7-10 pm (Xtreme Teens)
Saturday	9 am-3 pm; 7-10 pm (Xtreme Teens)
Sunday	CLOSED

Fort Washington Forest Community Center
CONTENT CONTROL START
1200 Fillmore Road
Fort Washington, MD 20744
301-292-4300; TTY 301-699-2544
Hours of Operation

Mon., Tues., Thurs.:	9 am-9 pm
Wed.:	9 am-10 pm
Fri.:	9 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-5 pm
Sun.:	12 noon-4 pm

Glass manor Community Center Park
CONTENT CONTROL START
1101 Marcy Avenue
Oxon Hill, MD 20745
301-567-6033; TTY 301-699-2544
Hours of Operation

Mon.-Fri.:	1:30 pm-9 pm
Sat:.	9 am-3 pm; 7-10 pm (Xtreme Teens)
Sun:.	11 am-3 pm

Glenarden / Theresa Banks Complex
CONTENT CONTROL START 8615 McLain Avenue
Glenarden, MD 20706
301-772-3151; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	8 am-9 pm
Fri.:	8 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-4 pm
Sun.:	CLOSED; Rentals only

Glenn Dale Community Center Park
CONTENT CONTROL START
11901 Glenn Dale Boulevard (Rte. 193)
Glenn Dale, MD 20769

301-352-8983; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	8 am-9 pm
Fri.:	8 am-9 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-3 pm
Sun.:	CLOSED; Rentals only

Good Luck Community Center Park
CONTENT CONTROL START 8601 Good Luck Road
Lanham, MD 20706
301-552-1093; TTY 301-699-2544
Hours of Operation

Mon. Tues & Wed.:	9 am-9 pm
Thurs:	9 am-9:30 pm
Fri.& Sat.:	9 am-7 pm; 7-10 pm (Xtreme Teens)
Sun.:	12 noon-4 pm

Harmony Hall Regional Center
CONTENT CONTROL START 10701 Livingston Road
Fort Washington, MD 20744
301-203-6040; TTY 301-699-2544
Hours of Operation

Mon.-Fri.:	7 am-9 pm
Sat.:	9 am-4 pm
Sun.:	Closed

Hillcrest Heights Community Center Park
CONTENT CONTROL START 2300 Oxon Run Drive
Temple Hills, MD 20748
301-505-0897; TTY 301-699-2544
Hours of Operation

Mon.-Fri.:	9 am-9 pm
Sat.:	9 am-4 pm; 7-10 pm (Xtreme Teens only)
Sun.:	CLOSED

Huntington Community Center
CONTENT CONTROL START 13022 8th Street
Bowie, MD 20720
301-464-3725; TTY 301-699-2544
Hours of Operation

Mon.:	7 am-9 pm; 7-9 pm (Xtreme Teens)
Tues.: - Thurs.:	7 am-9 pm

Friday	7 am-7 pm; 7-10 pm (Xtreme Teens)
Saturday	9 am-3 pm
Sunday	CLOSED; Rentals only

Indian Queen Recreation Center
CONTENT CONTROL START 9551 Fort Foote Road South
Ft. Washington, MD 20744
301-839-9597; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	2-9 pm
Fri.:	2-7 pm
Sat.:	9 am-1 pm; 7-10 pm (Xtreme Teens)
Sun.:	CLOSED

John E. Howard Community Center Park
CONTENT CONTROL START
4400 Shell Street
Capitol Heights, MD 20743
301-735-3340; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	3:30-9 pm
Fri.:	3:30 pm-7 pm
Sat.:	7-10 pm (Xtreme Teens)*
Sun.:	Rentals only

Kentland Community Center Park
2413 Pinebrook Avenue
Landover, MD 20785
301-386-2278; TTY 301-699-2544
Hours of Operation

Monday-Thursday	9am-9pm
Friday	9am-7pm
Saturday	9am – 4pm
Sunday	12-5pm
Xtreme Teens	Friday & Saturday – 7-10pm

Largo/Kettering/Perrywood Community Center
CONTENT CONTROL START 431 Watkins Park Drive
Upper Marlboro, MD 20774
301-390-8390; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	8 am-10 pm
Fri.:	8 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-3 pm

Sun.: 12 noon-5 pm

Lake Arbor Community Center
CONTENT CONTROL START 10100 Lake Arbor Way
Mitchellville, MD 20721
301-333-6561; TTY 301-699-2544
Hours of Operation

Mon.: - Thurs.: 7 am-9 pm
Fri.: 7 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 9 am-5 pm; 7-10 pm (Xtreme Teens)
Sun.: CLOSED; Rentals only

Langley Park Community Center
CONTENT CONTROL START 1500 Merrimac Drive
Hyattsville, MD 20783
301-445-4508; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.: 9 am-9 pm
Fri.: 9 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 10 am-4 pm
Sun.: 12 noon-4 pm

Marlow Heights Community Center Park
CONTENT CONTROL START
2800 St. Clair Drive
Marlow Heights, MD 20748
301-423-0505; TTY 301-699-2544
Hours of Operation

Monday-Thursday: 8 am-9 pm
Friday: 8 am-7 pm; 7-10 pm (Xtreme Teens)
Saturday: 8 am-3 pm; 7-10 pm (Xtreme Teens)
Sunday: 11 am-3 pm

North Brentwood Community Center Park
CONTENT CONTROL START 4012 Webster Street
North Brentwood, MD 20722
301-864-0756; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.: 2-9 pm
Fri.: 2-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 10 am-3 pm; 7-10 pm (Xtreme Teens)
Sun.: CLOSED

North Forestville Community Center

CONTENT CONTROL START 2311 Ritchie Road
Forestville, MD 20747
301-350-8660; Fax: 301-350-8662; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	2-9 pm
Fri.:	3-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	10 am-2 pm
Sun.:	Rentals only

Oakcrest Community Park School Center
CONTENT CONTROL START 1300 Capitol Heights Boulevard
Capitol Heights, MD 20743
301-736-5355; TTY 301-699-2544
Hours of Operation

Mon. & Tues.:	12 noon-9 pm
Weds. & Thurs.:	9 am-9 pm
Fri.:	12 noon-7 pm; 7 pm-10 pm (Xtreme Teens)
Sat.:	9 am-3 pm
Sun.:	Rentals only

Palmer Park Community Center Park
CONTENT CONTROL START 7720 Barlowe Road
Landover, MD 20785
301-773-5665; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.	10 am-9 pm
Fri.:	10 am-7 pm; 7-10 pm (Xtreme Teens only)
Sat.:	10 am-2 pm; 7-10 pm (Xtreme Teens only)
Sun.:	CLOSED; Rentals only

Patuxent Community Center
CONTENT CONTROL START 4410 Bishopmill Drive
Upper Marlboro, MD 20772
301-780-7577; TTY 301-699-2544
Hours of Operation

Monday-Thursday	1:30-9 pm
Friday	1:30 pm-7 pm; 7-10 pm (Xtreme Teens only)
Saturday	9 am-2 pm
Sunday	CLOSED

Peppermill Village Community Center Park
CONTENT CONTROL START 610 Hill Road
Landover, MD 20785
301-350-8410; TTY 301-699-2544

Hours of Operation

Mon. & Wed.:	10 am-9 pm
Tues. & Thurs.:	12 noon-9 pm
Fri.:	12 noon-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-2 pm
Sun.:	CLOSED; Rentals only

Potomac Landing Community Center Park
CONTENT CONTROL START 12500 Fort Washington Road
Fort Washington, MD 20744
301-292-9191; TTY 301-699-2544
Hours of Operation

Mon.-Fri.:	1:30-9 pm
Sat.:	9 am-5 pm; 7-10 pm (Xtreme Teens)
Sun.:	12 noon-4 pm

Prince George's Plaza Community Center
CONTENT CONTROL START 6600 Adelphi Road
Hyattsville, MD 20782
301-864-1611; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	7 am-9 pm
Fri.:	7 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-3 pm
Sun.:	12 noon-4 pm

Rollingcrest/Chillum Community Center Park
CONTENT CONTROL START 6120 Sargent Road
Chillum, MD 20782
301-853-2005; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	8:30 am-9 pm
Fri.:	8:30 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-4 pm
Sun.:	CLOSED

Seat Pleasant Activity Center
CONTENT CONTROL START
5720 Addison Road
Seat Pleasant, MD 20743
301-773-6685; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	7 am-8 pm
Friday:	7 am-6 pm; 6-10 pm (Xtreme Teens)

Saturday: 11 am-3 pm
Sunday: Rentals Only

South Bowie Community Center Park
CONTENT CONTROL START 1717 Pittsfield Lane
Bowie, MD 20716
301-249-1622; TTY 301-699-2544
Hours of Operation

Mon. & Weds.: 7 am-9 pm
Tues.: 8 am-9 pm
Thurs.: 8 am-9 pm; 6-9 pm (Xtreme Teens)
Fri.: 7 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 7 am-5 pm
Sun.: CLOSED; Rentals only

Southern Regional Technology and Recreation Complex
CONTENT CONTROL START 7007 Bock Road, Fort Washington, MD 20744
301-749-4160; TTY 301-699-2544; Fax 301-749-4161
Hours of Operation

Mon.-Thurs.: 6 am-9:30 pm
Fri.: 6 am-10 pm;
7-10 pm (Xtreme Teens)
Sat.: 8 am-5pm
Sun.: 10 am-4 pm

Stephen Decatur Community Center
CONTENT CONTROL START 8200 Pinewood Drive
Clinton, MD 20735
301-297-4648; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.: 3:30-9 pm
Fri.: 3:30-7 pm; 7-10 pm (Xtreme Teens only)
Sat.: 9 am-4 pm
Sun.: CLOSED

Suitland Community Park School Center
CONTENT CONTROL START 5600 Regency Lane
Forestville, MD 20747
301-736-3518; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.: 6 am-9 pm
Fri.: 6 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.: 9 am-4 pm
Sun.: 12 noon-4 pm

Temple Hills Community Center Park
CONTENT CONTROL START 5300 Temple Hill Road
Temple Hills, MD 20748
301-894-6616; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	7 am-9:30 pm
Fri.:	7 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-5 pm
Sun.:	12 noon-4 pm

Tucker Road Community Center Park
CONTENT CONTROL START
1771 Tucker Road
Fort Washington, MD 20744
301-248-4404; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	7 am-9 pm
Fri.:*	7 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:*	9 am-5 pm
Sun.:	Closed

Vansville Community Center
CONTENT CONTROL START 6813 Ammendale Road
Beltsville, MD 20705
301-937-6621; TTY 301-699-2544
Hours of Operation

Mon.-Thurs.:	9 am-9 pm
Fri.:	9 am-7 pm; 7-10 pm (Xtreme Teens)
Sat.:	9 am-4 pm
Sun.:	12 noon-4 pm

Upper Marlboro Community Center Park
CONTENT CONTROL START
5400 Marlboro Race Track Road
Upper Marlboro, MD 20772
301-627-2828; TTY 301-699-2544
Hours of Operation

Mon.-Fri.:	6:30 am-9 pm
Sat.:	9 am-5 pm; 7-10 pm (Xtreme Teens only)
Sun.:	12 noon-4 pm

William Beanes Community Center Park

CONTENT CONTROL START
5108 Dianna Drive
Suitland, MD 20746 301-568-7719; TTY 301-699-2544
TEMPORARILY CLOSED FOR RENOVATIONS
Kids' Care continues on the school side.

Appendix N: Body Mass Index

	Normal						Overweight					Obese					
BMI	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
Height (inches)	**Body Weight (pounds)**																
58	91	96	100	105	110	115	119	124	129	134	138	143	148	153	158	162	167
59	94	99	104	109	114	119	124	128	133	138	143	148	153	158	163	168	173
60	97	102	107	112	118	123	128	133	138	143	148	153	158	163	168	174	179
61	100	106	111	116	122	127	132	137	143	148	153	158	164	169	174	180	185
62	104	109	115	120	126	131	136	142	147	153	158	164	169	175	180	186	191
63	107	113	118	124	130	135	141	146	152	158	163	169	175	180	186	191	197
64	110	116	122	128	134	140	145	151	157	163	169	174	180	186	192	197	204
65	114	120	126	132	138	144	150	156	162	168	174	180	186	192	198	204	210
66	118	124	130	136	142	148	155	161	167	173	179	186	192	198	204	210	216

	Normal						Overweight					Obese					
BMI	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**	**33**	**34**	**35**
Height (inches)	**Body Weight (pounds)**																
67	121	127	134	140	146	153	159	166	172	178	185	191	198	204	211	217	223
68	125	131	138	144	151	158	164	171	177	184	190	197	203	210	216	223	230
69	128	135	142	149	155	162	169	176	182	189	196	203	209	216	223	230	236
70	132	139	146	153	160	167	174	181	188	195	202	209	216	222	229	236	243
71	136	143	150	157	165	172	179	186	193	200	208	215	222	229	236	243	250
72	140	147	154	162	169	177	184	191	199	206	213	221	228	235	242	250	258
73	144	151	159	166	174	182	189	197	204	212	219	227	235	242	250	257	265
74	148	155	163	171	179	186	194	202	210	218	225	233	241	249	256	264	272
75	152	160	168	176	184	192	200	208	216	224	232	240	248	256	264	272	279
76	156	164	172	180	189	197	205	213	221	230	238	246	254	263	271	279	287

Body Mass Index Table 2 of 2

	Obese				Extreme Obesity														
BMI	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**
Height (inches)	**Body Weight (pounds)**																		
58	172	177	181	186	191	196	201	205	210	215	220	224	229	234	239	244	248	253	258
59	178	183	188	193	198	203	208	212	217	222	227	232	237	242	247	252	257	262	267
60	184	189	194	199	204	209	215	220	225	230	235	240	245	250	255	261	266	271	276
61	190	195	201	206	211	217	222	227	232	238	243	248	254	259	264	269	275	280	285
62	196	202	207	213	218	224	229	235	240	246	251	256	262	267	273	278	284	289	295
63	203	208	214	220	225	231	237	242	248	254	259	265	270	278	282	287	293	299	304
64	209	215	221	227	232	238	244	250	256	262	267	273	279	285	291	296	302	308	314
65	216	222	228	234	240	246	252	258	264	270	276	282	288	294	300	306	312	318	324
66	223	229	235	241	247	253	260	266	272	278	284	291	297	303	309	315	322	328	334
67	230	236	242	249	255	261	268	274	280	287	293	299	306	312	319	325	331	338	344
68	236	243	249	256	262	269	276	282	289	295	302	308	315	322	328	335	341	348	354
69	243	250	257	263	270	277	284	291	297	304	311	318	324	331	338	345	351	358	365
70	250	257	264	271	278	285	292	299	306	313	320	327	334	341	348	355	362	369	376
71	257	265	272	279	286	293	301	308	315	322	329	338	343	351	358	365	372	379	386
72	265	272	279	287	294	302	309	316	324	331	338	346	353	361	368	375	383	390	397
73	272	280	288	295	302	310	318	325	333	340	348	355	363	371	378	386	393	401	408
74	28	28	29	30	31	31	32	33	34	35	35	36	37	38	38	39	40	41	42

	Obese				Extreme Obesity														
BMI	**36**	**37**	**38**	**39**	**40**	**41**	**42**	**43**	**44**	**45**	**46**	**47**	**48**	**49**	**50**	**51**	**52**	**53**	**54**
Height (inches)	**Body Weight (pounds)**																		
	0	7	5	3	1	9	6	4	2	0	8	5	3	1	9	6	4	2	0
75	287	295	303	311	319	327	335	343	351	359	367	375	383	391	399	407	415	423	431
76	295	304	312	320	328	336	344	353	361	369	377	385	394	402	410	418	426	435	443

Source: Adapted from Institute of Diabetes and Digestive and Kidney Diseases (2012). Understanding Adult Overweight and Obesity