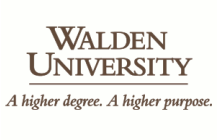

2018

The Impact of Diabetes and Obesity in the African American Population

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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,
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Walden University
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Abstract

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by

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MSN, Cleveland State University, 2012

BSN, Ursuline College, 2008

Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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May 2018

Abstract

Within the 21st century, Type II diabetes has emerged as a public health crisis. African Americans and Hispanic Americans have the highest rates of Type II diabetes and obesity compared to European Americans. The purpose of this DNP project was to teach medical assistants (MA) to provide self-management of diabetes and obesity for the African American population in the local clinical setting. An educational tool kit for health providers was developed to guide the educational project. The chronic care model was used to guide the development of the educational toolkit. A pretest posttest design was incorporated into the educational program. The materials were found to be clear, accurate, and easy to read by the medical assistants. Four MAs, who worked at the clinical setting, participated in the educational program that taught them to use the toolkit developed for this project. To evaluate the effects of the educational program for the MAs, the results of the pre and posttests were scored and showed that MAs had significantly increased their knowledge of teaching diabetes and obesity self-management for African Americans (pretest mean score 80, posttest mean score 93). An implication of this scholarly project is that it will give clinicians the resources needed to create social change in health care by addressing education in diabetes and obesity. Positive social change may result as the African American patients who receive education from medical assistants at the clinical site improve their self-management skills to prevent diabetes and obesity or the complications of the disease.

The Impact of Diabetes and Obesity in the African American Population

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Dedication

I would like to dedicate this project to my family, my husband, children and most of all to my grandmother Aline Mason who suffered from diabetes and who is now deceased. I did not understand back then about her illness, but now as I complete my journey through education in Nursing I have a clear understanding.

Acknowledgments

I would like to first thank God for bringing me through this journey. I would also like to acknowledge the faculty of Walden University who would include: Dr. Nichols, Dr. Long, Dr. Polti, Dr. Minneck and Dr. Moss. Thank you so much for your guidance and your patience with me. I would also like to thank my husband, who has been my cheerleader since I enrolled in school for my BSN. I love you and this is for our family and us.

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Section 1: Nature of the Project

Introduction

Throughout history diabetes has prevailed. Pre-World War II certificates were found to list diabetes as the cause of death for many European Americans and African Americans in the United States (Tull, 2013). Around 1950, the diabetes mortality rate began to be consistently higher in African Americans than European Americans (Tull, 2013). In 1993, diabetes became the fourth leading cause of death in African Americans (Tull, 2013). The diabetes death rate for African Americans males was 23.7% and 36.5% for African American females (Tull, 2013).

The prevalence of obesity in the United States continues to increase. According to The National Institute of Medicine (2013), more than 65% of people in the United States are obese, and 40% suffer with Type II diabetes linked to obesity. Diabetes and obesity have become a public concern for the United States. The American Diabetes Association estimated that in 2002, 18.2 million people had diabetes, and the annual cost to provide health care to these patients who suffer with obesity and diabetes was 122.9 billion.

Carrying extra weight increases the chance of high blood pressure, heart disease, stroke, certain kinds of cancer, and diabetes. Since the 1980s, obesity among adults has increased in the Unites States (American Diabetes Association, 2002). The rise in obesity, and lifestyle changes, such as reduction of physical activity, has accompanied the increase of Type II diabetes (Larsson & Wolk, 2010). Physical inactivity continues to be a risk factor for obesity and diabetes. There is an inverse relationship between a lack of physical inactivity and the increase in the development of obesity and diabetes in the

African American population. Improved insulin sensitivity and weight loss require more physical activity (Wolf et al., 2004). An individual should engage in vigorous exercise at least five times a week for 20 minutes a session to improve insulin sensitivity and weight loss (Wolf et al, 2004). A consistent and vigorous exercise regimen remains a challenge within the African American population (Wolf et al., 2004). In the African American population, a fatty diet, lack of fruits and vegetables, seminary lifestyle, high blood pressure, and cigarette smoking can lead to higher blood sugars (Kallon, 2003).

One in four girls and one in five boys are overweight in the African American population (Kallon, 2003). Historically, obesity produces diseases in adulthood, such as high blood pressure and Type II diabetes (Kallon, 2003). According to Kallon (2003), a Soul Food diet consisting of ham hocks, macaroni and cheese, collard greens, corn bread, fried chicken, and other fried foods contributes to chronic diseases in the African American population. This diet is generally cooked with fat, sugar, and unhealthy amounts of salt, and income insufficiency prevents families from eating healthy.

There are many factors that also affect a patient's ability to properly manage diabetes and obesity. These include self-efficacy, treatment expectations, education, and lack of social support and health beliefs/benefits. Diabetes management can be difficult for many, and it requires a lifelong commitment. The support of family, physicians, nurses, and social workers provides patients with practical assistance and can buffer the stress of living with illness.

Diabetes and obesity are continuing to increase for African Americans in the United States. The growing rate of diabetes and obesity in the African American

population is putting financial and economic stress on the health care system (Funnel et al., 2010). Most lifestyle choices do not take place because African American diabetics are uneducated about the two illnesses. Self-management education is an element of care that is necessary to improve outcomes (Funnel et al., 2010). Standard dynamics in care are reviewed and revised every 5 years; however, if patient education is not incorporated quality self-management is improbable (Funnell et al., 2010). Education is a start to a healthier lifestyle and stability. Patients are in need of proper education in relation to these two illnesses. In this project, I will help patients in primary care internal medicine offices to become properly educated and receive needed continuous care to manage weight and diabetes.

Problem Statement

Due to the increase of diabetes and obesity in the African American population, self-management in health care should be a priority. African Americans are at a greater risk of developing diabetes and its associated comorbidities due to the following factors: lack of access to health care, lack of access to healthy foods, and lower social economic status (American Diabetes Association, 2013). African Americans are characterized by the American Diabetes Association (2013) as having the highest chance of diabetes, and populations over the age of 45 are even a greater risk. In the past 20 years, African Americans, more than any other race, have shown an increase in diabetes (Healthy People, 2010). Out of 23 million people in the United States with diabetes, 16 million are African Americans (Healthy People, 2010). Seventy-eight million U. S. adults are obese

and insulin resistant, and Type II diabetes is also associated with this problem (Kallon, 2003). Obesity-linked diabetes is a growing global and African American concern.

Purpose Statement and Project Objective

The purpose of this project was to create an educational toolkit to educate medical assistants for diabetes and obesity self-management for the African American population at one clinical setting. A secondary aim for this project was to help reduce the disproportionate rate of diabetes and obesity among African Americans in the local setting where the project took place.

The objectives set out for this project were to (a) develop a toolkit to educate medical assistance on educating African Americans on the proper self-management of diabetes and obesity, (b) create a pretest-posttest questionnaire for medical assistants' knowledge on diabetes and obesity to be given before the start of the program and after the education on the toolkit, (c) develop a PowerPoint educational module to educate the participants on diabetes and obesity, and (d) develop an educational module evaluation form to assess satisfaction with the program. After completion of the education, the medical assistants will implement toolkit with African Americans.

Significance/Relevance to Practice

Over 5% of people in the United States have been diagnosed with diabetes, and over 7% are undiagnosed (Younge & Rosenthal, 2012). Through evidence-based practice, African Americans are living longer with diabetes; yet, nonmanagement of this disease has caused secondary illness to increase, such as cardiovascular disease, kidney failure, and amputations (Younge & Rosenthal, 2012). Ethnic and racial minorities suffer

more with the above stated chronic illnesses than other populations. Nevertheless, evidence-based practices are needed to overcome chronic illness.

There are many challenges for diabetics. Underserved communities, minorities, and urban communities are faced with severe comorbidities, such as hypertension, peripheral vascular disease, and kidney failure. (American Diabetes Association, 2013). Continuous care with the same primary care provider affects management for diabetics (Younge & Rosenthal, 2012). Improving care continuity needs to become an approach to disparities in diabetic care. Measuring continuity and outcomes evaluation should include patient management perspectives.

Low levels of continuity are linked to poor diabetic control, and higher levels of care continuity are associated with good low-density lipoprotein (LDL) control (Younge & Rosenthal, 2012). A lack of diabetic and lifestyle education also affects practice issues. African Americans are less likely to follow dietary restrictions because of their environment and cultural upbringing. Client-centered goals can be used to foster an environment allowing patients to become active participants in diabetes management.

Evidence-Based Significance of the Project

The rate of obesity in the United States is increasing in all age categories. For the past 30 years, the proportion of older adults who are obese has doubled (Newman, 2009). As a world population, at least 2.8 million adult people die each year as a result of being overweight or obese (Newman, 2009). At least 7% of the world's population is over 65-years-old (Newman, 2009). As the aging population increases in numbers, so does the risk of chronic illnesses. Coronary heart disease, ischemic stroke, and Type II diabetes

are common causes for obesity among adults 65 and older (Newman, 2009). About 35.8 million of additional global chronic illnesses are caused by obesity (World Health Organization, 2012). Adverse metabolic affects causes an increase in blood pressure, cholesterol, triglycerides, and insulin resistance (The World Health Organization, 2012).

There are also nonfatal health problems that can contribute to obesity. For people who are 80 years or older, the ratio of obesity is one-half of older adults between 50 to 59 and more than 15% of the older African American population (Newman, 2009). A high body mass index has been equated to an increased risk of breast, colon, kidney, and bladder cancer (Newman, 2009). Body mass index for the adult population should range between 21 kg to 23 kg (Newman, 2009). The risk for comorbidities rises when the body mass index increases from 25 kg to 29 kg, and at 30 kg there is a severe risk for comorbidities (Newman, 2009).

Although weight problems are primarily caused by consuming more calories than are burned, other conditions and illnesses can cause weight gain and obesity. Some of these include depression, hyperthyroidism, and Cushing's syndrome (Newman, 2009). Lack of sleep contributes to obesity, and some steroids and antidepressants stimulate appetite (Newman, 2009).

Assisting the adult population to resolve obesity can lead to a decrease in chronic illness. Chronic illnesses and premature death can be decreased by 80% if known risk factors like obesity are addressed (Galland, 2015). The link between obesity and chronic illness is inflammation. Obesity activates a state of chronic inflammation, damaging the brain, the heart, blood vessels, and joints (Galland, 2015). Chronic inflammation also

causes insulin resistance, leading to diabetes. At least 75% (74.5 million adults) of obese people in the Unites States are diabetic (Long & Daggo-Jack, 2011). The high intake of monounsaturated fatty acids can increase diabetic risk (Wolf et al., 2004).

Physical activity, dietary modification, and weight reduction are effective pathways for the reduction of cardio metabolic risk. Dietary practices for diabetics and obese should include calorie restrictions, reduction in saturated fats, decreased sodium intake, and increased in dietary fiber. Morbidity, cardiovascular risk, and mortality can improve with high fruit and vegetable and nut intake (Long & Daggo & Jack, 2011). The African American populations continue to be more frequently affected with diabetes and obesity than any other population. African American groups constitute for nearly 25% of all adult patients in the United States (Long & Daggo & Jack, 2011). Over 5% of people in the United States have been diagnosed with diabetes, and over 7% are undiagnosed (Galland, 2015). Even though ethnic and racial minorities suffer more than other populations, evidence-based practice can be used to overcome obstacles of undiagnosed of diabetes. Lifestyle modification also show a significant change in diabetic and obesity concerns (Galland, 2015). Lowering obesity and diabetes rates can save lives and decrease the presence of chronic illnesses and health care costs.

Implications for Social Change in Practice

Evidence-based health care practices are available for many chronic conditions, such as asthma, heart failure, and diabetes. Evidence-based practices are acknowledged, but not always implemented in care delivery (Titler, 2008). Implementing social change in practice can be challenging. Strategies that address the complexity of systems of care,

individual practitioners, senior leaders, stakeholders, end users, and changing medical culture must occur for social change to be safely implemented (Titler, 2008). Diffusion and dissemination can be linked to partnering with professional and health care organizations to increase knowledge that can start the basis of action and ensure implementation is addressed adequately. Education for discharge teaching for a hospitalized patient with diabetes to potential users can be a start to improve education (Titler, 2008).

In the practice of dissemination, partnerships between researchers and practitioners function as knowledge brokers and health care delivery organizations (Titler, 2008). Intermediaries can also operate in this sector of professional health care. Organizations such as the National Patient Safety Foundation, or those that are active in disseminating research-based prevention programs can be useful. Dissemination also can be used to identify influential groups and communities that promote the application of evidence-based practice (Titler, 2008). Target efforts have to be made to implement all strategies with different channels that are effective. For example, nurses, pharmacists, and physicians, organizing teams, organizations, stakeholders, and individuals implement evidence-based research findings and innovations in everyday practice to focus on end user adoption, implementation, and institutionalization (Titler, 2008).

Social support is another implication for social change. Social support from family provides patients with practical help, and it can buffer the stresses of living with illness. Social change stems from future research and clinical practice (Miller & DiMatteo, 2013). There is a large proportion of diabetic patients who are nonadherent; to

social support, however, placing focus on different types of social support may lead to an increase in adherent behaviors. Many researchers have sought peer-led self-management interventions. These interventions help nonadherent diabetics become adherent. The recently diagnosed patients with Type II diabetes receives visits from an experienced peer (a patient who has been compliant to treatment and lifestyle guidelines for diabetics) and works with him/her to set a plan and goal to maintain self-care throughout a partnership (Miller & DiMatteo, 2013). Outcomes are associated with educating medical assistants with the toolkit to teach African Americans the self-management of diabetes and obesity. Integrative health coaching support from peers and health care staff allows patients to identify their own expectations and values for their health. When patients are involved with directing their care, patient activation and perceived social support increases overall health (Miller & DiMatteo, 2013).

Assumptions

In this project, I assumed that the African American population needs proper education and information on how to self-manage diabetes and obesity, and medical assistants need the knowledge to give guidance to these patients. With proper education and changing diets, along with environmental changes of patients who are diabetics and obese, a decrease in weight will occur, and blood sugars will become and remain at a reasonable level. Most African American who have diabetes are obese as well, and the desire to eat healthier is not always economically feasible (Gaines, 2010). Many impoverished neighborhoods do not have grocery stores that supply affordable, healthy choices. Instead, these families rely more on inexpensive fast food than lean meats, fruits,

and vegetables (Gaines, 2010). With the assumptions listed above, in this project, I will help to incorporate lifestyle changes and increase awareness for African Americans who suffer with diabetes and obesity.

Limitations

Many limitations can surface with any program. For example, there are different learning levels for the African American population. Everybody has a different learning style and level. Reaching all learning levels to change behaviors can be a challenge. The African American populations for this project are low income and live in high poverty areas. Obesity and diabetes for this population is rooted in these areas. Budget can also be another limitation for my target population. Program success is linked with the planning process and cutting unnecessary dollars. This can also lead to program failure because the needs of the target population can fail without enough funding to achieve desirable outcomes. Limited staff for this project can also be another limitation. Four medical assistants are employed at this clinical setting. Along with other staff responsibilities, this can limit the implementation of the project.

Summary

Type II diabetes is a growing concern for African Americans. A pathway to impacting social change in this area is education. Patients need education on the importance of diet and exercise to lower blood sugars and to decrease weight. This scholarly project was guided by a comprehensive review of literature and the use of a conceptual model to introduce this change for diabetic patients, who also suffer with obesity. Change that are rooted in evidence-based practice will improve health outcomes

and also help to make health care organizations become more aware of this growing concern of obesity and diabetes.

Section 2: Background and Context

Introduction

I searched for relevant articles from various search databases such as Ovid, CINAHL, Nursing Journals, ERIC, PubMed, and ProQuest Dissertations & Theses. I used a combination of the following keywords in the search engines: *Type II diabetes, obesity, African Americans, diabetes education, lifestyle modification,* and *diabetes knowledge.* A total of 382, 018 resulted from this search. Twenty-four articles were selected for the literature review. The articles selected discussed specialty knowledge on Type II diabetes, obesity, lifestyle modification, burden of diabetes, diabetes education, and knowledge regarding diabetes prevention and obesity.

Review of Literature

Lifestyle Modification

There have been many concerns about the complications of diabetes and obesity. Obesity alone raises the risk for many chronic diseases and poor health outcomes (Cowart, Brown, & Biro, 2010). Lifestyle modification with weight loss, exercise, and dietary changes can help manage Type II diabetes and obesity. In recent years, efforts have been made to develop more culturally-based programs that address these concerns. These include faith-based and community design interventions like physical activity and dietary plans. Using interventions to target high-risk groups within community-based environments have shown to be cost effective in decreasing diabetes and obesity (Faridi et al., 2010).

The Genesis Health Project was a community design project within local African American churches that was developed to reduce obesity and to manage diabetic issues. The project took place within a year's time, and the main focus was to promote healthy lifestyles and to empower families to adopt and sustain healthier lifestyles (Cowart et al., 2010). This project provided personal interventions and social support for African Americans to change to health behaviors long-term. This included reduction in obesity and management of diabetes. Incorporating these projects in African American churches has proven to be important for change in diabetic and obese patients (Cowart et al., 2010). Standard weight loss programs are not successful for African Americans. The church is important in African American communities. Ministers have the influence to affect attitudes, behaviors, and beliefs among the congregation (Cowart et al., 2010). Cowart et al. (2010) pointed out that programs based in African American churches have successful results for reducing weight and health risk. The Genesis Health Project results showed a reduction in weight and also lower blood glucose with education in lifestyle modification (Cowart et al., 2010).

Bernstein et al. (2013) conducted a randomized controlled trial to determine if African American participants who adhered for six weeks to a lifestyle modification would lose weight and lower blood sugars. The participants were African American women, 18-year- old or older, with a history of HgA1c between 5.7% and 6.4% and BMI greater or equal to 25% (Bernstein et al., 2013). Bernstein et al. showed a slight reduction in weight and lower blood sugars that were pertinent to the education of healthy eating and exercise regimen. This trial may have had a greater weight loss result, but due to the

short period of 6 weeks of time, the results could not be as significant (Bernstein et al., 2013). Educating African Americans in a short period of time on the importance of life style modification can decrease weight and blood glucose.

Pagoto, Kantor, Bodenlos, Gitkind, and Yunsheng (2008) conducted a diabetes prevention program in a hospital-based facility to implement weight loss for diabetics in a 16-week period. The study included 118 participants, with 72& being female (Pagoto et al., 2013). The participants were educated on the importance of exercise and diet along, with twice-a-week exercise classes. Six small group exercise session were also offered to each participant, along with five sessions with a dietician to assist each participant with designing his or her own exercise regimen to continue after the program had ended (Pagato et al., 2008). At the end of the 16 weeks, Pagato et al. showed that 30% of the participants met the 7% weight loss goal, and these participants were among the heaviest with the more unmanaged comorbidities. Exercise and diet control plays a part in the management of weight within this program.

The Prevalence of Diabetes When Associated with Obesity

Diabetes can cause heart disease and stroke, and it is the leading cause of lower extremity amputations, blindness, and kidney failure (Center for Disease Control and Prevention, 2015). Obesity is linked with diabetes. Many risk factors are connected to diabetes, such as genetics, family history, certain medications, and obesity (Center for Disease Control and Prevention, 2015). However, the primary predictor of Type II diabetes is obesity (Center for Disease Control and Prevention, 2015). The prevalence of Type II diabetes is increasing, and at the individual level, diet, nonphysical activity, and

education are causes of Type II diabetes. Oralia et al. (2014) conducted a study in Pennsylvania to examine the trends in the prevalence of diabetes with obesity from 1995 to 2010. The Behavioral Risk Factor Surveillance Survey was used to collect the data. Social demographic factors, such as, age, sex, and education were also incorporated (Oralia et al., 2014). Obesity was the primary disease factor collected. Body mass was used to determine obesity along with height and weight. These data were collected every year. Oralia et al. showed diabetes from the prevalence of obesity increased from 5.6% in 1995 to 10.5% in 2010. With the presence of obesity, diabetes became a dominant risk factor. Oralia et al. suggested that state policy makers need to consider studies to incorporate more resources and to design educational programs from state to state to reduce diabetes-related illnesses.

African Americans and Knowledge Related to Diabetes

Self-management of Type II diabetes involves weight control, diet, exercise, and blood glucose monitoring (McNeil et al., 2012). Insufficient knowledge of diabetes has had a significant influence on the management of this disease for the African American population. This contributes to difficulties for many African Americans with making changes to their lifestyle. Nam et al. (2011) stated, "A search was conducted of PubMed, ERIC, CINAHL and found 1454 articles in English published between 1990 and 2009 addressing type 2 diabetes, patient barriers, clinician's barriers and self-management" (p. 1). This search resulted in barriers to knowledge, beliefs, and adherence because patients lacked education of self-management. Other factors also include effective communication skills, social support, and clinicians' knowledge and beliefs to help guide diabetic

management (Nam et al., 2011). The goal of this review was to address issues that pertain to barriers of self-management of diabetes for both patients and clinicians. Diabetes management is suffering also due to not having a better understanding of health issues and cultural belief along with practices (Nam et al., 2011). Without education in self management, the relationship can compromise the knowledge void within the culture of African Americans. The knowledge gap deters the self-management of diabetes for African Americans. This project will help implement closing the knowledge awareness gap among the African American population.

Conceptual Model

To implement a successful program, it is necessary to use a model that incorporates self-management for successful outcomes. The chronic care model (CCM) includes evidence-based health care system changes that meet the needs of the increased numbers of people with chronic diseases. The CCM is used to implement self-management skills to increase successful outcomes (Stellefon, Dipnarine, & Stopka, 2013). This model represents the partnership between health systems and communities when restructuring health care (Stellefson et al., 2013). However, there is a need to close the education gap and self-management skill delay. The CCM will guide medical assistants' knowledge and ability to provide self-management education for diabetes and obesity. Increasing knowledge in self-management through this project may lead to goals, problem solving, and organized action planning and follow up. It may reduce the complications of diabetes and obesity. This scholarly project is a network to define problems, set priorities, establish goals, and create a plan to solve problems along the

way (Wagner, 1998). This scholarly project was guided by the conceptual framework of the CCM model as a means of increasing diabetes education, weight management, and self-management skills in practice among patients. The CCM was also used to guide the development of the toolkit.

There are six components that the CCM addresses. The first is health systems, which organizes health care. It consists of leadership and removing barriers to care, which, according to Stellefson et al. (2013), are barriers of care that influence self-management of chronic illness. The second is self-management support, and this promotes learning skills and patient empowerment (Stellefson et al., 2013). The third is decision support, providing guidance to implement evidence-based practice (Stellefson et al., 2013). The fourth is the delivery system design, and it manages the care process (Stellefson et al., 2013). The fifth is the clinical information system, which tracks progress with reporting outcomes to patients and providers (Stellefson et al., 2013). The last one is community resource and policies, which consists of sustaining care by using community-based resources and public health policy (Stellefson et al., 2013). Stellefson et al. suggested the CCM proposes self-management incorporated with structured education to produce positive outcomes for patients with chronic illnesses. With the implementation of the six measures, the CCM provided guidance along with proper education can prove to produce positive outcomes for this scholarly project.

Summary

There is a need for education for the management of Type II diabetes. This modification can be carried through with the proper education of self-management skills

and diet. The African American population has many barriers to proper education about diabetes. The CCM can guide proper education, lift barriers, and sustain consistency of proper self-management.

Section 3: Collection and Analysis of Evidence

Project Approach

The purpose of this project was to educate MAs on using a toolkit to properly educate African Americans with the self-management of Type II diabetes and obesity. Type II diabetes affects 24 million individuals in the United States, and over the past 30 years, the rate of diabetes has tripled in African Americans (Tull, 2013). Obesity has been a pervasive factor of this chronic illness. Approximately half of African American adults meet the criteria for non-insulin-dependent diabetes, and many are undiagnosed (Tull, 2013). The goals for this project consisted of increasing MAs knowledge of diabetes and obesity. The goal of the toolkit was as follows: reduce weight by 3 to 5%, decrease random glucose levels under 140, education on nutrition, and implementation of 50 minutes of exercise 3 days a week for a total of 150 minutes a week. A toolkit will be provided for MAs to implement the goals stated above. These goals will be measured from recording sheets throughout the 12-week period and calculated at the end for evaluation. I will develop the toolkit; the MAs will implement the toolkit and evaluate its data along with the MD overseeing them.

The Plan for Medical Assistants

The training that was provided for the MAs (for the toolkit) started with a pretest (Appendix A) to assess their knowledge on diabetes and obesity. After scored, the MAs reviewed the Power Point educational module (Appendix I). Once viewed, the MAs were administered a posttest (Appendix B) and were scored. A score of 80% or better will

determine if knowledge was gained to implement the toolkit. The MAs will then implement the toolkit.

The Implementation of the Toolkit

The MAs will plan to triage patients at their appointment times scheduled. The triage will include explanation of the program and the outcomes the program sets out to achieve. There will be a prequestionnaire (Appendix C) related to obesity and diabetes for participants. The questionnaire would be used to assess knowledge of patients on self-management of obesity and diabetes. Data will be assessed from the electronic medical record (EMR) to determine weight, weight changes, time diagnosis with diabetes, and blood sugar ranges.

After all of the information is collected, the patients would be contacted within 2 weeks to ensure they are still interested in the program. The next appointment would include signing consent forms, discussing normal weight ranges based on height, normal values for blood sugars, and obtaining a fasting blood sugar. Group meetings will be set up for 12 weeks, three times a week for 2 hours a day. These meetings will include dietary interventions (cooking and grocery shopping choices), education on diabetes and lowering blood sugars, journals of blood sugars, weight control methods (exercise, journals on weight), and a weigh in. Each meeting patients would be given goals for the next week and an entire overview of the objectives stated in the project objectives. After completion of the program, the participants will be given a posttest questionnaire (Appendix D) to assess their knowledge gained on the self-management of diabetes and obesity. All of the above instruction will be provided to the MAs within the toolkit.

The purpose of this project was to educate MAs on using a toolkit to properly educate African Americans with Type II diabetes on self-management of diabetes and obesity (Appendix A-I). There is limited or no proper education for African Americans on the self-management of diabetes and obesity (Funnel et al., 2010). The CCM guides the toolkit to promote removing barriers, implement self-management support, and promote learning skills to incorporate the education process (Stellefson et al., 2013). Education can provide a means of change and compliance to which patients can adhere. The CCM model will help to provide patients with the answers to questions such as who, what, when, where, and how the education process will associate the change needed to improve the management of diabetes and obesity. The need for education in self-management is the foundation for this project, as well as to help African Americans to become compliant in a regimen to live better lives with the chronic illness of diabetes and obesity.

Populations/Who will Benefit from Toolkit Education

The four MAs at the local clinic will provide the education to the patients. The target population who will benefit from this project will be African American patients who have diabetes and who also suffer from obesity. The population has to have all three characteristics. The patients will be African Americans, both men and women. There are four MAs, three medical physicians, and one therapist. All participants being educated by the MAs must be 180 pounds or over, based on weight and height proportions that would consider them to be obese. Random glucose levels must also be over 160 for at least 6 months (Polit & Beck, 2014). The participants will be triaged from St. Vincent

Physicians Medical Center outpatient facility. I will use a convenience sample. The convenience sample is a nonprobability sampling technique that allows the researcher to select subjects who have the easiest accessibility (Polit & Beck, 2014).

Data Collection

Protection of Human Rights

Institutional review board (IRB) approval was obtained from Walden University (07-11-17-0377267). A letter of approval from the local health system allowed me to educate the medical assistants.

Steps of Program

The MAs will be educated from the toolkit. After a passing score of 80%, the MAs will implement the toolkit. The Center for Disease Control and Prevention (2017) viewed MAs as community health frontline workers with an understanding of the community served. MAs serve as a liaison between doctors, social workers, and the community to reach an unreachable population, such as African American (Center for Disease Control and Prevention, 2017). This is consistent with the roll MAs in this clinical setting. The MAs will follow these steps to implement the program. Within 2 weeks after the triage appointment, the MAs will send participants an invitation letter inviting them to participate in the program. The participants will then receive an informed consent to sign. A pretest will be administered to the patients to access their knowledge of diabetes and obesity. Instruction will be provided on how to fill in recording sheets, journaling all meals, weights, and blood sugars three times a day (Appendix G; weight and blood sugar for first day of program also), the days for the exercise program,

nutritional classes on diet, along with discussion of time and length of the program. Body mass index (BMI) will not be used based upon the length of this project. To measure BMI, this project would have to exceed for 6 months or longer. Dieticians, Mas, and group personal trainers will be a part of team that collaborates in this program to meet and set goals. The participants will journal from home on all of the above, and they will bring journals in for transfer to recording sheets weekly by MAs. The program will meet only 3 days a week, and documentation of the other 4 days needs to be recorded for an accurate evaluation at the end of the program. The participants will include in their journal their weight, height, and waist circumference at the start of the program and once a week thereafter. Weighing in and measurements of waist circumference will take place at the program facility because all scales are different, and accuracy of measurement is an important factor in weight, height, and circumference. These measurements will also be entered on the recording sheets. Recording sheets will be used to transfer all information from journals at meetings. Throughout the program, the MAs will transfer all information. The data will be kept in a locked file cabinet at St. Vincent's Medical Center. All progress for each goal will be compared on the differences at the end of the 12 weeks. The Mas will implement the toolkit. The medical doctor of the clinic will review all guidelines of the toolkit and oversee the program to make sure the toolkit follows practices approved from the American Diabetes Association.

Project Evaluation Plan for Medical Assistants

The MAs were evaluated from the pre and posttest given within the toolkit. A pretest (Appendix A) was given before viewing of the educational module. The

educational module was viewed (Appendix I) and questions were asked and answered for clarity. The same pretest in the form of a posttest (Appendix B) was given to assess the knowledge gained from the educational module.

Project Evaluation Plan for Participants

After collection of all data recording sheets, data will be ready to be analyzed by the MAs. The MAs will compare all data throughout Week 1 through Week 12, as recorded on the recording sheets. The data will be used to compare and evaluate if the goals and objectives are met. The evaluation will include comparing how each participant is doing on a weekly basis with all measurements. This baseline is an important indicator to evaluate goals. Blood sugar values, weight measurements, and weight reduction values will be compared from Week 1 to Week 12. This plan will be used to evaluate these factors to ensure that the outcomes were or were not met. The same 10-question, multiple choice pretest will be in the form of a posttest. The posttest will be used to evaluate the knowledge learned from the program and if the knowledge has changed after participating in the program. Scores for the posttest should have a passing score of 85% or better. The participants will also receive a diabetic and obesity evaluation form about the participation in the program in a Likert style scale with possible responses of *strongly disagree, agree, disagree,* and *strongly disagree* (Appendix H).

Summary

The purpose of this project was to educate MAs to properly educate the African American population with the self-management of diabetes and obesity. Out of 23 million people in the United States with diabetes, 16 million are African Americans

(Kallon, 2003). Obesity has added to this illness. There is a need to provide education about these two chronic illnesses and to promote self-management. Implementation of education, including exercise and lifestyle modification, has been analyzed in the review of literature. Through this scholarly project, African Americans will be educated on the self-management of diabetes and obesity to sustain a lifelong change to better health. The posttest will evaluate these learning needs as evidence of a passing score.

Section 4: Findings and Recommendations

Introduction

Type II diabetes has affected 24 million individuals in the United States, and over the past 30 years, the rate of Type II diabetes has tripled in African Americans (Tull, 2013). Obesity has been a pervasive factor of this chronic illness. Approximately half of both African American and European American adults meet the criteria for non-insulin-dependent diabetes, and many are undiagnosed (Tull, 2013). Other risk factors are influencing the frequency of diabetes in the African American population and playing a role in the population's association with this disease. These would include obesity, physical inactivity, insulin resistance, and genetic factors (Tull, 2013).

Individuals at risk for, or with, Type II diabetes can delay or manage the disease with lifestyle change programs (Whittemore et al., 2009). The participants who engaged in lifestyle change programs, such as diet regiments and exercise, have shown weight reduction and lower blood glucose levels (Whittemore et al., 2009). To manage diabetes and obesity successfully, patients must be compliant with treatment, exercise, and diet regiment. Dietary restriction needs must be implemented, physical activity goals must be met, and self-monitoring education must be followed through (Miller & DiMatteo, 2013).

Interpretation of Findings

The four MAs were administered the pretest before viewing the educational module. The pretests mean score was 80. The MAs then viewed the educational module. Questions were asked and answer for clarity. The posttest was administered, and a posttest mean score of 93 was scored ($p < .05$). With proper education of diabetes and

obesity, the MAs can properly educate African Americans on the self-management of diabetes and obesity with the toolkit created.

Limitations

Limitations of the program can vary. Many resources may not be available to fund this program; a reimbursement model will be needed to fund a self-management diabetes and obesity program. Another resource would be time for the MAs to provide proper education to participants. Other limitations can include new data being developed in the scope of practice. The toolkit will have to be continuously evaluated and updated to meet the guidelines of the American Diabetes Association and other diabetes prevention foundations.

Implication for Evidence-Based Practice/Social Change

Medical doctors, nurses, and health care team members are trained to provide education on many levels concerning chronic illnesses (American Association of Diabetes Educators, 2016). As a member of a health care team, managing obesity and diabetes can lead to better health for African Americans. Providing proper education can prolong life, lead to a healthier lifestyle, and decrease rates of future complications concerning health status. Diabetes education is a part of diabetes care and is covered by most Medicare and health insurance plans (American Association of Diabetes Education, 2016). The successful implementation of this project will promote health care team members to provide the needed education to support and help African American to self-manage obesity and diabetes. With proper education, African Americans can control nutritional needs, while lowering blood sugars that will result in losing weight. With the

above stated, life expectancy can be prolonged. Potential positive social change would include lifestyle changes due to managing care properly, decreasing prediabetic patients from becoming Type 2 diabetics, and managing healthier weights to lower blood sugars for the African American population.

Recommendations

One recommendation that can address the gap in practice is to implement more diabetic and obesity programs into clinics and communities with proper education to participants as well as staff. Educating health care teams to improve planning and implementation of these programs can lower the risk in the African American population. Participants need programs in their communities to provide support and follow-up measures to properly advance education to lead to better lifestyle choices and prolong life expectancy. Another recommendation would be to have proper funding, such as reimbursement programs, in clinics and community centers. Strategic planning to enhance reimbursement policies for prevention services can help close the gap on the self-management of diabetes and obesity (National Diabetes Prevention Program, 2016).

Recommended Implementation/Evaluation Procedures

The MAs will implement the toolkit. The MAs will be educated prior to the implementation of the toolkit. This would include a pre and posttest to evaluate proper knowledge to educate African Americans on the self-management of diabetes and obesity. The participants will be selected from EMR records they must suffer from Type II diabetes and obesity and be African American. Consent will be signed to participate in the program prior to acceptance. Explanation of the program and requirements will be

explained to each participant interested. The MAs will administer a pretest on diabetes and obesity to participants at the start of the program that will be included in the toolkit. Weight and fasting blood sugars of participants will be charted in journals at the first day of the program. The participants will keep the journal to bring to every meeting and be transferred onto recording sheets by MA. The MAs will be in charge of the program, and the medical doctor of the medical center will oversee the implementation and evaluation. The participants will meet 3 days a week to receive education on food choices, participate in 5a 0-minute exercise program, and to have information transferred onto recording sheets. At the end of the 12-week program, the MAs will evaluate weight and blood sugars from the recording sheets to evaluate outcomes. The participants will be administered the same pretest as a posttest to evaluate knowledge on diabetes and obesity at the end of the program. A Likert style evaluation form will also be administered about participation in the program. All documents stated above will be included in the toolkit.

Strengths and Limitations

One of the strengths of this scholarly project is to provide education in small practices, communities, and facilities on the proper self-management of diabetes and obesity, which is shown to be lacking in the literature of self-management. Some of the limitations would include participants' reliability to follow through the whole 12 weeks of the program. Another limitation would be time in the workday for the MAs to also implement this project and still be responsible for task in their workday.

Recommendations for Future Projects

A recommendation for future projects would be including participants from other backgrounds and cultures to properly educate them on the self-management of diabetes and obesity. Hispanics are also a race with obesity and diabetics illness. Adding other cultures can meet more educational needs for these two illnesses. Another recommendation would be to provide sufficient time for the medical staff to be able to implement the toolkit and to be no interference from expected workload in the day.

Section 5: Dissemination Plan

Dissemination

This project can be disseminated to clinics, community centers, and hospital facility units through skill presentations. Diabetes and obesity affects many other systems in the body. Dissemination of the project would be well used in cardiac units because diabetes and obesity are linked to heart disease and stroke patients. The toolkit would be taught to medical staff and also to diabetic educators in facilities to help patients with weight and self-management of diabetes. Presentation can also be delivered through diabetes and obesity support sites. Another way to disseminate is to publish in The American Diabetes Association. Sharing ideas through publication in the discipline of nursing and dissemination can reach many disciplines and levels.

Analysis of Self

My DNP education has helped me become a better leader and to broaden my knowledge and awareness of evidence-based practice. As a scholar, the DNP program has helped me take on challenges to use my critical thinking skills to prepare me in identifying issues in nursing and to apply my knowledge in the solution of a health care problem. All health care team members play a part in the solution of a patient's illness. It is important for all team members to be present and a part of the solution. As a clinician, I am prepared from this program to dedicate identifying gaps in evidence for nursing practice and to be part of the solution. Putting this project together, I have encountered many obstacles (writing, proofreading, what to put in the right spot and understanding exactly what I was doing) in the DNP program. I am glad to say that developing this

project has shown me my dedication to accomplish a mission and be a change agent to better health for Type II diabetics who suffer with obesity.

Summary

Type II diabetes and obesity affects many African Americans. African American have high rates with diabetes and obesity. Health care teams need to be educated properly to help with the self-management of these two chronic illnesses. Lifestyle changes such as diet and exercise are required for prolonged life. If clinics, community centers, and hospital facilities are educated properly, these life-threatening illnesses can be managed and also prevented. I have completed this toolkit to make this goal obtainable.

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Appendix A: Pretest

(Medical Assistants)

Name:

Date:

1. How many calories in a 2-Liter of soda?
    a. 800-1000
    b. 1000-1100
    c. 800-1300
    d. 0
2. What range is a normal blood sugar?
    a. 70-120
    b. 50-100
    c. 120-180
    d. 180-300
3. When should diabetics take their blood sugar?
    a. before meals
    b. after meals
    c. during meals
    d. not at all
4. What population is at high risk for obesity and diabetes?
    a. Asians
    b. Caucasians
    c. Native Americans
    d. African Americans & Hispanics
5. What other risk can occur with diabetes and obesity?
    a. HIV

b. Cancer

c. Hypothyroidism

d. Heart disease & Stroke

6. What is the normal range of BMI?

a. 17.2-30.2

b. 30.2-40.4

c. 50.2-51.2

d. 18.2-23.5

7. How often is exercise necessary in a week?

a. 3 days a week

b. 1 day a week

c. 6 days a week

d. none

8. What is the recommended cardiovascular exercise time limit?

a. 60 minutes

b. 30 minutes

c. 10 minutes

d. 90 minutes

9. What are the signs of a low blood sugar? (select all that apply)

a. confusion

b. shaky

c. headache

d. tired

e. none of the above

10. What are the signs of a high blood sugar? (select all that apply)

a. thirsty

b. talkative

c. frequent urination

d. none of the above

Appendix B: Posttest

Medical Assistants

Name:

Date:

1. How many calories in a two Liter of soda?
    a. 800-1000
    b. 1000-1100
    c. 800-1300
    d. 0
2. What range is a normal blood sugar?
    a. 70-120
    b. 50-100
    c. 120-180
    d. 180-300
3. When should diabetics take their blood sugar?
    a. before meals
    b. after meals
    c. during meals
    d. not at all
4. What population is at high risk for obesity and diabetes?
    a. Asians
    b. Caucasians
    c. Native Americans
    d. African Americans & Hispanics

5. What other risk can occur with diabetes and obesity?
    a. HIV
    b. Cancer
    c. Hypothyroidism
    d. Heart disease & Stroke
6. What is the normal range of BMI?
    a. 17.2-30.2
    b. 30.2-40.4
    c. 50.2-51.2
    d. 18.2-23.5
7. How often is exercise necessary in a week?
    a. 3 days a week
    b. 1 day a week
    c. 6 days a week
    d. none
8. What is the recommended cardiovascular exercise time limit?
    a. 60 minutes
    b. 30 minutes
    c. 10 minutes
    d. 90 minutes
9. What are the signs of a low blood sugar? (select all that apply)
    a. confusion
    b. shaky
    c. headache
    d. tired
    e. none of the above
10. What are the signs of a high blood sugar? (select all that apply)

a. thirsty

b. talkative

c. frequent urination

d. none of the above

Appendix C: Pretest

(Participants)

1. How many calories in a double cheeseburger?
    a. 300 calories
    b. 100 calories
    c. 100 calories
    d. over 1000 calories
2. What is a normal blood sugar?
    a. 180-300
    b. 120-180
    c. 180-300
    d. 70-120
3. When should blood sugars be taken?
    a. after meals
    b. during meals
    c. do not have too
    d. before meals
4. What are the signs of high blood sugars? (select all that apply)
    a. thirsty
    b. frequent urination
    c. increased appetite
    d. lethargic
5. What are the signs of low blood sugar
    a. confusion/shaky/ headache
    b. tired

c. sleepy

d. lots of energy

6. How often do you inspect your skin?

a. daily

b. never

c. twice a week

d. once a week

7. What is the recommend time period to exercise per day?

a. 60 minutes

b. 10 minutes

c. 90 minutes

d. 30 minutes

8. What is the normal range for BMI?

a. 18.2-23.5

b. 17.2-30.2

c. 30.2-40.2

d. 50.2-51.2

9. How many days a week is recommended for daily exercise?

a. 1 day

b. once a month

c. 3 days

d. none

10. What are some lifestyle changes for weight reduction?

a. exercise/diet changes/no smoking

b. eat at fast food restaurants only once a week

c. do not change anything

d. buy bigger clothes

Appendix D: Posttest

(Participants)

1. How many calories in a cheeseburger?
    a. 300 calories
    b. 100 calories
    c. 500 calories
    d. over 1000
2. What is a normal blood sugar?
    a. 70-120
    b. 50-70
    c. 120-180
    d. 180-300
3. When should blood sugars be taken
    a. after meals
    b. before meals
    c. during meals
    d. do not have too
4. What are the signs of high blood sugar (select all that apply)
    a. thirsty
    b. frequent urination
    c. increase appetite
    d. lethargic
5. What are the signs of low blood sugar?
    a. confusion/shaky/headache
    b. tired
    c. sleepy

d. lots of energy

6. How often do you inspect your skin?
    a. daily
    b. never
    c. twice a week
    d. once a week
7. How much is the recommended time to exercise a day?
    a. 30 minutes
    b. 60 minutes
    c. 10 minutes
    d. 90 minutes
8. What is a normal BMI?
    a. 18.2-23.5
    b. 17.2-30.2
    c. 30.2-40.4
    d. 50.2-51.2
9. How many days is recommended to exercise a week?
    a. 3 days
    b. 1 day
    c. none
    d. 5 days
10. What are some lifestyle changes for obesity?
    a. exercise/diet changes/no smoking

b. eat at fast food places once a day

c. do not change anything

d. buy bigger clothes

Appendix E: Recording Sheets

(Participants)

First Day Recording Sheet

Day:

Time:

Weight:

Blood sugar:

Appendix F: Journal Sheets

(Participants)

Day	Date	Time	BS__
Monday		1. 2. 3.	1. 2. 3.
Tuesday		1. 2. 3.	1. 2. 3.
Wednesday		1. 2. 3.	1. 2. 3.
Thursday		1. 2. 3.	1. 2. 3.
Friday		1. 2. 3.	1. 2. 3.
Saturday		1. 2. 3.	1. 2. 3.
Sunday		1. 2. 3.	1. 2. 3.

Appendix G: Recording Sheet

TRANSFERED BY MEDICAL ASSISTANTS

NAME

DAY	DATE	BLOOD SUGAR/TIME TAKEN	WEIGHT	EXERCISE
MONDAY		1. 2. 3.		
TUESDAY		1. 2. 3.		
WEDNESDAY		1. 2. 3.		
THURSDAY		1. 2. 3.		
FRIDAY		1. 2. 3		
SATURDAY		1. 2. 3.		

SUNDAY		1. 2. 3.		

Appendix H: Evaluation Form

1. Did this program increase your knowledge on self-management of diabetes and obesity?
    a. most likely
    b. likely
    c. less likely
    d. not at all
2. How likely did this program change your lifestyle in management of diabetes and obesity?
    a. most likely
    b. likely
    c. less likely
    d. not at all
3. The information for the program was easy to follow?
    a. most likely
    b. likely
    c. less likely
    d. not at all
4. The journaling sheets were suitable for program information?
    a. most likely
    b. likely
    c. less likely
    d. not at all
5. There was an enough time to fill out information needed in the journal?
    a. most likely

b. likely

c. less likely

d. not at all

6. The staff was supportive?

a. most likely

b. likely

c. less likely

d. not at all

7. Question for the program were answered in detail

a. most likely

b. likely

c. less likely

d. not at all

8. The lifestyle change in the diet was manageable?

a. most likely

b. likely

c. less likely

d. not at all

9. The exercise time was manageable?

a. most likely

b. likely

c. less likely

d. not at all

10. Are you likely to recommend this program?

a. most likely

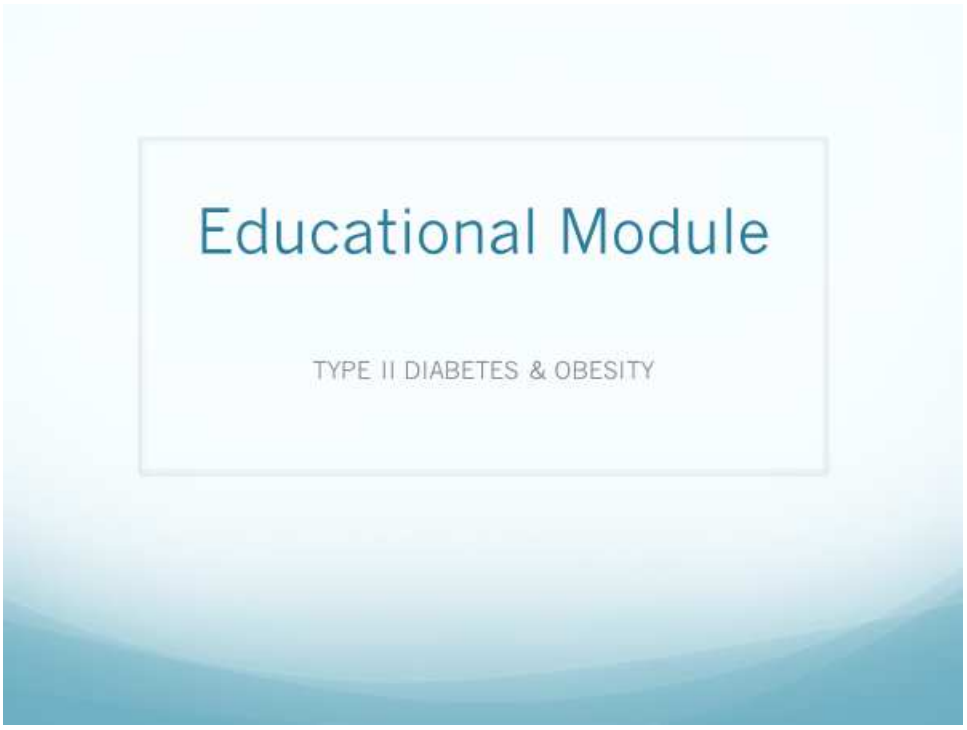
b. likely

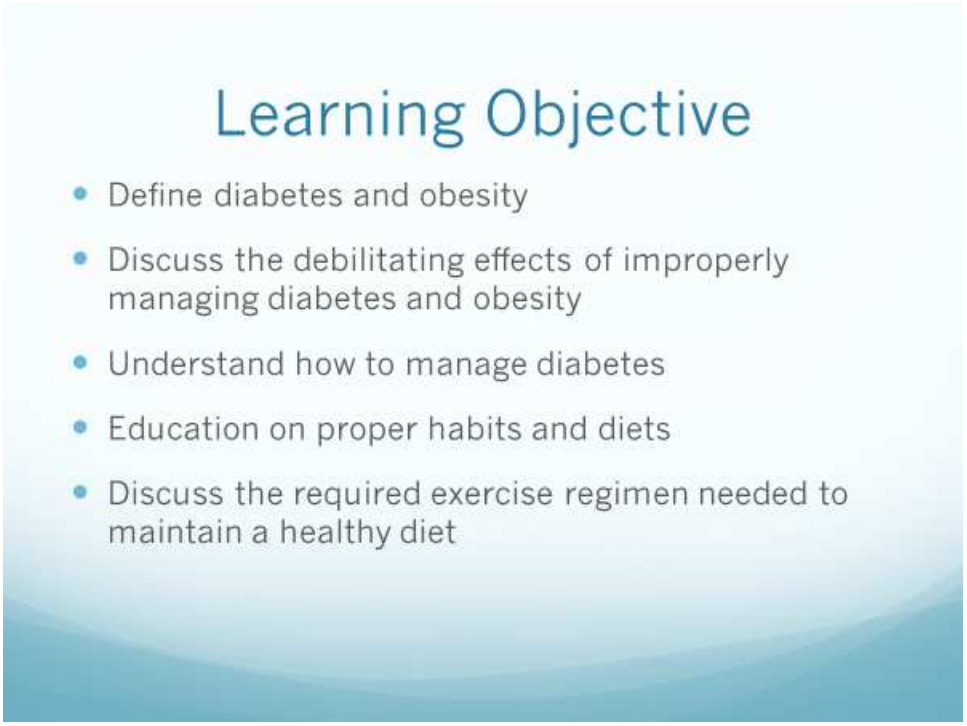
c. less likely

d. not at all

Comments:

Appendix I: Education Module





What is Diabetes

- A chronic condition that affects the way your body metabolizes sugar (glucose) an important source of fuel
- The body can resist the effects of insulin (a hormone that regulates the movement of sugar into your cells)
- Or your body does not make enough insulin to maintain your glucose level (American Diabetes Association, 2012)

What is Obesity

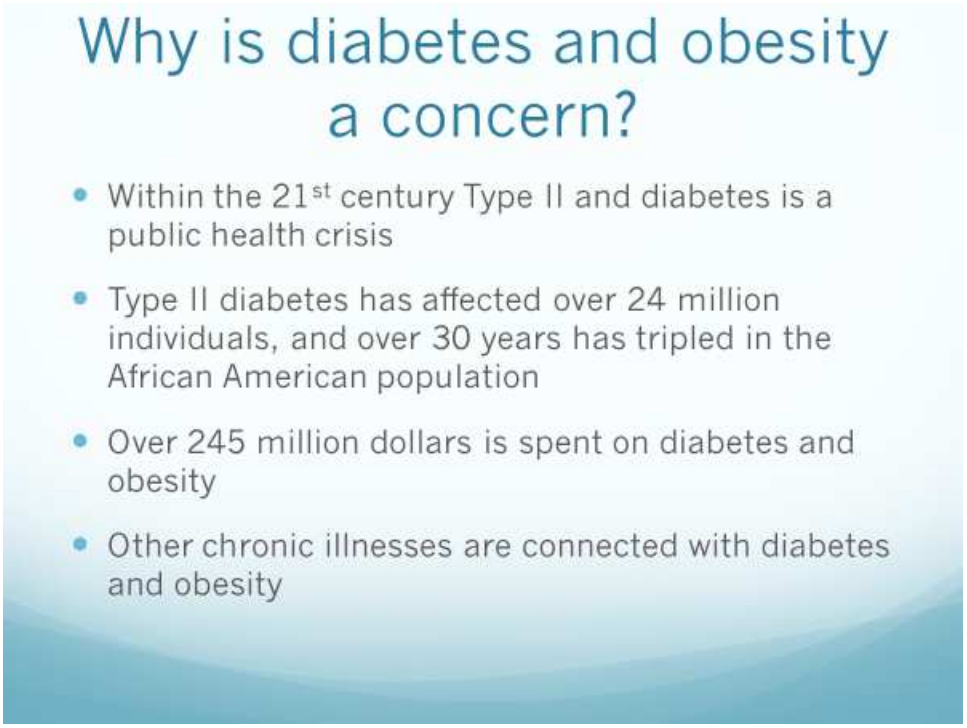
- Obese: when you are overweight with a body mass index (BMI) that is equal to or greater than the 95th percentile (American Diabetes Association, 2012).
- BMI formula: weight (in kilograms) and divide by height (in meters) squared (Center of Disease Control and Prevention, 2014).

Program Overview

- Welcome and Introduction
- Meeting will be three days a week over 12 weeks
- Goals: reduce weight by 3-5%,reducing random glucose levels under 140, proper education on nutrition, self-management and implementation of exercise
- Self-management of diabetes and exercise

Effects of diabetes and obesity

- Heart disease
- Stroke
- Amputations
- Loss of vision
- Vascular difficulties
- Death


Why is diabetes and obesity a concern?
Within the 21st century Type II and diabetes is a public health crisis
Type II diabetes has affected over 24 million individuals, and over 30 years has tripled in the African American population
Over 245 million dollars is spent on diabetes and obesity
Other chronic illnesses are connected with diabetes and obesity


What can be done?
Proper education on diet and exercise
Keeping track of blood sugars and weight
Making sure physicians appointments are kept
Taking blood sugar at regulated times and choosing proper foods
Exercising on regular bases

Points to live by

- Normal blood sugar ranges
- Foods high in sugar
- At least 30 minutes of exercise 3 days a week
- Fast food choices
- What to do when blood sugar is high or low
- Reading nutrition labels
- Journaling foods choices, blood sugar ranges and exercise
- Alcohol diabetes and obesity

Setting goals

- 12 week program
- Self-management for life-style changes
- Summary
- Evaluation


Questions
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