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Type 2 Diabetes Prevention Program in the Medical Office Clinic

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This is to certify that the doctoral study by

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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

The challenge of diabetes prevention is to reduce the financial and human costs of diabetes by preventing new cases and enacting social change. African Americans and Hispanics Americans have a high incidence of Type 2 diabetes because of factors that place them at risk for prediabetes. The purpose of this project was to plan the implementation and evaluation of a Type 2 diabetes prevention program in a medical office clinical setting. The clinic of interest was located in the downtown area of the city and provided care mostly to African American population. The Iowa model of evidence-based practice formed the theoretical framework for the study. The goal was to decrease the number of African Americans patients who will convert from prediabetes to Type 2 diabetes in the medical office clinic. The program was planned using the information from the Center for Disease Control and Prevention Road to Health toolkit. The outline covered a 6-week program. A pretest will be given to assess baseline knowledge of diabetes and diabetes prevention. The same test will be given after the implementation to evaluate if the program enhanced diabetes and diabetes prevention knowledge. Six months after the implementation of the program, nurses will complete a chart review to evaluate how many patients converted from pre-diabetes to Type 2 diabetes since the implementation of the project. The project will lead to the integration of a Type 2 diabetes prevention program in a medical clinic. It will increase the number of African Americans with prediabetes who will engage in lifestyle modification behavior. The project will also decrease the incidence of Type 2 diabetes among African Americans and reduce the health disparity of diabetes among the population.

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Dedication

I dedicate this project to my husband, children, and parents, for their unfailing love and overwhelming support.

Acknowledgments

I will like to thank God almighty for all He has done for me. All my accomplishments will not be possible without Him. I have so many reasons to praise you my God.

I will like to express my sincere gratitude to my love and wonderful husband Mike. You have been very supportive throughout this journey. You have taken care of the children and picked-up extra household activities just to make it easier for me to work on my DNP program. You are my special gift from God.

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Finally, to my mentor Dr. T, my preceptor Jade, and my project committee, I salute you for the learning opportunities provided for me to grow.

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Section 1: Nature of the Project

Introduction

The inadequate control of diabetes continues despite the advance in technology, diagnosis, and treatment (Nam, Chesla, Stotts, Kroon, & Janson, 2011). Poor control of diabetes is a result of failure of adequate intervention by healthcare professionals and inadequate management by patients. Nurses with doctorate in nursing practice (DNP), may propose evidence-based practice changes that will reduce the cost of diabetes, improve documentation, quality of life, and nursing care outcomes. In this section, I will discuss the overview of an evidence-based practice. I will include the background, problem statement, purpose statement, project objectives, significance to practice, project question, evidence-based significance of the practice, implications for social change, and definition of terms. I will also discuss the assumptions and limitations of evidence-based practice to implement diabetes prevention program in a medical clinical setting.

Background

Diabetes threatens the health of many people living in the United States. The American Diabetes Association (ADA, 2011) and Center for Disease Control and Prevention (CDC, 2008) have implemented numerous educational materials and activities to help decrease the prevalence and incidence of Type 2 diabetes. Diabetes is still a significant health problem and is the seventh-leading cause of death in the United States (Healthy People 2020, 2011). According to Healthy People 2020 (2011), there is an estimate of a 15 year reduction in life span that is attributed to diabetes. People with diabetes are more prone to developing “heart disease, stroke, blindness, kidney failure,

and lower-limb amputations" (CDC, 2014, p. 5). The CDC (2014) also reported that in 2012, the total diabetes cost (direct and indirect) in the United States alone was $245 billion. The direct medical expenses of $176 billion were 2.3 times more than the population without diabetes, and the indirect cost from work loss, disability, and death was $69 billion (CDC, 2014). The challenge of diabetes prevention is to reduce the financial and human costs of diabetes through prevention of new cases and social change.

African Americans and Hispanics Americans have a high incidence of Type 2 diabetes because of factors that place them at risk for prediabetes. According to CDC (2014), in 2012, 29.1 million people in the United States of all ages had diagnosed (21.0) or undiagnosed diabetes (8.1) and among the population, 28.9 million were 20-years-old or older. When separated by age, 4.3 million were 20-to 44- years-old, 13.4 million were 45-to 65-years-old, and 11.2 million were 65 years or older (CDC, 2014). CDC also reported that the number of men among the population was 15.5 million while women were 13.4 million. Newly diagnosed diabetes in 2012 for adults 20 years and older was 1.7 million and among the population, 371,000 were 20-44 years old, 892,000 were 45-64 years old and 400,000 were 65 years old (CDC, 2014). The CDC (2014) reported the differences in diagnosing rates by race and ethnicity from 2010 to 2012, which included European Americas 7.6 %, Asian Americans 9.0%; Hispanics Americans 12.8 %, African Americans 13.2 %, and Native American 15.9%. The age-adjusted rate of diagnosed diabetes among Hispanics American adults alone in Central and South America was 8.5%, for Cubans it was 9.3 %, for Mexican Americans it was 13.9 %, and for Puerto Rican it was 14.8 % (CDC, 2014). Among the Asian American population, the CDC also

reported that the rate of diagnosis for the Chinese population was 4.4%, 13.8 % for Asian Indian, 11.3% for Filipinos, and 8.8% for other Asians. The rate for Alaska Natives was 6.0%, while the American Indians in Southern Arizona had a rate of 24.1 % (CDC, 2014). The increase in the number of individuals with diabetes from 2010 to 2012 is an indication that diabetes is a healthcare problem that requires attention.

The population with less than a high school education had a higher percentage of diabetes when compared to those with higher than a high school education (CDC, n.d.). The prevalence of diabetes also increased among different states that had individuals with diabetes. The prevalence of diagnosed diabetes in 1994 was 4.5% in 25 states, 4.5% to 6.0% in 24 states, and over 6.0% in one state, but in 2010, all states had a prevalence of diabetes over 6.0%, and 15 of the states exceeded 9.0% (CDC, 2012). When compared by states, Mississippi had the highest rate of diagnosed diabetes at 11.3%, followed by Alabama at 11.1% (CDC, 2012). The lowest rate of diagnosed diabetes was in Vermont at 5.8 %, followed by Montana and Minnesota at 6.2 % each (CDC, 2012). The distribution of diabetes across the states also showed increase in prevalence of diabetes, especially in the Southeast.

Problem Statement

The current increase in adults with diabetes in the United States is an indication that diabetes prevention is a health care issue that deserves high priority. Diabetes prevention education may not be a priority for nurses in a medical office clinic because diabetes may not be the primary reason for an office visit. Unsatisfactory diabetes

prevention outcome is attributed not only to individuals at risk for Type 2 diabetes, but also to health care providers. According to Maryniuk, Mensing, Imershein, Gregory, and Jackson (2013), nurses may not be aware of the armamentarium available for the effective prevention of Type 2 diabetes. The needs assessment of a medical office clinic revealed that one out of five nurses in the clinic had knowledge of the CDC Road to Health Toolkit educational material for diabetes prevention.

Diabetes prevention education is one of the ways to reach the population at risk for Type 2 diabetes. According to Nam et al. (2011), poor control of diabetes is a result of failure to initiate or enhance appropriate diabetes management and prevention by health care providers and inadequate management by patients. There is a gap in nursing knowledge regarding diabetes care and prevention (Maryniuk et al., 2013). Nurses and certified nurse educators are trained to provide diabetes education to the population with diabetes or at risk for diabetes. One-third or one-half of the population with diabetes or at risk for diabetes never had formal diabetes education (Maryniuk et al., 2013). Providing diabetes prevention education to millions of the population at risk for Type 2 diabetes in the United States is a challenge to health care providers.

Purpose Statement and Project Objectives

The purpose of this DNP project was to plan the implementation and evaluation of a Type 2 diabetes prevention program in a medical office clinical setting. The objective of the project was to plan the delivery of an educational program on Type 2 diabetes prevention in the medical office clinic. I also planned the method of evaluation

of the educational program on Type 2 diabetes prevention in a medical office clinic. The educational program covered the Road to Health Toolkit material and served as a new standard of care for the prevention of Type 2 diabetes among African Americans with pre-diabetes who visit the clinic.

Significance of the Project to Practice

The significance of the DNP project is to highlight strategic plans that can be implemented by medical office clinics to help raise awareness of Type 2 diabetes prevention and to focus on the individuals with prediabetes. The project will empower medical office clinic staff to take initiative in the implementation of Type 2 diabetes prevention program for individuals with prediabetes who are at risk for Type 2 diabetes. It will reduce the cost of healthcare by minimizing unnecessary care. It will also decrease the incidence of Type 2 diabetes and promote the Healthy People 2020 goal to reduce health disparity among the populations with diabetes (Healthy People 2020, 2011). Nurses need to constantly search for avenues to improve on their knowledge and awareness of new approaches, techniques, and technologies and to formulate strategies to measure outcome (Bradshaw, 2010). Nurses are front-line providers and their decisions and input increase knowledge, awareness, and foster change in an organization (Bradshaw, 2010). Translating the DNP project into practice will increase the knowledge, decision making, critical thinking, and confidence level of nurses in the quality of diabetes prevention education given to the population with prediabetes. The project will also improve documentation and communication between health care professionals and individual with prediabetes and also promote consistency of care.

Project Question

The Population or Patients, Intervention, Comparison, and Outcome (PICO) was used to formulate a question for this project. The formulation of a PICO question was the first step in this evidence-based practice project. One of the main purposes of formulating a PICO question is to provide relevant and best evidence research that can be translated into practice (Melynk & Fineout-Overholt, 2010). The PICO question for this evidence-based practice project was the following: Among medical clinic nurses caring for African Americans with prediabetes, will an educational module based on the Road to Health Toolkit materials promote the implementation of a Type 2 diabetes prevention program in the clinical setting?

Evidence-Based Significance of the Project

Lifestyle modification is the best treatment for prediabetes, prevention, or reduction of the progression to Type 2 diabetes. Healthy lifestyle practices could prevent 80-90% of all cases of Type 2 diabetes (Yates et al., 2012). In high-risk populations, Yates et al.(2012) also found that the risk of progressing to Type 2 diabetes can be reduced by up to 60% with lifestyle interventions aimed at promoting healthy diet, moderate-vigorous intensity physical activity, and weight loss or weight maintenance. An increase in moderate physical activity and weight reduction can decrease the risk of type 2 diabetes by 58% on patients with prediabetes (Letassy et al., 2010). There is a positive relationship between weight reduction, physical activity and diabetes prevention.

Implications for Social Change in Practice

The implementation of the DNP project in medical office clinics will improve preventive behavior among individuals with prediabetes who are at risk for Type 2 diabetes. Early awareness and intervention of prediabetes is crucial because individuals with prediabetes are at an increased risk of developing Type 2 diabetes, cardiovascular diseases, and other chronic diseases. Almost every family or hospital unit has an individual with diabetes, history of diabetes, or at risk for diabetes (Young, 2011). Poor diabetes management has a detrimental effect on patients, families, and communities. The implementation of a Type 2 diabetes prevention educational intervention in the medical office clinic, and the enhancement of Type 2 diabetes prevention among African Americans with prediabetes, will create social change in the community. The project will lead to the integration of a Type 2 diabetes prevention program in a medical clinic. It will increase the number of African Americans with prediabetes who will engage in lifestyle modification behavior. The project will also decrease the incidence of Type 2 diabetes among African Americans and reduce the health disparity of diabetes among the population.

The prevention of Type 2 diabetes has a positive effect on the quality of life and overall wellbeing of many people (Murray et al., 2011). Most of the activities designed to prevent Type 2 diabetes have focused on lifestyle modification intervention techniques, such as diet and exercise. Individuals who engage in lifestyle modification behaviors to prevent Type 2 diabetes will also benefit from other health benefits of exercise and healthy diet. This lifestyle will lead to weight reduction, cardiovascular fitness, decreased

cardiovascular risk, improved sleep patterns, and decrease in the severity of stress and depression.

Definitions of Terms

Diabetes: A progressive disorder of abnormal elevation in the blood glucose level as a result of a lack of insulin, decreased ability of the body to use insulin, or both. Insulin is a hormone in the body that allows sugar (glucose) into the body cell to be converted into energy. A defect in insulin secretion, insulin action, or insulin resistance will result in high blood sugar (ADA, 2011).

Road to Health Toolkit: Educational material developed by the National Diabetes Education Program in partnership with the National Institutes of Health and the CDC (2008). The program was designed to delay or prevent the development of diabetes in the African-American and Latino communities with prediabetes (CDC, 2008).

Prediabetes: Individuals with prediabetes have a high blood sugar, but not high enough to be considered or diagnosed with diabetes. People with prediabetes are at an increased risk of developing Type 2 diabetes within 5 years if not controlled or corrected by lifestyle modification (ADA, 2011).

Type 2 Diabetes: Known as noninsulin-dependent or adult-onset diabetes occurs when the body develops resistance to insulin or does not produce enough insulin to regulate the blood glucose.

Assumptions and Limitations

It is presumed that the implementation of the DNP project to promote Type 2 diabetes prevention will lead to changes in a medical office clinical setting. The clinic

staff will value the program and accept the education. The patients who visit the clinic will accept the teaching, make some lifestyle modifications, and believe that preventing diabetes is worth the effort. There was also an assumption that the project will improve the quality of care and patient outcome at the medical office clinical setting by decreasing the incidence of Type 2 diabetes, improving patient and staff satisfaction, and reducing medical cost from diabetes care.

One of the major limitations of implementing the diabetes prevention program in a medical clinic is resistance to change. Change is stressful, may be difficult, and may disrupt the medical clinic norms causing resistance. Expecting all members of the group to accept change at the same time is unrealistic. According to Kelly (2011), about 68% of the population will express a personality type that is resistant to change, while 32% will express a personality that is accepting to change. Another factor that may negatively affect the implementation of the DNP project in a medical clinic is the limited time. Time limitation will make it difficult to evaluate the outcome of the implementation from the patient perspective and to incorporate preventive behavior strategies into patient care before the end of the program. The project will also require funding to purchase materials necessary for a successful planning.

Summary

Health care organizations are becoming aware of the need to implement behavior changes that are based on evidence-based practice that will improve health care outcomes. Medical clinic health care professionals play a role in disease prevention by

motivating, educating, and providing feedbacks to individuals at risk for Type 2 diabetes.

In section 1, I discussed the DNP project proposal, coving the nature of the project.

Section 2: Review of Literature and Theoretical Framework

Introduction

Diabetes and its complications can be significantly delayed or prevented through simple cost effective intervention (International Diabetes Federation, 2010). The purpose of this DNP project was to plan the implementation and evaluation of a diabetes prevention program in a medical office clinical setting. In Section 2, I will discuss the literature review and the evidence-based framework underlying the diabetes prevention program in a medical office clinical setting.

Literature Review

I reviewed relevant articles from multiple search databases such as CINAHL, Ovid Plus, Nursing Journals, ERIC, and PubMed. The keywords included *Type 2 diabetes, prediabetes, health care professional, practice nurses, medical clinic office, diabetes prevention, diabetes education, diabetes knowledge, lifestyle modification,* and *diabetes belief.* The articles selected specifically discussed health care professional knowledge regarding diabetes prevention and diabetes education, population belief about diabetes, lifestyle modification, and the burden of diabetes.

Lifestyle Modification

Lifestyle modification with weight control, moderate exercise, and dietary changes can decrease Type 2 diabetes. Lifestyle modification is more effective and has more of a prolonged impact in Type 2 diabetes prevention than drug treatment (Gillies et al., 2007). The challenge with Type 2 diabetes prevention is the transfer of the research findings on lifestyle modifications into real world practice. Jansink, Braspenning, Weijen,

Elwyn, and Grol (2010) showed that patients have limited insight into their behavior, healthy lifestyle knowledge, and lack of motivation to modify or sustain a better lifestyle. Jansink et al. concluded that nurses report insufficient time and lack of counseling as barriers in effective lifestyle counseling in diabetes care. Intensive lifestyle intervention produce beneficial changes in physical activity, diet, biomedical and clinical parameters, and reduced risk for diabetes (Lindstrom et al., 2003). Nilsen, Bakke, and Gallefoss (2011) conducted a study that involved 213 participants at risk for Type 2 diabetes to examine the effect of lifestyle intervention on individuals at risk for Type 2 diabetes and concluded that modest clinical effort can lead to lifestyle changes in these patients. Lifestyle intervention can promote patient outcome in individual at risk for Type 2 diabetes.

Lifestyle intervention in a structured environment plays an important role in helping patients achieve lifestyle changes. Moore et al. (2011) conducted a randomized control trial to evaluate the effectiveness of a 6-month, group-based diabetes prevention program on a population at risk for prediabetes. The aim was to examine whether taking part in the program contributed to changes in modification risk factors for Type 2 diabetes. The intervention group improved their motivation to change, diabetes knowledge, activity levels, and healthy eating. They also displayed a higher reduction in body mass index, weight, fasting blood sugar, and blood pressure. Render et al. (2000) conducted a research review on interventions to improve diabetes management in the outpatients, primary care, and community settings. Professional intervention, organizational intervention, and intervention with patient education improved process

outcomes. Enhanced nursing role and intervention with patient education will results in desired patient health outcome.

Nurses Diabetes Knowledge

Health care facilities depend on nurses to provide diabetes education to individuals at risk for Type 2 diabetes or prediabetes. Nurses have limited knowledge and understanding when providing care for patients with diabetes (Young, 2011). Chan and Zang (2006) conducted a research study to examine nurses' perceived and actual knowledge level of diabetes. A total of 245 nurses completed a structured questionnaire measuring nurses' experience, perception of diabetes and diabetes knowledge. Chan and Zang found the importance of adapting programs to meet the educational need of specific nursing professionals such as psychiatric nurses. Health care providers, especially nurses, must be knowledgeable about current evidence-based practices and resources to provide competent, effective, and cultural sensitive education in the prevention of Type 2 diabetes among African Americans. Griffis, Morrison, Beauvais, and Bellefountaine (2007), conducted a needs assessment on nurses to determine their knowledge of diabetes care and found a gap between staff nurses' perceived knowledge and their actual knowledge of diabetes mellitus. Olsen, Granath, Wharen, Blom, and Leksell (2012) published the result of their study on nurses in municipal care and their perceived knowledge of diabetes. An interview was administered with 22 enrolled nurses who were employed on the date of the interview, and Olsen et al. showed a lack of knowledge of diabetes among the enrolled nurses employed within the municipal health care. Nash (2009) conducted a study on mental health nurses' diabetes care skill, using a 16-item self-reporting

questionnaire on 138 mental health nurses from 18-to 65-years-old. Nash found that 64% of the nurses felt that they did not receive appropriate diabetes care training, while 86% believed that they needed further training in diabetes care. Nurses working with population at increased risk for diabetes or Type 2 diabetes must be equipped with the knowledge of providing evidence-based diabetes prevention education to the population.

Nurses in the inpatient and outpatient care setting have the same responsibility to provide diabetes education to patients with diabetes despite the setting. Ahmed, Jabbar, Zuberi, Islam, and Shamim (2010) conducted a study to assess the diabetes knowledge of nurses and resident trainees. The aim was to examine their knowledge on outpatient and inpatient aspects of diabetes care management. Another aim was to identify areas of deficiency that would require educational reinforcement. Ahmed et al. found that registered nurses had deficit in both outpatient and inpatient knowledge of diabetes. Carney, Stein, and Quinlan (2013) showed the need to enhance the nutritional knowledge of both nursing students and nurses in regard to diabetes management. Nurses are not registered dieticians, but basic knowledge of diabetes nutrition should be provided and maintained by nurses caring for patients with diabetes.

African Americans Belief Related to Diabetes

In addition to lifestyle modification and nurse's diabetes knowledge, one's belief and attitude influences diabetes prevention. Nam et al. (2011) discovered that multiple factors affect a patient's self-management of diabetes. Some of the factors include a patient's adherence; belief; attitude; knowledge about diabetes; and also language and cultural competencies, financial resources, social support and comorbidity. The clinician

factors that influence a patient's diabetes management and perception include belief, attitude, knowledge, communication skills, and well-integrated care system (Nam et al., 2011). According to Tripp-Retmer, Cho, Kelly, and Enslein (2001), the high prevalence, increased complication, and poor outcome of diabetes among African Americans is a result of a lack of cultural sensitive and population specific intervention by health care providers. It is also related to the lack of knowledge on the disease process and treatment regime by African Americans. Calvin, Quinn, Dancy, Park, Fleming, Smith, and Fogelfeld (2011) studied the African American perceived risk for diabetes complication, interrelationship among illness perception and well-being. Calvin et al. found that 33% of the participants perceived themselves as being at risk for diabetes complication. Skelly, Leeman, Carlson, Soward, and Burns (2008) examined African Americans beliefs and knowledge about diabetes. Skelly et al. found that participants did not consider exercise, weight control, and physical activity as a factor that could influence diabetes. Skelly et al. also found that participants had a lack of knowledge regarding the cure of diabetes. Lack of insight on the part of African Americans on the cause and treatment of diabetes contributes to inadequate health outcome.

Burden of Diabetes

The correct projection of diabetes cost and healthcare burden is important for the future planning of healthcare needs and cost. Boyle, Thompson, Gregg, Barker, and Williamson (2010) conducted a study on the projection of the burden of diabetes among the United States adult population in the year 2050. Boyle et al. found an increase in the incidence of diabetes from eight cases per 1000 in 2008 to an estimate of fifteen cases per

1000 in 2050. The prevalence of diabetes will increase from 14% to 21% in 2010 and mortality prevalence will increase to 33% in 2050 (Boyle et al. 2010). Boyle et al. concluded that effective preventive interventions that focused on high-risk population can reduce future increase in the prevalence of diabetes. Lifestyle intervention can reduce the increase in diabetes prevalence.

Evidence-Based Framework

The Iowa model of evidence-based practice to promote quality care formed the standard framework for the project. The model approached evidence-based practice (EBP) from an organizational perspective, rather than individual provider perspective. The Iowa model provides guidance for nurses and other clinicians in making decisions about day-to-day practices that affect patient outcomes (Grove, Burns, & Gray, 2013). The model is based on problem-solving steps in the scientific process and is widely recognized for its applicability and ease of use by multidisciplinary healthcare teams (Grove et al., 2013). The Iowa model uses key triggers that are problem focused or knowledge focused. These triggers lead the clinician in utilization of the components of the model in a systematic and scientific manner (Grove et al., 2013). Initially, the clinician generates a question from either a clinical problem or as a result of becoming aware of new knowledge. The second step in the model is to determine if the question is relevant to organizational priorities. If the question posed is relevant; then the next step in the process is to determine if there is any evidence to answer the question. If there is insufficient evidence, then the model supports that new evidence should be generated through research. Once the evidence has been determined and it is deemed sufficient, a

team is formed, and the pilot of the practice change is performed (Grove et al., 2013). If the change is appropriate and adopted into practice, the final step will be to disseminate the result.

Summary

The literature review has indicated that Type 2 diabetes can be prevented with lifestyle modification. The problem with Type 2 diabetes prevention was attributed to the population with prediabetes and nurses providing care to the population with prediabetes. In Section 2, I discussed the literature review and theoretical framework of planning Type 2 diabetes prevention in a medical office clinical setting.

Section 3: Methodology

Project Design/Method

The main purpose of this DNP project was to plan the implementation and evaluation of a Type 2 diabetes prevention program in a medical office clinical setting. The evidence-based project will be provided in an outpatient physician's office clinic in Southern California. In a needs assessment of the medical office clinic, I found that a high number of African Americans patients with prediabetes converted to type 2 diabetes in 2013. The medical office clinical setting has no intervention or practice protocol that was aimed at decreasing Type 2 diabetes among African American patients with prediabetes. A discussion with the medical director of the clinic resulted in the need to plan the implementation and evaluation of a Type 2 diabetes prevention program in a medical clinic. The medical office clinic nurses will implement and evaluate the program. The goal will be to decrease the number of African Americans patients who will convert from prediabetes to Type 2 diabetes. The intervention will be an educational module covering the Road to Health Toolkit. The medical office clinic nurses will also use the project material when educating the patients with prediabetes.

The initial step in planning the implementation of an educational intervention covering the Road to Health Toolkit materials will include the gathering of resources that will be necessary for the planning of the program. The resources will consist of a DNP student who will plan the project, medical office clinic staff who will implement the project, and the site for the implementation, which will be a medical office clinic. The resources will also include classroom, hand-outs, technology, teaching aids, and nurses. I

will be responsible for the step-by-step planning of the implementation, including the evaluation plan. The clinic staff will use the plans that I developed in the implementation of the project in a medical office clinic. The plan of the project will include having the medical office clinic develop a team that will facilitate the project during the implementation phase. The team will consist of two to three members of the medical office clinic staff who will supervise the process and progress of the implementation. The achievement of a successful project will depend on the team leader. The team leader can provide support to team members, build a positive relationship among members, and remain positive and firm when the goals of the project are challenged (Zaccagnini & White, 2011). Tasks will be divided among the team members where one person will be responsible for educating the participants, one person may be the recorder, and one person may be responsible for organizing the team and project. All team members will participate in the evaluation of the program.

In addition to forming a team, I will establish an outline of the educational intervention. The Road to Health Toolkit material consists of three sections, and each section has four units. The outline for the intervention will cover a 6-week period of weekly sessions. Each session will last 2 hours and cover two units of the teaching material. The topic selection will be based on African American prediabetes, and Type 2 diabetes. The 2 hour educational material will be delivered via a face-to-face interaction in the classroom. The interaction will include discussion, video, and activities such as games. Handouts on Type 2 diabetes prevention material will be provided, and

participants will also receive information on how to locate the Road to Health Toolkit educational materials on the Internet.

Target Population

The evidence-based DNP project will be conducted in the family practice clinic that was opened 10 years ago and is located in the downtown area of the city. The clinic practice specializes in the care of children, adults, and geriatrics. The staff is comprised of three physicians, two nurse practitioners, four registered nurses, five licensed vocational nurses, a secretary, and a laboratory technician. The clinic provides care to the mostly African American and Hispanic American population of low socioeconomic status who are suffering from diabetes, heart diseases, lung diseases, and minor infections. The medical office clinical setting also provides routine check-ups and preventive care to children, adults, and geriatrics. The target population for the DNP project will be nurses working in the medical clinic office because they will be responsible for the implementation of the program. The nurses will include a nurse practitioner (NP), registered nurses (RN), and licensed vocational nurses (LVN). Selected nurses have received some form of education in the past regarding prediabetes, diabetes, and diabetes prevention.

Intervention Outline

The planning of the implementation of an intervention in the medical office clinic requires the cooperation of the medical director and key stakeholders of the clinic. A meeting will be scheduled with the medical director and key stakeholders to discuss the goals and objectives of the project and to get the approval to use the clinic as the project

planning site. Clinic nurses will be notified of the project either by face-to-face meeting or via e-mail. The involvement of the clinic staff early in the process will minimize the organizational constraint, improve motivation, promote buy-in, and ensure cooperation during the implementation phase.

The next step will be to obtain approval from an institutional review board (IRB). According to Hodges and Videto (2011), any project that requires data collection from human being including those conducting need assessments and evaluation, will need to apply for permission to proceed. Participant's confidentiality and privacy will be protected during the planning of the implementation of the project by using medical record numbers when necessary or no identifiable form.

Project Evaluation Plan

I will plan an evaluation method that the medical office clinic nurses will use to determine the effectiveness of the Type 2 diabetes prevention program. The first step in the evaluation process is to form a team that will include nurses in the medical office clinical setting. The evaluation team will oversee the evaluation process and ensure that the program planning and implementation align with program goals and objectives. The evaluation plan will include both formative and impact evaluation. The formative evaluation will involve the collection of information about activities, characteristic and outcome of the program. The evaluation team will use formative evaluation to determine if the intervention met the set goals and objectives, if the Road to Health Toolkit material is appropriate for the program, and if the timing of the intervention was acceptable and convenient for the target population. The team will also conduct impact evaluation to

measure the extent to which the project caused the intended short-term goal by decreasing the number of patients in the medical office clinical setting who convert from prediabetes to Type 2 diabetes. The evaluation method will include a questionnaire to evaluate the attitudes of nurses and patients towards the program. The method will also include chart review to evaluate the number of patients that progress from prediabetes to Type 2 diabetes.

Summary

Medical clinic health care professionals play a role in disease prevention by motivating, educating, and providing feedback to individuals at risk for Type 2 diabetes. The fight against diabetes requires a comprehensive approach that will not only address the disease, but the factors leading to the disease such as prediabetes. Medical clinic health care professionals must be equipped with the materials and knowledge of current evidence-based practices in providing effective diabetes prevention education to patients at risk for Type 2 diabetes. In Section 3, I discussed the project design and method. I also discussed the target population, intervention outline, and evaluation plans.

Section 4: Findings, Discussion, and Implications

Introduction

The purpose of this DNP project was to plan the implementation and evaluation of a Type 2 diabetes prevention program in a medical office clinical setting. The project objectives were to (a) plan a delivery of the educational intervention on Type 2 diabetes prevention and (b) plan the evaluation method of the educational intervention. The DNP project was designed for medical office clinic nurses to implement with the population with prediabetes who visit the clinic. The clinic is located in the downtown area of the city and provides care to mostly African Americans in a low socioeconomic group. The goal of the Type 2 diabetes prevention program was to reduce the number of African American patients who will convert from prediabetes to Type 2 diabetes

Discussion

The project began with a meeting that was held in the medical office clinic. The people present at the meeting were the clinic medical director, nurses, and me. During the meeting, I elaborated on the plan to design a Type 2 diabetes prevention program in the clinic. I discussed how the program will benefit the population with prediabetes, family members or friends of those with prediabetes, and also improve health outcomes. A team was formed that included a registered nurse in the clinic and I. I received approval from the clinic stakeholders and Walden IRB to proceed with the planning of the educational program. Upon approval of the DNP project proposal, I used the materials and information from the Road to Health toolkit to design a binder that contained the material required for the step-by-step implementation and evaluation of the Type 2 diabetes

prevention program at the clinic. The binder contained a program outline (Appendix A), pretest for each sections (Appendix B), Power Point Presentation slides (Appendix C), Posttest (Appendix D), evaluation form (Appendix E), pamphlets, handouts, and some Road to Health toolkit materials. The participants were to meet 2 hours a day, once a week for 6 weeks. During the initial visit, an assessment of prediabetes, height, weight, history of medical history, and family history will be completed. A pretest will be given to assess baseline knowledge of diabetes and diabetes prevention. The participants will take the same test as a posttest to evaluate if the program enhanced diabetes and diabetes prevention knowledge. Six months after the implementation of the program, nurses will complete a chart review to evaluate how many patients converted from prediabetes to Type 2 diabetes in the medical office clinic since the implementation of the program.

The program outline was designed to fit each patient need and knowledge level. The program was also designed to be implemented to an audience of one or more persons. The medical office director agreed to designate a team of two nurses to oversee the diabetes prevention program implementation and evaluation. Team member roles included a team leader who will run and direct the program and a facilitator who will assume the role of team leader if the team leader is not available. Although all of the nurses in the medical office clinic received instruction on the project and how to implement the program, the team leader and facilitator are recognized as the diabetes prevention program champions in the clinic. I provided my contact information for questions or assistance during the implementation and evaluation phase.

Implication for Evidence-based Practice

Nurses and certified nurse educators are trained to provide diabetes education to the population with diabetes or at risk for diabetes. In one study, one-third to one-half of the population with diabetes never had formal diabetes education (Maryniuk et al., 2013). This DNP project has the potential to lead to the integration of Type 2 diabetes prevention programs in a medical office clinic setting, thereby increasing the population at risk for Type 2 diabetes who has received formal diabetes education. Currently, there is no existing reimbursement model to fund a diabetes prevention program in a medical office clinic (Katula, Blackwell, Rosenberger, & Goff, 2011). The successful implementation of the project may promote a reimbursement policy for diabetes prevention services in a medical office clinic. The project, when implemented, will influence nursing practice by making nurses more proactive in the prevention of Type 2 diabetes. Outcome data will need to be gathered in order to evaluate how nurses are using the materials to promote diabetes prevention among the population at risk for Type 2 diabetes. The DNP project will also influence social change by decreasing the number of African Americans with prediabetes who convert to Type 2 diabetes and reduce health disparity of diabetes among the population.

Strength, Limitation, and Recommendation

The medical director of the clinic made time available to discuss the feasibility of the project plans. The program was built on cultural-specific resources that are appropriate for the medical office clinic setting. The program champions were enthusiastic about the Type 2 diabetes prevention program. The program can be

implemented to either an individual patient or group of patients. The program was designed to be suitable for individuals with different learning styles, and patients can proceed with the program based on their needs and knowledge level. A strength of the program was the use of a single-group pretest/posttest design to evaluate knowledge. The single-group pretest/posttest design provides counterfactual that makes it possible to estimate the impact of a program on participants.

One limitation is that the program will require resources that are not available at the medical office clinic. Currently, there is no existing reimbursement model to fund a diabetes prevention program in a medical office clinic (Katula et al., 2011). According to the medical director, the medical clinic will need resources such as physical space to conduct the education and time for nurses to provide the education to the population. Another limitation is the use of a single-group pretest/posttest to evaluate knowledge. I cannot be certain that the observed change in behavior or knowledge between the pretest and the posttest are the result of the intervention from this Type 2 diabetes prevention program. Other confounding factors may have affected the participants or the program.

One recommendation for improvement for future evidence-based projects is the consideration of reimbursement policies when planning the implementation and evaluation of a Type 2 diabetes prevention program in a medical office clinic. According to Katula et al. (2011), the Center for Medicare and Medicaid Services (CMS) and National Diabetes Prevention Program (NDPP) are developing strategic plans that will enhance reimbursement policy for diabetes prevention services. It is imperative that I investigate the criteria and process of obtaining certification from NDPP for

reimbursement during the planning of the program. Adequate funding will promote the implementation and evaluation of the program by the medical office clinic.

Analysis of Self

DNP is the education that helps a person reach his or her potential, become a better leader, and be all that he or she can be (Zaccagnini & White, 2012). The DNP program, including the practicum and DNP project experience, has helped me to become a leader, capable of influencing others to make changes. I can proudly call myself a change agent, interested in root-cause analysis of issues that pertain to health care. As a scholar, I am capable of using critical thinking to appraise existing literature and apply knowledge in the solution of a health care problem. I encountered many challenges (writing papers, proofreading, finding the information, knowing the next step, putting things in the right place, and so on) during the development of my DNP project. Despite the challenges, I am a dedicated practitioner interested in identifying gaps in the evidence for nursing practice. Developing a plan for Type 2 diabetes prevention has demonstrated my capacity to function as a project manager, exposing me to some projects that require leadership roles in directing, motivating, and influencing others to accomplish a mission and improve an organization.

Summary

Diabetes is a health care issue that has no boundary and has cost pain and suffering for many people. However, diabetes is preventable or can be delayed with effective and efficient intervention. The magnitude of diabetes and the related complications require a collaborative team effort from the public, diverse health care

professionals, and variety of health care settings. The numbers of certified diabetes educators are limited when compared to the population at risk for Type 2 diabetes who require diabetes prevention intervention. Planning a Type 2 diabetes prevention program in a medical office clinic is one of the ways to motivate and encourage health care professionals from different health care setting to engage in the fight against diabetes. This project has developed my leadership skills and made me a change agent in health care issues. In order for this DNP project to be considered successful, it must be implemented and evaluated by the medical office clinic nurses.

Section 5: Scholarly Product:

Project Summary and Evaluation Report

There is clear and compelling evidence from many countries that diabetes and its complications can be significantly delayed or prevented, through simple cost effective intervention (International Diabetes Federation, 2010). The inadequate control of diabetes continues despite the advance in technology, diagnosis, and treatment (Nam, Chesla, Stotts, Kroon, & Janson, 2011). Poor control of diabetes is a result of failure of adequate intervention by healthcare professionals and inadequate management by patients. Nurses with doctorate in nursing practice (DNP), may propose evidence-based practice changes that will reduce the cost of diabetes, improve documentation, quality of life, and healthcare outcomes. I will discuss an evidence-based project that was conducted in a medical office clinic. I will include in my discussion the background, purpose, and nature of a DNP project, project design and setting, presentation of result, interpretation of finding, implication for evidence-based practice of the project, and evaluation.

Background, Purpose, and Nature of Project

Diabetes threatens the health of many people living in the United States. The American Diabetes Association (ADA, 2011) and Center for Disease Control and Prevention (CDC, 2008) have implemented numerous educational materials and activities to help decrease the prevalence and incidence of Type 2 diabetes. Diabetes is still a significant health problem and is the seventh-leading cause of death in the United States (Healthy People 2020, 2011). According to Healthy People 2020 (2011), there is an estimate of a 15 year reduction in life span that is attributed to diabetes. People with

diabetes are more prone to developing “heart disease, stroke, blindness, kidney failure, and lower-limb amputations” (CDC, 2014, p. 5). The CDC (2014) also reported that in 2012, the total diabetes cost (direct and indirect) in the United States alone was $245 billion. The direct medical expenses of $176 billion were 2.3 times more than the population without diabetes, and the indirect cost from work loss, disability, and death was $69 billion (CDC, 2014). The challenge of diabetes prevention is to reduce the financial and human costs of diabetes through prevention of new cases and social change.

African Americans and Hispanics Americans have a high incidence of Type 2 diabetes because of factors that place them at risk for prediabetes. According to CDC (2014), in 2012, 29.1 million people in the United States of all ages had diagnosed (21.0) or undiagnosed diabetes (8.1) and among the population, 28.9 million were 20-years-old or older. When separated by age, 4.3 million were 20-to 44- years-old, 13.4 million were 45-to 65-years-old, and 11.2 million were 65 years or older (CDC, 2014). CDC also reported that the number of men among the population was 15.5 million while women were 13.4 million. Newly diagnosed diabetes in 2012 for adults 20 years and older was 1.7 million and among the population, 371,000 were 20-44 years old, 892,000 were 45-64 years old and 400,000 were 65 years old (CDC, 2014). The CDC (2014) reported the differences in diagnosing rates by race and ethnicity from 2010 to 2012, which included European Americas 7.6 %, Asian Americans 9.0%; Hispanics Americans 12.8 %, African Americans 13.2 %, and Native American 15.9%. The increase in the number of individuals with diabetes from 2010 to 2012 is an indication that diabetes is a healthcare problem that requires attention.

Lifestyle modification with weight control, moderate exercise, and dietary changes can decrease Type 2 diabetes. Lifestyle modification is more effective and has more of a prolonged impact in Type 2 diabetes prevention than drug treatment (Gillies et al., 2007). The challenge with Type 2 diabetes prevention is the transfer of the research findings on lifestyle modifications into real world practice. Jansink, Braspenning, Weijen, Elwyn, and Grol (2010) showed that patients have limited insight into their behavior, healthy lifestyle knowledge, and lack of motivation to modify or sustain a better lifestyle. Jansink et al. concluded that nurses report insufficient time and lack of counseling as barriers in effective lifestyle counseling in diabetes care. Intensive lifestyle intervention produce beneficial changes in physical activity, diet, biomedical and clinical parameters, and reduced risk for diabetes (Lindstrom et al., 2003). Nilsen, Bakke, and Gallefoss (2011) conducted a study that involved 213 participants at risk for Type 2 diabetes to examine the effect of lifestyle intervention on individuals at risk for Type 2 diabetes and concluded that modest clinical effort can lead to lifestyle changes in these patients. Lifestyle intervention can promote patient outcome in individual at risk for Type 2 diabetes.

Lifestyle intervention in a structured environment plays an important role in helping patients achieve lifestyle changes. Moore et al. (2011) conducted a randomized control trial to evaluate the effectiveness of a 6-month, group-based diabetes prevention program on a population at risk for prediabetes. The aim was to examine whether taking part in the program contributed to changes in modification risk factors for Type 2 diabetes. The intervention group improved their motivation to change, diabetes

knowledge, activity levels, and healthy eating. They also displayed a higher reduction in body mass index, weight, fasting blood sugar, and blood pressure. Render et al. (2000) conducted a research review on interventions to improve diabetes management in the outpatients, primary care, and community settings. Professional intervention, organizational intervention, and intervention with patient education improved process outcomes. Enhanced nursing role and intervention with patient education will results in desired patient health outcome.

Health care facilities depend on nurses to provide diabetes education to individuals at risk for Type 2 diabetes or prediabetes. Nurses have limited knowledge and understanding when providing care for patients with diabetes (Young, 2011). Chan and Zang (2006) conducted a research study to examine nurses' perceived and actual knowledge level of diabetes. A total of 245 nurses completed a structured questionnaire measuring nurses' experience, perception of diabetes and diabetes knowledge. Chan and Zang found the importance of adapting programs to meet the educational need of specific nursing professionals such as psychiatric nurses. Health care providers, especially nurses, must be knowledgeable about current evidence-based practices and resources to provide competent, effective, and cultural sensitive education in the prevention of Type 2 diabetes among African Americans.

In addition to lifestyle modification and nurse's diabetes knowledge, one's belief and attitude influences diabetes prevention. Nam et al. (2011) discovered that multiple factors affect a patient's self-management of diabetes. Some of the factors include a patient's adherence; belief; attitude; knowledge about diabetes; and also language and

cultural competencies, financial resources, social support and comorbidity. The clinician factors that influence a patient's diabetes management and perception include belief, attitude, knowledge, communication skills, and well-integrated care system (Nam et al., 2011). Lack of insight on the part of African Americans on the cause and treatment of diabetes contributes to inadequate health outcome.

The correct projection of diabetes cost and healthcare burden is important for the future planning of healthcare needs and cost. Boyle, Thompson, Gregg, Barker, and Williamson (2010) conducted a study on the projection of the burden of diabetes among the United States adult population in the year 2050. Boyle et al. found an increase in the incidence of diabetes from eight cases per 1000 in 2008 to an estimate of fifteen cases per 1000 in 2050. The prevalence of diabetes will increase from 14% to 21% in 2010 and mortality prevalence will increase to 33% in 2050 (Boyle et al. 2010). Boyle et al. concluded that effective preventive interventions that focused on high-risk population can reduce future increase in the prevalence of diabetes. Lifestyle intervention can reduce the increase in diabetes prevalence.

The purpose of this DNP project was to plan the implementation and evaluation of a Type 2 diabetes prevention program in a medical office clinical setting. The project objectives were to (a) plan a delivery of the educational intervention on Type 2 diabetes prevention and (b) plan the evaluation method of the educational intervention. The goal of the Type 2 diabetes prevention program was to reduce the number of African American patients who will convert from prediabetes to Type 2 diabetes

Project Design and Setting

The evidence-based DNP project will be conducted in the family practice clinic in Southern California that was opened 10 years ago and is located in the downtown area of the city. The clinic practice specializes in the care of children, adults, and geriatrics. In a needs assessment of the medical office clinic, I found that a high number of African Americans patients with prediabetes converted to type 2 diabetes in 2013. The medical office clinical setting has no intervention or practice protocol that was aimed at decreasing Type 2 diabetes among African American patients with prediabetes. A discussion with the medical director of the clinic resulted in the need to plan the implementation and evaluation of a Type 2 diabetes prevention program in a medical clinic. The intervention will be an educational module covering the Road to Health Toolkit. The Road to Health Toolkit material consists of three sections, and each section has four units. The outline for the intervention will cover a 6-week period of weekly sessions. Each session will last 2 hours and cover two units of the teaching material. The topic selection will be based on African American prediabetes, and Type 2 diabetes. The 2 hour educational material will be delivered via a face-to-face interaction in the classroom. The interaction will include discussion, video, and activities such as games. Handouts on Type 2 diabetes prevention material will be provided, and participants will also receive information on how to locate the Road to Health Toolkit educational materials on the Internet.

The target population for the DNP project will be nurses working in the medical clinic office because they will be responsible for the implementation of the program. The

nurses will include a nurse practitioner (NP), registered nurses (RN), and licensed vocational nurses (LVN). Selected nurses have received some form of education in the past regarding prediabetes, diabetes, and diabetes prevention. The medical office clinic nurses will implement and evaluate the program. The medical office clinic nurses will also use the project material when educating the patients with prediabetes.

The project began with a meeting that was held in the medical office clinic. The people present at the meeting were the clinic medical director, nurses, and me. During the meeting, I elaborated on the plan to design a Type 2 diabetes prevention program in the clinic. I discussed how the program will benefit the population with prediabetes, family members or friends of those with prediabetes, and also improve health outcomes. A team was formed that included a registered nurse in the clinic and I. I received approval from the clinic stakeholders and Walden IRB to proceed with the planning of the educational program. The Iowa model of evidence-based practice formed the theoretical framework for the study.

Presentation of Result

Upon approval of the DNP project proposal, I used the materials and information from the Road to Health toolkit to design a binder that contained the material required for the step-by-step implementation and evaluation of the Type 2 diabetes prevention program at the clinic. The binder contained a program outline (Appendix A), pretest for each sections (Appendix B), Power Point Presentation slides (Appendix C), Posttest (Appendix D), evaluation form (Appendix E), pamphlets, handouts, and some Road to Health toolkit materials. The participants were to meet 2 hours a day, once a week for 6

weeks. During the initial visit, an assessment of prediabetes, height, weight, history of medical history, and family history will be completed. A pretest will be given to assess baseline knowledge of diabetes and diabetes prevention. The participants will take the same test as a posttest to evaluate if the program enhanced diabetes and diabetes prevention knowledge. Six months after the implementation of the program, nurses will complete a chart review to evaluate how many patients converted from prediabetes to Type 2 diabetes in the medical office clinic since the implementation of the program.

Interpretation of Findings

The medical director of the clinic made time available to discuss the feasibility of the project plans. The program was built on cultural-specific resources that are appropriate for the medical office clinic setting. The program champions were enthusiastic about the Type 2 diabetes prevention program. The program can be implemented to either an individual patient or group of patients. The program was designed to be suitable for individuals with different learning styles, and patients can proceed with the program based on their needs and knowledge level. A strength of the program was the use of a single-group pretest/posttest design to evaluate knowledge. The single-group pretest/posttest design provides counterfactual that makes it possible to estimate the impact of a program on participants.

One limitation is that the program will require resources that are not available at the medical office clinic. Currently, there is no existing reimbursement model to fund a diabetes prevention program in a medical office clinic (Katula et al., 2011). According to the medical director, the medical clinic will need resources such as physical space to

conduct the education and time for nurses to provide the education to the population. Another limitation is the use of a single-group pretest/posttest to evaluate knowledge. I cannot be certain that the observed change in behavior or knowledge between the pretest and the posttest are the result of the intervention from this Type 2 diabetes prevention program. Other confounding factors may have affected the participants or the program.

One recommendation for improvement for future evidence-based projects is the consideration of reimbursement policies when planning the implementation and evaluation of a Type 2 diabetes prevention program in a medical office clinic. According to Katula et al. (2011), the Center for Medicare and Medicaid Services (CMS) and National Diabetes Prevention Program (NDPP) are developing strategic plans that will enhance reimbursement policy for diabetes prevention services. It is imperative that I investigate the criteria and process of obtaining certification from NDPP for reimbursement during the planning of the program. Adequate funding will promote the implementation and evaluation of the program by the medical office clinic.

Implication for Evidence-based Practice

Nurses and certified nurse educators are trained to provide diabetes education to the population with diabetes or at risk for diabetes. In one study, one-third to one-half of the population with diabetes never had formal diabetes education (Maryniuk et al., 2013). This DNP project has the potential to lead to the integration of Type 2 diabetes prevention programs in a medical office clinic setting, thereby increasing the population at risk for Type 2 diabetes who has received formal diabetes education. Currently, there is no existing reimbursement model to fund a diabetes prevention program in a medical

office clinic (Katula, Blackwell, Rosenberger, & Goff, 2011). The successful implementation of the project may promote a reimbursement policy for diabetes prevention services in a medical office clinic. The project, when implemented, will influence nursing practice by making nurses more proactive in the prevention of Type 2 diabetes. Outcome data will need to be gathered in order to evaluate how nurses are using the materials to promote diabetes prevention among the population at risk for Type 2 diabetes. The DNP project will also influence social change by decreasing the number of African Americans with prediabetes who convert to Type 2 diabetes and reduce health disparity of diabetes among the population.

Evaluation

I presented the outcome of the project to the stakeholder. The medical director and nurses were present during the presentation. The medical director, nurses, and I discussed the feasibility of the project plans. The nurses at the medical office were motivated to learn more about the project, and willing to implement the program to improve patient outcomes. The clinic designated a champion to oversee and monitor the progress of the program. The medical director restated that lack of funding will influence the implementation of the project. Unfortunately, the medical director of the clinic had no set schedule on when the program will start.

Conclusion

Medical clinic health care professionals must be equipped with the materials and knowledge of current evidence-based practices in providing effective diabetes prevention education to patients at risk for type 2 diabetes. I have developed a program that can be

implemented by medical office clinic nurses to improve health outcome of patients with prediabetes. I will continue to follow-up with the medical office clinic medical director on the status of the program.

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Appendix A: Program Outline for Nurses

Title: Diabetes Prevention Program Outline for Medical Office Clinic Nurses

Description: The Type 2 diabetes prevention curriculum is based on the Road to Health Toolkit materials. Road to Health Toolkit educational material was developed by the National Diabetes Education Program in partnership with the National Institutes of Health and the Centers for Disease Control and Prevention (CDC, 2008).The program was designed to delay or prevent the development of diabetes in the African-American and Latino Communities with prediabetes (CDC, 2008).

Program Mission: To promote lifestyle modification behavior to prevent or delay Type 2 diabetes among African American population with prediabetes that visit a medical office clinic.

Program Goal: The goal was to decrease the number of African Americans patients that visit the clinic that will convert from prediabetes to Type 2 diabetes.

Target Audiences: The target audiences that will most benefit from this program include African Americans with prediabetes, family history of diabetes, or obese that receives care at a medical office clinic. The program will also benefit any individuals at risk for type 2 diabetes or working with the population at risk for Type 2 diabetes.

Task to be done before starting the sections: Self-study of Program Guide Binder materials, prior to starting the sections

Additional Helpful Website Resources: http://www.cdc.gov/diabetes/ndep/road-to-health.htm

Instructional Methods: Lecture, Video/DVD, Small Group Discussion, Independent

Study on Assigned Topic, and Presentation

Length: 2 hours a week for six Weeks (may vary base on needs or knowledge level)

Learning Objectives: Upon successful completion of this program the participant will be able to:

1. Describe Type 2 diabetes and the risk factors
2. Identify three evidence-based practice ideas on how to prevent Type 2 diabetes
3. Discuss the significance of preventing or delaying Type 2 diabetes
4. Explain the importance of controlling portion sizes, reading food labels, and increasing physical activity.

CLASS CONTENT PLAN:

Section One	Type 2 diabetes Preventable
Week 1	1. Overview 2. Pre-test 3. Preventing Type 2 diabetes 4. How diabetes affects the body **Road to health toolkit Activities** 5. Activity 1- Portion distortion 6. Activity 2- Food detective 1 7. Activity 3- Food detective 2 8. Evaluation
Week 2	1. Diabetes risk factors 2. How to prevent diabetes **Road to health toolkit Activities** 3. Activity 4- Community kitchen 4. Activity 5- Sneak in nutrition 5. Evaluation
Section Two	Making healthy food choices
Week 3	1. Pretest 2. Reading labels 3. Finding hidden fats **Road to health toolkit Activities** 4. Activity 6- Lunch exchange 5. Activity 7- Community water log 6. Evaluation

Week 4	1. Fast food "value" meals 2. Portion Sizes **Road to health toolkit Activities** 3. Activity 8-The "gross value" of a meal deal 4. Activity 9-Supper club 5. Evaluation
Section Three	Increase physical activity
Week 5	1. Pretest 2. Moving more 3. Barriers and excuses **Road to health toolkit Activities** 4. Activity 10- 10,000 steps club 5. Activity 11- A journey of two 6. Evaluation
Week 6	1. Summary 2. Rewards of a healthier lifestyle-setting goals 3. Post-test 4. Evaluation

Outcome Evaluation: Six month post implementation per chart review

Outcome Evaluation Goal: Reduces number of pre-diabetes that convert to Type 2 diabetes.

Appendix B: PreTest Section 1

Name

Date

1. Who is at risk for Type 2 diabetes
   a. Caucasians
   b. Asians
   c. African Americans
   d. Hispanics
   e. c and d
2. Type 2 diabetes can be prevented
   a. True
   b. False
3. What percentage of adults have Type 2 diabetes
   a. 90%-95%
   b. 35%-40%
   c. 25%-30%
   d. 55%-65%
4. Which is not the risk factor for Type 2 diabetes
   a. Obesity
   b. Physical inactivity
   c. Smoking
   d. Advance age
5. Pre-diabetes is associated with all except
   a. Risk for stroke and heart disease
   b. Glucose intolerance
   c. Risk of developing Type 2 diabetes
   d. Risk of developing Type 1 diabetes
6. What is your body weight and height today?

7. How many minutes of physical activities (exercise) do you do in a day?

Appendix B: Pretest Section 2

Name

Date

1. How many calories is in one large French fries
   a. 200 calories
   b. 320 calories
   c. 100calories
   d. Over 400 calories

2. All of the following are Starchy vegetables except:
   a. Green peas
   b. Broccoli
   c. Corn
   d. Butternut Squash

3. For most starches or grains, 1 oz or ½ cup contains 15g of carbohydrate
   a. True
   b. False

4. Men should have no more than 2 alcoholic drinks a day
   a. True
   b. False

5. In the Nutritional Facts Food label, saturated fat grams are listed under total fat
   a. True
   b. False

Appendix B: Pretest Section 3

Name

Date

1 Exercise will

a. Increase your blood sugar
b. Decrease your blood sugar
c. Neither decrease nor increase your blood sugar

2. Benefits of physical activity include all except:
    a. Increase energy for activities
    b. Relieve stress
    c. Promote adequate sleep
    d. Increase blood pressure

3. What is the recommended physical activity:

a. 15 minutes of moderate-to-vigorous intensity aerobic exercise at least 3 days a week
b. 40 minutes of moderate-to-vigorous intensity aerobic exercise at least 2 days a week
c. 30 minutes of moderate-to-vigorous intensity aerobic exercise at least 5 days a week
d. 60 minutes of moderate-to-vigorous intensity aerobic exercise at least 5 days a week

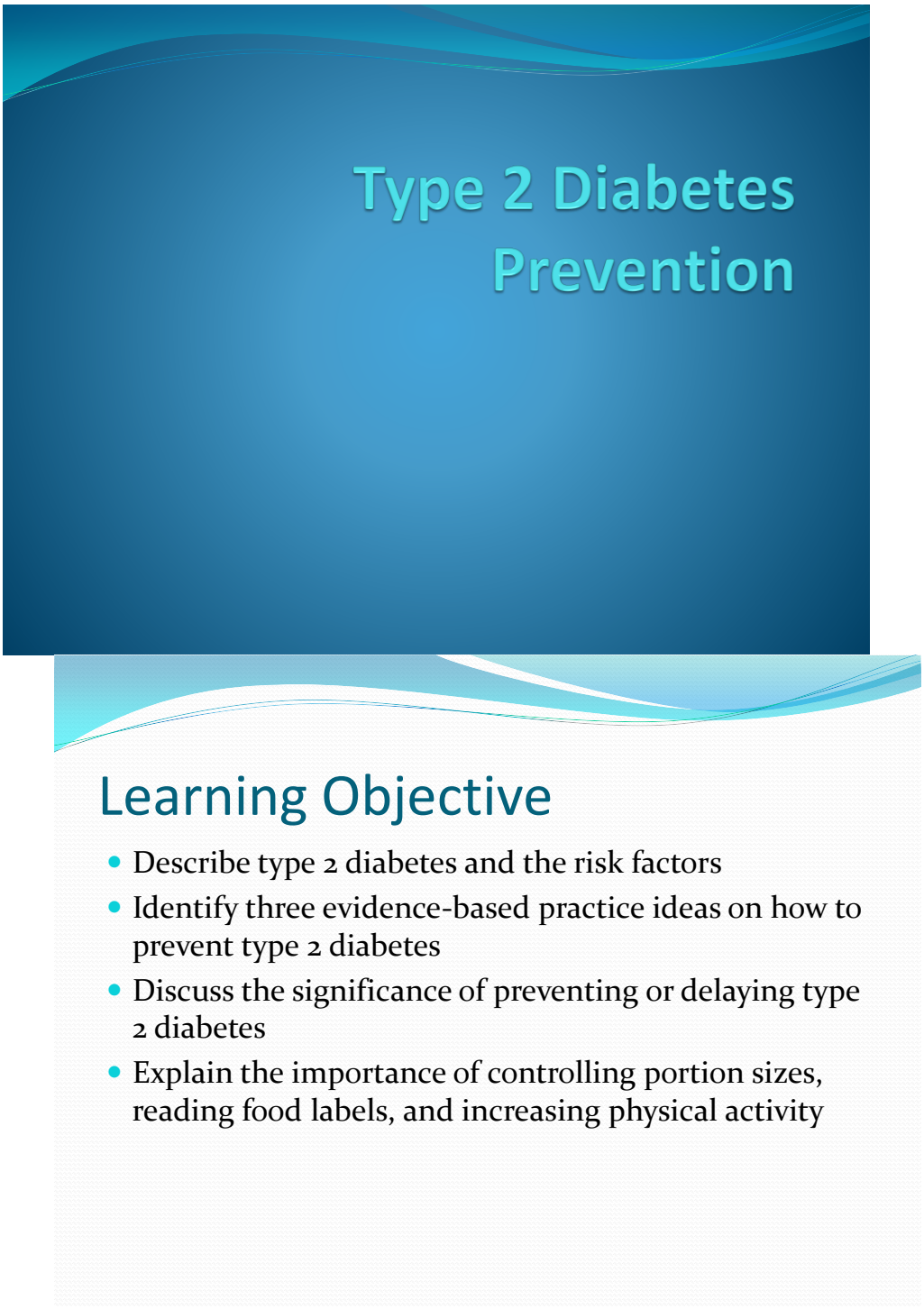
4. Moderate intensity exercise means working hard enough to talk but not sing.

a. True
b. False

5. Stretching exercise will help keep joints flexible, prevent stiffness, and prevent injury during physical activity.

a. True
b. False

Appendix C: Type 2 Diabetes Educational Module



Program Overview

- Welcome and Introduction
- Will meet 2 hours a week for over 6 weeks
- Goal: lose 7% of body weight through healthy eating and 150 minutes a week of moderate physical activity
- Decrease our chances of getting type 2 diabetes by 50%

Is diabetes a Problem?

- More people living with Diabetes than ever before
- In the United States, in 2012:
  - 21.0 million with diagnosed diabetes
  - 8.1 million with undiagnosed diabetes
  - 1.7 million newly diagnosed diabetes
  - $245 billion total cost of diabetes
- Most impacted are Native Americans, Non-Hispanic blacks, and Hispanics

Who is at Risk for Type 2 Diabetes?

- All individual with pre-diabetes (high blood sugar or HgA1C but not high enough to be diagnosed)
- Individuals with family history of diabetes
- Obese individuals

Section 1: Diabetes is Preventable

- Week 1
  - Pre-test
  - Preventing type 2 diabetes
  - How diabetes affects the body
    - Road-to-health toolkit Activities
  - Activity 1- Portion distortion
  - Activity 2- Food detective 1
  - Activity 3- Food detective 2
  - Evaluation

Road-to-health toolkit Activities

- Week 2
- Diabetes risk factors
- How to prevent diabetes
  - Road-to-health toolkit Activities
- Activity 4- Community kitchen
- Activity 5- Sneak in nutrition
- Evaluation

Section 2: Food Choices

- Week 3
- Pre-test
- Reading labels
- Finding hidden fats
  - Road-to-health toolkit Activities
- Activity 6- Lunch exchange
- Activity 7- Community water log
- Evaluation

Section 2: Food Choices

- Week 4
- Fast food "value" meals
- Portion Sizes
  - Road-to-health toolkit Activities
- Activity 8-The "gross value" of a meal deal
- Activity 9-Supper club
- Evaluation

Section 3: Increase Physical Activity

- Week 5
- Pre-test
- Moving more
- Barriers and excuses
  - Road-to-health toolkit Activities
- Activity 10- 10,000 steps club
- Activity 11- A journey of two
- Evaluation

Setting goals and rewards

- Summary
- Rewards of a healthier lifestyle-setting goals
- Post-test
- Evaluation

QUESTIONS

Appendix D: Posttest

Name_____Date

1. All of the following are Starchy vegetables except
   a. Green peas
   b. Broccoli
   c. Corn
   d. Butternut Squash
2. Who is at risk for type 2 diabetes?
   a. Caucasians
   b. Asians
   c. African Americans
   d. Hispanics
   e. c and d
3. In the Nutritional Facts Food label, saturated fat grams are listed under total fat
   a. True
   b. False
4. Exercise will
   a. Increase your blood sugar
   b. Decrease your blood sugar
   c. Neither decrease nor increase your blood sugar
5. Which is not the risk factor for type 2 diabetes?
   a. Obesity
   b. Physical inactivity
   c. Smoking
   d. Advance age
6. Men should have no more than 2 alcoholic drinks a day
   a. True
   b. False
7. Benefits of physical activity include all except
   a. Increase energy for activities
   b. Relieve stress
   c. Promote adequate sleep
   d. Increase blood pressure
8. What percentage of adults has type 2 Diabetes?
   a. 90%-95%
   b. 35%-40%
   c. 25%-30%
   d. 55%-65%

9. What is the recommended physical activity?
    a. 15 minutes of moderate-to-vigorous intensity aerobic exercise at least 3 days a week
    b. 40 minutes of moderate-to-vigorous intensity aerobic exercise at least 2 days a week
    c. 30 minutes of moderate-to-vigorous intensity aerobic exercise at least 5 days a week
    d. 60 minutes of moderate-to-vigorous intensity aerobic exercise at least 5 days a week
10. Moderate intensity exercise means working hard enough to talk but not sing.
    a. True
    b. False
11. Stretching exercise will help keep joints flexible, prevent stiffness, and prevent injury during physical activity.
    a. True
    b. False
12. Pre-diabetes is associated with all except
    a. Risk for stroke and heart disease
    b. Glucose intolerance
    c. Risk of developing type 2 diabetes
    d. Risk of developing type 1 diabetes
13. Type 2 diabetes can be prevented
    a. True
    b. False
14. How many calories is in one large French fries
    a. 200 calories
    b. 320 calories
    c. 100calories
    d. Over 400 calories
15. For most starches or grains, 1 oz or ½ cup contains 15g of carbohydrate
    a. True
    b. False

16. What is your body weight and height today?

17. How many minutes of physical activities (exercise) do you do in a day?

Appendix E: Evaluation Form

1= Unsatisfactory, 2= Needs improvement, 3= Satisfactory, 4= Above Average, 5= Outstanding

I learned something new today	1	2	3	4	5
Today's topic will help me with my fight against type 2 diabetes	1	2	3	4	5
I can apply what I learned today into practice	1	2	3	4	5
Today's speaker used the language that I can understand	1	2	3	4	5
Today's speaker responds to feedback in class in a constructive manner	1	2	3	4	5
The room temperature was adequate for learning	1	2	3	4	5
Cultural sensitive issues were handled appropriately in today's class	1	2	3	4	5
Today's activities contributed to my knowledge of the material	1	2	3	4	5
I was actively engaged and involved in today's activities	1	2	3	4	5

If I have to change anything today, what will it be?
What was the best part of today?
Comments and future ideas for improvement

Appendix F: Walden IRB Approval Letter

Dear Ms. Ezirim,

This email is to serve as your notification that Walden University has both approved your doctoral project proposal and confirmed that the project meets the university's ethical standards. As such, you are approved by Walden University to conduct the project.

Please contact the Office of Student Research Administration at dnp@waldenu.edu if you have any questions.

Congratulations!

Libby Munson

Research Ethics Support Specialist, Office of Research Ethics and Compliance

Leilani Endicott

IRB Chair, Walden University

Information about the Walden University Institutional Review Board, including instructions for application, may be found at this link:
http://academicguides.waldenu.edu/researchcenter/orec

Appendix F: Curriculum Vitae

JOVITA C. EZIRIM-SALAMIALOFOJE
ezirimj@gmail.com

EDUCATION

2013 – Present	Doctorate of Nursing Practice Student, Walden University, Baltimore, MD
2013-2014	Post Masters Certificate, Psychiatric Mental Health Nurse Practitioner, California State University, Long Beach, CA
2007- 2010	Masters of Science/ Nurse Educator -California State University, Dominguez Hill, Carson, CA
1997-2001	Bachelor of Science in Nursing - Louisiana State University, New Orleans, LA
1992-1993	License Vocational Nurse -Casa Loma College, Los Angeles, CA

TEACHING EXPERIENCE

2010 -Present	Psychiatric Nursing, Undergraduate level
2011- Present	Geriatric Nursing, Undergraduate level
2010- Present	Medical and surgical nursing - Clinical Instructor

ACADEMIC EXPERIENCE

11/2011- Present	Full-time Faculty, National University, Los Angeles Campus
01/2011- Present-	Adjunct Faculty, American University of Health Sciences, Signal Hills, CA
11/2014- Present	Adjunct Faculty, American Career College, Los Angeles, CA
06/2010-06/2012	Adjunct Faculty, American Career College, Los Angeles, CA

PROFESSIONAL EXPERIENCE

2014- Present:	Nurse Practitioner, Part-time, Dr. Ibraheem, Long Beach CA.
07/2008 -11/2011	Registered Nurse, Full-time Psychiatric Unit, White Memorial Medical Center, Los Angeles, CA.
06/2007 – 05/2014	Registered Nurses, Los Angeles County, USC Medical Center Los Angeles, CA.
02/2005-02/2007	Registered Nurse, Full-time Critical Care Unit, West Houston Medical Center, Houston, TX.
08/2002-02/2005	Registered Nurse Critical Care Unit, Spring Branch Medical Center, Houston TX.
08/2001-08/2002	Registered Nurse Critical Care Unit, Desert Spring Medical Center, Las Vegas, Nevada
11/1998-05/2001	License Vocational Nurse Geriatric Unit, East Jefferson General Hospital, Metairie, LA.
03/1994-06/1997	License Vocational Nurse Sub-acute Unit, Bay Harbor Medical center, Torrance, CA.

ACADEMIC HONORS, AWARDS AND RECOGNITION

2012 –Present	National University Honor Society
2000 and 2001	Dean's list award, Louisiana State University
2001	Academic Excellent Award, Louisiana State University

PROFESSIONAL MEMBERSHIPS

2012-Present	American Psychiatric Nurses Association
2012-Present	National Alliance on Mental Illness (NAMI)
2011- Present	National League of Nursing
2010- 2013	Association for Career and Technical Education

SCHOLARSHIP

2013	Poster Presentation: "Mentoring New Faculty"
2013	Poster Presentation: "Promoting Hygiene and Health eating Among Patients with Serious Mental Illness"

SERVICES

University:

2012-Present	Campus course coordinator for psychiatric nursing
2012-Present	Faculty Search sub-committee-Los Angeles Campus
2013- Present	Member of SHHS Nursing Student Experience Committee
2013	Member of the Senate Faculty Rights and Welfare Sub-Committee

Community Volunteer:

2012, 2013, 2014	Midnight Mission feed the homeless program
2013 and 2014	Care Harbor Los Angeles
2014	Secretary, Umuada Igbo USA
2014	Assistant Secretary, Mbano Association of Southern California

PROFESSIONAL LICENSES AND CERTIFICATIONS

- California State Registered Nurse License
- Psychiatric Mental Health Nurse Practitioner
- American Nurses Credentialing Center
- Basic Life Support
- Management of Assaultive Behavior