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An Educational Initiative to Promote Self-Care Practices in Hispanic Adults With Type 2 Diabetes

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AN EDUCATIONAL INITIATIVE TO PROMOTE SELF-CARE PRACTICES

IN HISPANIC ADULTS WITH TYPE 2 DIABETES

Presented in Partial Fulfillment of the
Requirements for the Degree of
Doctor of Nursing Practice

Nova Southeastern University
Health Professions Division
College of Nursing

Geralde Bridges, MSN, RN
2019

NOVA SOUTHEASTERN UNIVERSITY

HEALTH PROFESSIONS DIVISION

COLLEGE OF NURSING

This project, written by Geralde Bridges under direction of Dr. Linda A. Evans, Project Chair, and approved by members of the project committee, has been presented and accepted in partial fulfillment of requirements for the degree of

DOCTOR OF NURSING PRACTICE

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Abstract

Background: Type 2 diabetes (T2D) has become pandemic and is predicted to increase among Americans. Hispanic Americans are at high risk for the disease. T2D is a causative factor in many chronic illnesses among adults in the United States. A major contributing factor to poor adherence to diabetes treatment plans is knowledge deficit related to the disease, its management, and its complications. Therefore, education in self-care practices is critical in diabetes management.

Purpose: The purpose of this evidence-based quality improvement project (QIP) was to promote self-care practices among T2D Hispanic patients through a diabetes self-management education (DSME) program. The project had five objectives: (a) to develop and (b) implement the DMSE; and to evaluate patients' (c) blood glucose levels, (d) knowledge and practice of self-care management, and (e) self-efficacy in self-care practices before and after the educational initiative.

Theoretical Framework: Pender's Health Promotion Model was used for this evidence-based practice project.

Methods: A quantitative exploratory design was used for this QIP. An educational program was developed from the American Diabetes Association care standards for diabetic needs. Twenty T2D patients at a South Florida urban medical center were recruited and provided with individualized educational sessions. With paired-samples t tests, their blood glucose levels, knowledge and practice of self-care, and self-confidence in their self-care were measured preintervention and 2 to 3 months postintervention with individual glucose measurements, the Self-Care Inventory-Revised Questionnaire, and the Self-Efficacy for Diabetes Questionnaire.

Results: The results showed that participants' blood glucose levels decreased significantly from pre- to postintervention ($p < .000$). Participants' knowledge of and adherence to diabetes self-care increased significantly ($p < .000$). Participants' self-efficacy in their ability to practice self-care also increased significantly ($p < .000$).

Conclusion: The educational initiative was highly effective in lowering T2D participants' HgA1c levels and increasing their knowledge of, adherence to, and confidence in their self-care management practices. Future research should include replication of this project with larger samples and in other geographic locations. T2D management requires constant education, and similar educational initiatives should be implemented in other medical facilities so that T2D patients may improve their self-management and quality of life.

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Table of Contents

List of Tables

List of Figures

Chapter 1

Nature of Project and Problem Identification

Type 2 diabetes (T2D) is a serious health problem that can result in multiple chronic comorbidities. Management requires patients to maintain strict self-care behaviors in order to manage the disease effectively (Hu, 2016). A major component of the medical treatment of T2D is self-care management practices. Active involvement of diabetics in their care requires commitment to understanding the disease and treatment plan. Diabetic patients with good self-care behaviors can optimize glycemic control and their health outcomes can improve when they adhere to their treatment plans. However, patients with T2D do not always achieve good glycemic control, resulting in increased risk of developing diabetes-associated health complications due to poor adherence to treatment plan (Hu, 2016).

Good communication and rapport between patients and providers can drastically decrease the risks of nonadherence to the diabetes treatment plan (Albuquerquea, Correiab, & Ferreiraa, 2017). The more knowledge patients have about T2D, the better they can manage their disease; therefore, awareness about diabetes self-care practices can lead to better control of the disease (Manobharathi, Kalyani, Felix, & Arulmani, 2017). In addition, increased self-efficacy and motivation, ability to afford diabetes medications, and access to transportation can increase adherence to disease management, appropriate self-care practices, and better quality of life (Manobharathi et al., 2017).

Fifty percent to 80% of diabetic patients have limited knowledge about their disease. Less than half of these patients achieve optimal glycemic control (Albuquerquea et al., 2017). Therefore, an educational initiative that focuses on achieving glycemic control must enhance patients' knowledge, build their confidence, and increase their motivation.

Historically, T2D was originally an illness of Western society, with an adult late onset. However, a recent study found an increasing occurrence in poor populations as well (Hu, 2016). The World Health Organization (WHO, 2014) estimated that T2D affects more than 346 million adults globally and predicted that this figure will increase to 552 million by 2030, with 90% having T2D (Hu, 2016; Jeeva & Babu, 2017). In a study to assess the risk factors of chronic noncommunicable diseases, Jeeva and Babu (2017) reported that rural populations have a higher prevalence for T2D (5.8%) than urban populations (4.6%).

T2D is defined as a chronic disorder in which the body fails to secrete enough insulin or the beta cells dysfunction in the pathophysiology of the disease, resulting in damage to both micro- and macrovascular tissues (American Diabetes Association [ADA], 2016a). Hyperglycemia due to poor disease management can increase diabetes-related complications, including cardiovascular disease, renal disease, and cerebrovascular disease (ADA, 2016a; Hu, 2016; WHO, 2014). T2D has negatively impacted life expectancy worldwide. People diagnosed with T2D at age 50 will die 6 years earlier than those who do not have the illness (Forouhi & Wareham, 2014). Hence, effective management of the disease is essential to reduce morbidity and premature death related to T2D as well as to improve healthcare costs and quality of life.

In the Unites States of America, the overall estimated cost of T2D in 2017 was "327 billion dollars, which included 237 billion dollars in direct medical costs and 90 billion dollars in decreased productivity" (American Diabetes Association [ADA], 2018, p. 1). The Florida Diabetes Report (2017) indicated that "more than 20% of the healthcare budget in Florida is spent on patients with a diagnosis of T2D" (p. 22). The total indirect cost of diabetes was approximately $57.1 billion, of which $27.5 billion was for premature mortality, $16.2 billion for permanent disability, and $13.3 billion for temporary disability (Florida Diabetes Report, 2017).

The total direct cost is estimated between $45 and $66 billion due to treatment complications related to T2D (Florida Diabetes Report, 2017). Patients with T2D have medical expenditures approximately 2.3 times higher than nondiabetics (ADA, 2018; Florida Diabetes Report, 2017; Zhuo et al., 2014). In partial accounting for these costs, T2D self-management is very complicated and requires continuous medical care to decrease the progression of the malady (Rwegerera, 2014).

Medications and lifestyle changes can be effective when patients adhere to self-care management practices. Adherence to diabetes treatment plans is important to maintain optimal glycemic control. However, only 50% of patients suffering from diabetes adhere to their management plans because of the increased complexity of therapies and difficulties of adopting healthy lifestyle habits (World Health Organization [WHO], 2013). Alternatively, a treatment plan that requires fewer changes in lifestyle patterns, such as decreasing the number of pills, is more likely to have a positive health outcome (WHO, 2013).

Psychological distress, including depression, anxiety, and stress, can affect the ability of diabetic patients to follow their therapy plan, leaving them feeling overwhelmed, frustrated, and discouraged (Harvey, 2015). Hopelessness and negative feelings can decrease patients' drive to care for themselves and may also influence their ability to follow complex instructions (Harvey, 2015). Other psychological problems that can affect adherence to self-care management practices include eating disorders, poor relationship between the provider and patients, unpleasantness of treatment, fear of hypoglycemia, and poor ability to care for oneself (Harvey, 2015). In addition, poor socioeconomic status, illiteracy, and forgetfulness have been related to poor treatment adherence (Gonzalez-Zacarias, Mavarez-Martinez, Arias-Morales, Stoicea, & Rogers, 2016).

Patients with knowledge deficit of T2D are more prone to be nonadherent regarding their follow-up appointments, which may result in challenges related to glycemic control (Borgsteede et al., 2013; Gonzalez, Tanenbaum, & Commissariat, 2016). Knowledge deficit may contribute to nonadherence; other factors that may influence nonadherence to follow-up appointments in diabetic adults include inaccessibility to dependable transportation, lack of ability to take off time from work, family responsibilities, lack of self-efficacy, and lack of motivation (Borgsteede et al., 2013). Patients are more motivated if they have the ability to manage their own care (García-Pérez, Álvarez, Dilla, Gil-Guillén, & Orozco-Beltrán et al., 2013; Pender, Murdaugh, & Parsons, 2015).

Self-efficacy is one cognitive variable that can impact self-care practices in diabetic individuals (Pender et al., 2015). Reisi et al. (2016) found that self-efficacy and

its interaction with optimistic outcome expectations were significantly related to diabetes self-care management practices, adherence, and glycemic control in diabetic individuals. The increased and escalating rate of T2D and its complications indicate an urgent need for diabetic patients to comply with their self-care practices to attain treatment goals and slow the progression of the disease, in addition to improving patents' quality of life (ADA, 2016a; Centers for Disease Control and Prevention [CDC], 2017).

Jeeva and Babu (2017) found that 78.4% of patients with deficiency in self-care knowledge were nonadherent with their treatment plan, and patients with adequate knowledge of the disease were associated with good glycemic control. A review of diabetes self-management education standards found that a fourfold increase in diabetic complications for diabetic individuals without formal education regarding self-care practices (Florida Diabetes Report, 2017). Importantly, the ADA recommends at least an annual assessment of self-care management skills and knowledge for patients with T2D (Florida Diabetes Report, 2017). Given this recommendation, an educational initiative to improve the self-care management practices of patients with T2D in one urban medical center will be implemented.

Problem Statement

In Florida, the latest estimates indicate that over 2.4 million people have diabetes (Florida Diabetes Report, 2017). In Miami, one in three adults will be diabetic by 2050 if existing trends continue (Florida Diabetes Report, 2017). At one medical center in Miami, it is reported that four out of five patients are diagnosed with T2D. Of those patients, it is estimated that 50% of these individuals do not take their medicines on time as ordered, follow a healthy diet, participate in recommended physical exercise activity,

or participate in follow-up visits with their healthcare provider (Glades Medical Center Annual Report, 2016).

Purpose Statement

The purpose of this evidence-based quality improvement project (QIP) was to promote self-care practices among patients diagnosed with T2D through a diabetes self-management education (DSME) program.

Project Objectives

The following were the objectives for the potential capstone project:

Objective 1: To develop a self-care management individualized educational program for Hispanic diabetic patients in one urban medical center.

Objective 2: To implement a self-care management individualized educational program for patients with T2D at this medical center.

Objective 3: To evaluate patients' hemoglobin A1c levels before and after the individualized educational initiative.

Objective 4: To measure the impact of an individualized educational initiative on patients' knowledge of and adherence to self-care management practices.

Objective 5: To evaluate the impact of the individualized educational initiative on patients' self-efficacy regarding self-care practices.

Theoretical Foundation: Pender's Framework

As this evidence-based QIP focused on diabetic patients with self-care management deficits, a theoretical framework that addresses patients' behavior and its impact on health outcomes was appropriate. Patients can enhance their health by engaging in health promotion activities, a process that necessitates changes in their

behaviors. Pender's Health Promotion Model (HPM; Pender et al., 2015) was the theoretical framework that guided this project. The HPM asserts that particular characteristics and experiences can affect individuals' behavior cognitions (Pender et al., 2015). These behavior cognitions determine patients' behavior outcomes. This model assumes that people seek to control their own health behaviors, resulting in improved outcomes (Pender et al., 2015).

Alternatively, competency can be defined as one's ability of acting out a health-promoting behavior successfully. Pender et al. (2015) recognized that each individual has a distinctive set of specific characteristics and experiences, which are subject to modification through effective education. Nease, Tomala, Follis, and Bauman (2015) found that patients who engaged in educational programs achieved improvement in their hemoglobin (Hg) A1c levels compared to those who did not engage in educational sessions. Diabetic patients who participate in their own management minimize their risk of secondary complications of T2D (Nease et al., 2015). Shrivastava, Shrivastava, and Ramasamy (2013) proposed that ongoing education is critical.

Pender's HPM was introduced in 1982 and revised in 1996 (Pender et al., 2015). The HPM is a descriptive model of health conduct directed toward accomplishment of positive health outcomes (Becker & Janz, 2015). The model presupposes that the greater a person's self-efficacy or perceived competence for a behavior, the stronger the person's intention will be to carry out the behavior (Becker & Janz, 2015). The HPM model presumes the health-related behaviors of patients with regard to adherence to their treatment plan. The theory is based on the significance patients place on the objective,

assuming it is health. In turn, the objective will create an environment for promoting adherence to the patients' treatment plans (Becker & Janz, 2015).

The application of the HPM served as a guide for this project to decrease the risks of T2D illness through the overlapping domains of disease prevention and health education and protection (Kumar & Preetha, 2013). Education is crucial to the improved compliance to self-care practices of T2D (Shrivastava et al., 2013). Patients adhere to their management therapy when they better understand the disease (Pender et al., 2015). Figure 1 shows the HPM.

An education program that includes both behavioral and psychological approaches is effective in increasing patients' adherence to their care plans (American Diabetes Association [ADA], 2016a; CDC, 2017). Teaching patients about health-promoting strategies helps them in precluding disease-related complications, enhancing their quality of life, improving their compliance, and decreasing their expenditures (Pender et al., 2015). In this project, the use of Pender's model as an educational guide produced a positive impact on patients in their accomplishing health-promoting behaviors.

Concepts of the Framework

Pender's HPM was used for the long-term management of patients with T2D (Lari, Tahmasebi, & Noroozi, 2018). Poor compliance to a prescribed treatment plan can result in life-threatening consequences for diabetic patients (Becker & Janz, 2015). Patients' perceived self-efficacy and competence play major roles in their commitment to change their behaviors (Becker & Janz, 2015). HPM guided the provider in this project to navigate the complicated biopsychosocial practices for promotion of patient engagement

in behavioral modification to improve their health (Becker & Janz, 2015). The goal of individualized education was to have a positive impact on patients in adhering to their diabetic care plan.
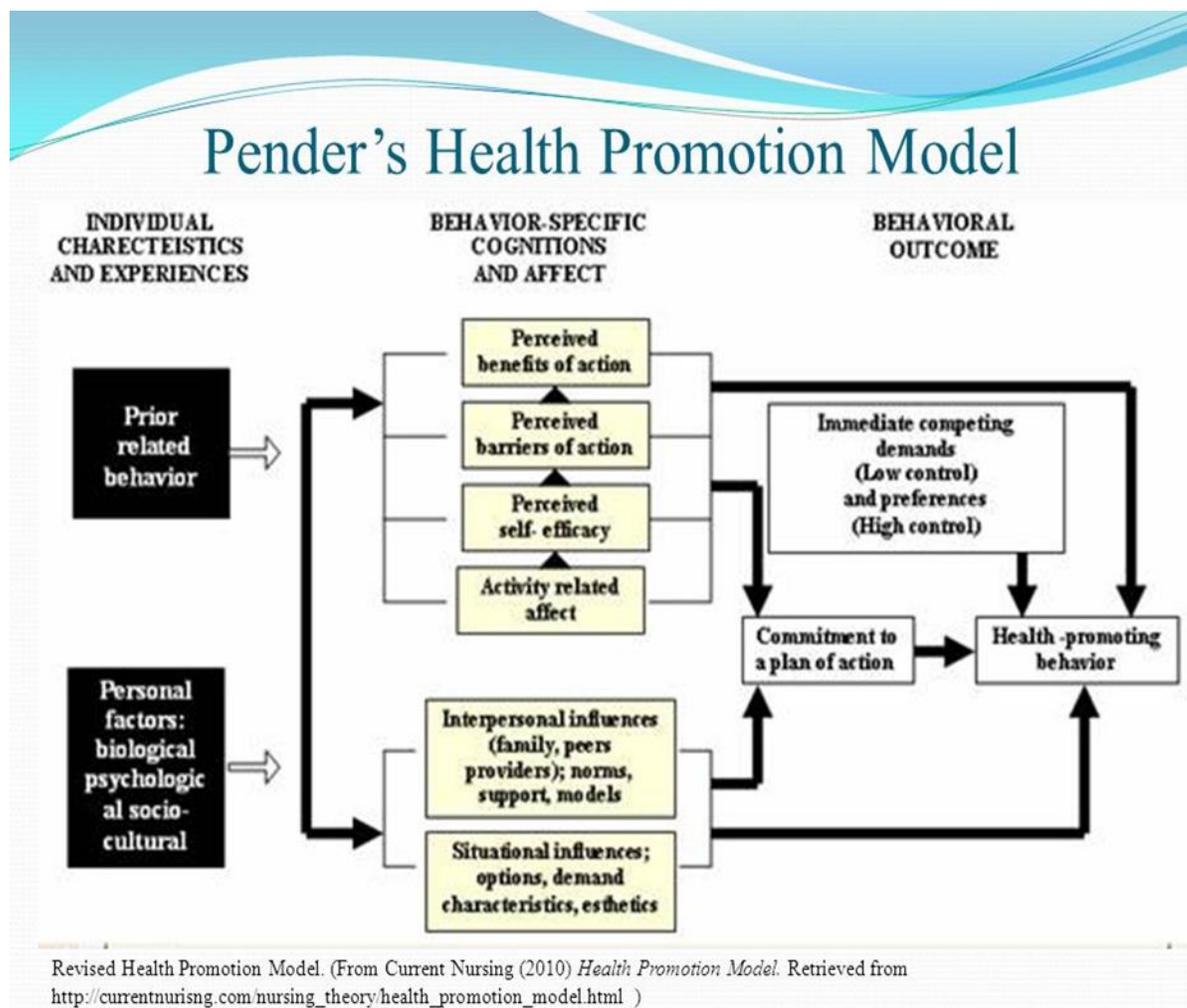
Figure 1. Pender's Health Promotion Model (Pender et al., 2015). Reprinted with permission.

Structure. Pender's HPM emphasizes eight beliefs that served as a guide to evaluate the knowledge of patients about T2D and healthy lifestyle alternatives:

- Self-efficacy is the person's belief in his or her ability to execute health-promoting actions (Pender et al., 2015).

- Perceived benefits of actions include the perception of the beneficial outcomes of undertaking health encouraging lifestyle alternatives (Pender et al., 2015).

- Affect-related actions are personal feelings that patients with T2D experience before, during, and following particular health-promoting manners (Pender et al., 2015).

- Interpersonal influences can increase or decrease patients' commitment to promoting healthy behaviors (Pender et al., 2015).

- Situational influences are the beliefs and thoughts that encourage patients to take part in health-promoting actions (Pender et al., 2015).

- Commitment assists patients with T2D in following through with specific health- encouraging behaviors effectively (Pender et al., 2015).

- Patients' dedication and actions increase when encouraging emotions are related to a behavior (Pender et al., 2015).

- Preferences and instant challengers are other actions that intrude into patients' perception before the calculated incidence of intended health encouraging behaviors (Pender et al., 2015).

Process. The processes of Pender's HPM were beneficial to the objectives targeting this medical problem. Patients with T2D make drastic improvement when they contribute to their own care (Steenkamp, Alexanian, & McDonnell, 2013). Thus, the health promotion model guided an intervention for individuals to support their higher levels of well-being while identifying background elements that influenced health-promoting behaviors.

Regardless of continuing improvement in treatment methods, the successful management of T2D primarily depends on patients' compliance with the recommended management plan (Steenkamp et al., 2013). Fernandez and Naidu (2017) found that healthcare professionals must fulfill a leading role in diabetes treatment and education to promote patients' participation in their self-care management. Health-encouraging performances are related to patients' self-discipline and self-efficacy that can improve their quality of life (Steenkamp et al., 2013).

Outcomes. The self-care management of T2D involves a lifetime dedication and is a key determinant of health outcomes for patients diagnosed with T2D. Pender's model has altered the focus of the role of the healthcare provider from simply preventing illness to promoting health (Pender et al., 2015). The utilization of the model in this project served as a guide in expanding the role of the healthcare provider to promote patients' good health for better quality of life (Pender et al., 2015; Syed, Gerber, & Sharp, 2013).

Patients are likely to commit to modifications in behaviors if they anticipate positive outcomes that they personally value (Pender et al., 2015). Thus, the healthcare provider can inspire them to make the needed adjustments to promote healthy outcomes. Not only does Pender's model expand the role of the provider by focusing on self-efficacy, but the model also guides the provider to become an agent of change to improve diabetic patients' health (Pender et al., 2015; Syed et al., 2013).

Effective self-care practices are required to prevent or delay the long-term complications associated with T2D. Acquisition of diabetes education increases patients' knowledge of self-care behaviors, leading to higher quality of life. Provision of valuable education on diabetes self-care practices empowers patients, as defined in Pender's

Health Promotion Model, to take control of the disease and make changes in many aspects of their lives (Pender et al., 2015). Adoption of a healthy diet, engagement in daily physical activities, and taking medicines as ordered are important aspects in the improvement of self-care practices of diabetic patients. Most importantly, the provision of an educational setting in which diabetic patients can learn about the disease promotes their better health outcomes (Tol, Alhani, Shojaeazadeh, Sharifirad, & Moazam, 2015).

Application of Theory

Pender et al. (2015) defined the role of the provider as working in partnership with patients towards a goal of reducing poor health outcomes. This definition is particularly applicable to long-term management of T2D, in which the provider has to encourage patients to make long-term changes in their daily lives to enhance their health and self-care. The most important underpinning of Pender's model is the hypothesis that people value progress while looking for enhancement in their health condition.

Self-assurance is a significant part of the model, and it is the belief in one's own ability to succeed (Pender et al., 2015). Diabetic patients need to believe that positive change is possible. By assuming that diabetic patients are able to change, the provider can inspire them to make the changes that they need to support quality and health outcomes (Pender et al., 2015). Pender's HPM provided the theoretical bases for this QIP and served as a guide to enhance their self-care practices and healthcare outcomes.

The aptitude of patients to self-control the disease and live healthier lifestyles decreases the risk of T2D-associated complications, such as cardiac disease, hyperglycemia, hypoglycemia, nerve damage, kidney disease, and blindness (ADA, 2016a). Pender's framework was used to guide an educational initiative to assist patients

in changing unhealthy behaviors to healthy ones for improvement of their health. Educating patients with T2D is important (American Diabetes Association [ADA], 2016b; Powers et al., 2015), and the educational initiative provided the foundation for patients to learn the skills necessary to manage their illness (Powers et al., 2015).

In this project, the interaction with patients provided opportunities for health clinicians to evaluate their patients' knowledge about medication regimen and assess their determination and drive regarding adherence to self-care management practices. The integration of the HPM in self-care practices empowered individuals with evidence-based knowledge to achieve success in adherence to their treatment plans. In addition, the HPM supported a rapid assessment of behavioral factors which influenced compliance in diabetes treatment management. Further, the HPM facilitated identification of patients' strengths and weaknesses to better tailor their treatment plans for increased adherence.

Diabetes self-care management practices are a challenge for diabetic patients (American Diabetes Association [ADA], 2017). Empowerment plays a vital role in helping these individual to practice self-care successfully. Pender's HPM was selected to help diabetic patients change their unhealthy lifestyle habits to healthy ones to improve their overall health.

Significance to Practice and Healthcare Outcomes

Poor self-management practices can increase nonadherence to treatment recommendations (ADA, 2016a). Pender's HPM was used to guide treatment. The evidence-based QIP focused on patients with knowledge deficits related to diabetes self-management and provided them with an educational initiative to promote adherence to self-care practices.

Nursing Practice

The purpose of Pender's HPM was to help practitioners to comprehend the main elements of health practices that can encourage healthy lifestyle choices (Pender et al., 2015). Practicing healthy behaviors is one approach to maintenance of health. Health-promoting behaviors consist of activities that enable patients to monitor their care, and these activities are useful to promote self-care practices. The scope of the HPM focuses on identifying health-promoting behaviors that can be applied effortlessly into day-to-day nursing practice (Pender et al., 2015).

The goals of nursing care must focus on empowering education to assist patients in acquiring a healthy life. Education on T2D can be effective if it emphasizes behavior in combination with knowledge. Therefore, the HPM is a vital part of empowering the discipline of nursing to influence patients to increase lifestyle changes. Such changes can promote a lifetime of adherence to their diabetes treatment plans.

Healthcare Outcomes

Adherence to therapy is a primary element of treatment success. Improvement of adherence to prescribed medications and lifestyle changes has the potential to decrease significantly the unhealthy outcomes related to nonadherence (García-Pérez et al., 2013). Reasons for poor compliance to T2D self-care practices are multifaceted. They may include lack of knowledge related to the disease management, poor lifestyle choices, psychological distress, costs, complexity of treatment (García-Pérez et al., 2013), and lack of motivation. However, several approaches can be used to increase adherence to T2D management. These approaches may include decreasing the complexity of treatment with fixed-dose medicines, prescribing medications with fewer side effects, and using

educational initiatives to motivate patients to engage in health-promoting activities (García-Pérez et al., 2013).

Self-efficacy is a significant predictor of T2D self-care practices and outcomes. Thus, diabetics with increased self-confidence in their ability to choose healthy behaviors can increase their adherence to practice personal care (Pender et al., 2015). The HPM incorporates the concept of perceived self-efficacy to elucidate and encourage health-promoting behaviors; for instance, diabetic patients will adhere to their treatment plan if they believe they can successfully fulfill the care plan (García-Pérez et al., 2013; Pender et al., 2015).

Patients who receive diabetes education have better diabetes self-care management practices than patients who do not receive diabetes education (Reisi et al., 2016). However, these patients may need more than knowledge to empower them with the self-care behaviors they need for their everyday lives (Reisi et al., 2016). Therefore, including patients' self-efficacy in the educational initiative will have a positive outcome on patients' compliance to self-care practices and health outcomes.

Healthcare Delivery

The outcomes of this evidence-based QIP will impact the healthcare delivery by assisting diabetics to increase compliance to their management plan. The long-term life expectancies of patients with T2D increase with good disease management (Hale, Capra, & Bauer, 2015). T2D requires continuing self-care management education and continuous involvement of patients in the treatment plan and medical care (Hale et al., 2015). A multidisciplinary approach based on the HPM can positively impact the healthcare delivery. The HPM supports behavior changes, which plays a vitally important

role in T2D education (Hale et al., 2015). When applied effectively, Pender's theory will increase compliance to treatment plan resulting in enhanced healthcare delivery and outcomes (Hale et al., 2015; Patel et al., 2016).

Healthcare Policy

Health policies can be defined as strategies that are followed through to achieve particular healthcare goals within a society (Beland & Katapally, 2018). When fully implemented, health policies are important for the prevention or treatment of illnesses. The Protection and Affordable Care Act is a watershed in the public healthcare policy of America (Obama, 2016). The purpose of this act is to provide patients with access to medical insurance coverage, healthcare providers, and evidence-based preventive care at low or no cost (Obama, 2016). As a result, patients benefit from earlier detection and treatment of the disease prior to its symptoms becoming of crisis proportions (Obama, 2016).

Early disease detection and management improve healthcare outcomes and decrease the healthcare costs for both patients and the public as a whole. Internationally, the quality of care is a focused indicator in health policy (ADA, 2016a). In addition, the health outcomes of patients are widely recognized as a direct indicator of that healthcare quality (ADA, 2016a).

The objectives of the Healthy People 2020 initiative mirror the objectives of the Health Promotion Model (Pender et al., 2015) related to the promotion of healthy behaviors to improve the health of communities. "Healthy People 2020 emphasize initiatives to advance health related quality of life for all individuals through the promotion of positive health behaviors across the life span and health development"

(Heese et al., 2014, p. 1). The U.S. Department of Health and Human Services (n. d.) indicated that Healthy People 2020 stresses that patients' wellbeing is a relative state where they maximize their physical, psychological, and social functioning in the context of supportive environments to live full, satisfying, and productive lives. Healthcare providers involved in healthcare policy must initiate educational programs for patients to improve their wellbeing and practices that are driven by the best available evidence and knowledge.

Summary

T2D is a common, morbid, costly disease in the adult population that presents unique challenges to self-care practices (ADA, 2016a). Once the challenges are identified, educational approaches can be designed to promote adherence to treatment plan while lowering the risk of hyperglycemia and related comorbid illnesses and ultimately improving quality of life. The prevalence of United States adults with T2D continues to rise due to nonadherence to disease self-management regimen (Gonzalez et al., 2016). In addition, many diabetics struggle to adhere to their diabetes treatment due to poor knowledge and understanding of the effects of T2D on their bodies (Gonzalez et al., 2016).

A critical factor in T2D is the self-management of the condition. A strong knowledge base and comprehension of the disease must be present for diabetic patients to successfully manage this illness. Patients with T2D must remain adherent participants in their personal care. Therefore, the HPM was used to provide adequate guidance to the development of this educational initiative. The goal of the initiative was to promote

healthy behaviors in patients with T2D to improve their self-care activities and healthcare outcomes.

Lifelong self-care behaviors for T2D include adoption of a healthy diet, staying physically active, testing blood glucose properly, adhering to prescribed medications, practicing healthy coping activities, and reducing any risk behaviors (Jansà et al., 2013). Patients' nonadherence to these behaviors can be pervasive risks to their own healthcare management. Serious health complications and additional health disorders can be prevented through proper control in balancing the glucose in the blood (Asif, 2014). Thus, incorporation of self-care management education into the medical center's practice should improve adherence in patients with T2D.

Chapter 2

Review of the Literature

The prevalence of T2D is escalating, and the disease is an ongoing health concern in America, causing increasing strain on healthcare services (CDC, 2017). It has been estimated that 27 million people living in America have diabetes and 10.9 million diabetes cases are associated with people older than 65 years (CDC, 2017). By the year 2020 according to the CDC (2017), it is predicted that 50% of the American population will have elevated blood glucose. Outcomes from a project piloted by the World Health Organization indicated that 300 million individuals will have the disease by 2025, with only a 50% in adherence rate (CDC, 2017; Shrivastava et al., 2013; WHO, 2013). Thus, nonadherence can be a major problem to diabetes self-care practices.

Shrivastava et al. (2013) indicated that poor T2D self-care practices can lead to poor health outcomes, diminished quality of life, and increased health costs. Study outcomes from the WHO (2013) evaluation of adherence actions indicated that patients' compliance with their treatment plans can positively influence their overall health. Patients with T2D must monitor their health and adjust self-care actions, such as eating healthy foods, engaging in regular physical activities, adhering to medications, and keeping appointments for routine medical follow-ups (ADA, 2016a). An educational initiative is essential for these patients to increase awareness of the disease and its management as well as to encourage and promote their self-care practices.

CDC (2017) indicated that 40% of U.S. adults are expected to develop T2D. That percentage represents approximately 50% more Hispanic individuals at present than non-Hispanic individuals**.** The Hispanic population has also shown poor blood glucose control (Fortmann et al., 2015). For Hispanics, low socioeconomic status, diminished self-care practices, ethnic beliefs, and lack of knowledge about diabetes may contribute to the severity of the risk (Fortmann et al., 2015). The propensity to T2D for Hispanics warrants resources and education that promote better T2D self-care practices and glucose management in this population.

Search of the Literature

A literature review related to evidence-based study on T2D self-care practices education was completed. The search for the evidence-based research for the QIP was conducted with several applicable databases. These were PubMed, Cochrane Library, Cumulative Index to Nursing and Allied Health (CINAHL), Medline, Joanna Briggs Institute (JBI), Evidence for Policy and Practice Information (EPPI), EBSCO, Nursing and Academic Edition Database, and Google Scholar search engines.

Publications reviewed were limited to evidence-based studies reported within the last 5 years in peer-reviewed journals. All journals were published in English. Keywords searched were *adults of 18 years old with T2D, Bandura Self-Efficacy Model, diabetes, diabetes and DSME approach, diabetes knowledge and self-efficacy, diabetes personal care management practices and DSME, glycemic control, instruments or tools or measures used in T2D self-care management, Latino, self-management*, *T2D and behavior changes,T2D and lifestyle changes, T2D and self-care management practices*, and *T2D in Hispanics.*

The search generated over 4,000 studies, and 36 studies were used for the literature review. Five of the articles focused on various educational tools proven to increase adherence in diabetics. Themes identified in the literature search were (a) inadequate diabetes education in Hispanics, (b) multifaceted educational approach to promote glycemic control, (c) sociocultural and financial factors contributing to nonadherence, (d) psychological effects on adherence, (e) healthcare providers' lack of awareness of validated educational tools to increase adherence, and (f) complex medication regimen. The following sections review the pertinent literature.

Inadequate Diabetes Education in Hispanics

Asante (2013) found that knowledge deficits and misconceptions related to self-care practices continue to exist among Hispanic patients with T2D. Furthermore, Asante (2013) stated that limited knowledge and understanding are causative elements in the increased rate of nonadherence of T2D in this population. Knowledge deficit of antidiabetic medications, diabetes treatment, treatment complexity, and healthcare costs were contributing factors to nonadherence (Asante, 2013; Brundisini, Vanstone, Hulan, DeJean, & Giacomini, 2015). Asante (2013) suggested that addressing barriers that contribute to nonadherence will increase adherence and quality of life of diabetics.

Education is an essential element of diabetes care (American Diabetes Association [ADA], 2015a, 2015b, 2015d, 2015e). The results of several researchers supported the importance of education in diabetes care. Berr, Lockhart, Davies, Lindsay, and Dempster (2015), Jansiraninatarajan (2013), and Parajuli, Saleh, Thapa, and Ali (2014) indicated that patients who were educated on T2D used preventive measures, took

their medicines as prescribed, monitored their blood sugar levels, and had lower healthcare costs than patients who were not educated on T2D.

Multifaceted Educational Approach

Optimum management of T2D is important to prevent health problems and is a primary goal for diabetic patients (Andrew et al., 2015). Current research supports the importance of educating patients with T2D, and a multifaceted educational approach is recommended (Chavan, Waghachavare, Gore, Chavan, Dhobale, & Dhumale, 2015; Beck et al., 2017; Bonilla & Grant, 2015; Pillaya, Aldousb, & Mahomeda, 2016; Tavakol-Moghadam, Najafi, & Yektatalab, 2018). Therapeutic adherence is a key element in the control of the disease. The absence of adherence can negatively impact the incidence and prevalence of diabetes. Fifty percent of diabetic patients do not adhere to their therapy, and this percentage increases where resources and education are lacking (American Diabetes Association [ADA], 2014; Florida Diabetes Report, 2017; WHO, 2013).

Chavan et al. (2105) emphasized that an interdisciplinary approach is crucial for effective patient education with T2D to improve patient outcomes, adherence to medication therapies, and enhancement of healthcare delivery. In addition, multidisciplinary educational interventions on diabetes self-management are effective in delaying the consequences of the disease (Garcia-Perez et al., 2013; Tavakol-Moghadam et al., 2018). Pillaya et al. (2016) found that effective integration of a multifaceted method to diabetes care held potential in achieving patients' glycemic targets and improving their quality of life.

Different Views of Healthcare Providers

T2D is a lifelong illness without any cure (ADA, 2016a). Due to the chronic nature of the disease, an effective treatment plan requires honest collaboration between patients and providers to enhance adherence and decrease morbidity and mortality (ADA, 2016b). Improving treatment adherence needs to be a priority for healthcare providers and patients (American Diabetes Association [ADA], 2013; García-Pérez et al., 2013; WHO, 2013). According to Brundisini et al. (2015), healthcare providers believed that the incidence of nonadherence increases poor health outcomes and healthcare costs for diabetic patients. Therefore, improving the continuity of care of diabetics through better rapport and knowledge sharing has shown to be related to increased compliance and enhanced health outcomes (Garcia-Perez et al., 2013).

Brundisini et al. (2015) studied the differences between providers' approach to quality of health and patients' perceptions of the danger of adverse effects of antidiabetic medications. The researchers described occurrences where diabetics agreed to take their medications; however, they did not follow through for unclear reasons. According to Garcia-Perez et al. (2013), providers recognized different behaviors, including cultural norms, and economic constraints leading to increase nonadherence. However, no substantial evidence in the literature was found to prove that intentional nonadherence resulted from patients' refusal of taking antidiabetic medications due to their side effects (Brundisini et al., 2105).

Similarly, healthcare professionals and patients disagreed on how best to influence the self-care management of diabetic patients (Gonzalez-Zacarias et al., 2016). However, clinicians described patients' knowledge deficit about the illness as the

principal reason for nonadherence (Brundisini et al., 2015). Garcia-Perez (2013) showed that the views of healthcare providers focused on diabetics' comprehension about the basic physiology of the disorder and the roles of therapeutic and lifestyle interventions. These included the nature of the problem, the steps that must be completed, and by what means.

Several clinicians recognized the significance of emotional, mental, social, and spiritual elements. However, the clinicians related these factors to lack of motivation rather than the patients' taking medications as prescribed (Gonzalez-Zacarias et al., 2016). Recent research studies corroborated these outcomes, indicating that health providers considered motivation as an essential element for diabetics' comprehending of the disease and effectual health education (ADA, 2013; Brundisini et al., 2015; Gonzalez-Zacarias et al., 2016; Hale et al., 2015; WHO, 2013).

Psychological Effects on Adherence

Positive and negative sentiments can enhance or impair medication compliance in diabetics (Brundisini et al., 2015; Chew, Shariff-Ghazali, & Fernandez, 2014; Jaremka, Lindgren, & Kiecolt-Glaser, 2013). Brundisini et al. (2015) observed that positive health benefits of treatment can strengthen self-empowerment and self-care practices. Similarly, Jaser, Patel, Rothman, Choi, and Whittemore (2014) reported that positive psychosocial elements were essential mediators of medical outcomes in the care of patients with T2D. In contrast, undesirable emotions, such as anxiety, guiltiness, lack of confidence, and exasperation can decrease adherence to diabetes care (Jaremka et al., 2013).

Sociocultural and Financial Factors

Basu and Garg (2017) pointed out several characteristics associated with the culture of the U.S. Hispanic population with T2D that negatively impact diabetes self-care management. These characteristics include low confidence in diabetes self-care, herbal remedies, ethnic food, and putting family members' needs over their own. In addition, the negative history of family members with diabetes, cultural beliefs, lack of access to diabetes education, and low socioeconomic status contributed to poor compliance with self-care practices (Parajuli et al., 2014). However, these barriers can be overcome with ethnically suitable education on diabetes and support programs for Hispanic patients with diabetes (Barcelo, Arredondo, Gordillo-Tobar, Segovia, & Qiang, 2017; Basu & Garg, 2017; Gonzalez-Zacarias et al., 2016).

CDC (2017) and Fortmann et al. (2015) recognized that Hispanic patients tend to have more uncontrolled glycemic levels compared to other ethnic groups, resulting in more frequent complications and negative health outcomes. Lack of education on T2D may be a contributing factor to these disparities (Fortmann et al., 2015). Nevertheless, more innovative research studies pertaining to better diabetes self-care practices and blood glucose control within the Hispanic populace are needed (Basu & Garg, 2017; Fortmann et al., 2015; Gonzalez-Zacarias et al., 2016) to influence changes in negative health behaviors (Miller & DiMatteo, 2013).

Patients with lower socioeconomic status were also associated with medication nonadherence, which resulted in poor clinical outcomes (ADA, 2015b; Faul, 2014; Kang, Lobo, Kim, & Sohn, 2018). Patients with T2D often have comorbidities that require medications in addition to oral diabetes medications (Kang et al., 2018). Prescription

medication costs are increasing and many diabetic patients experience cost-related medication nonadherence (CRN) (Williams, Steers, Ettner, Mangione, & Duru, 2013). CRN is defined as patients' taking less medication than prescribed because of cost. CRN exists between 16% and 19% in patients with diabetes (Kang et al., 2018). Cost-associated nonadherence among Hispanic patients with diabetes can prevent them from adhering to their medication regimen (Barcelo et al., 2017; Williams et al., 2013). As a result of their financial hardship, these patients tend to have involuntary nonadherence with their diabetes medication management.

Complex Medical Management

Generally, diabetic patients are responsible for managing their glucose control at least daily once a schedule of antidiabetic medicines has been created (Antoine, Pieper, Mathes, & Eikermann, 2014; García-Pérez et al., 2013). Antoine et al. (2014) indicated that poor compliance to antidiabetic medications therapy is very common and can result in serious health problems. In addition, complex treatment regimens, such as polytherapy, multiple daily-dosing of medications, long-term therapies, and loose-dose medications, can lead to poor adherence (Antoine et al., 2014).

Presently, there are several fixed-dose mixtures of medications for the management of T2D, which facilitate administration schedules and increase diabetics' compliance (Antoine et al., 2014; García-Pérez et al., 2013). García-Pérez et al. (2013) showed increased adherence in patients with T2D who used single-tablet or fixed-dose formulations compared to those taking loose-dose regimens. In addition, patients on fixed-dose combinations had lessened health costs, improved treatment satisfaction, and

better life expectancy when compared to those on loose-dose combinations (Antoine et al., 2014; García-Pérez et al., 2013).

Effectiveness of Educational Tools

Educational tools are vital and effective in teaching Hispanic patients with T2D about self-management practices (ADA, 2014, 2015a, 2015b, 2015d, 2015e, 2016b; American Diabetes Association [ADA], 2015c). These tools are also essential in the assessment of adherence to diabetes treatment plans (Jansà et al., 2013). Multiple surveys revealed that the utilization of educational tools, such as the American Association of Diabetes Educators (AADE) AADE7 Self-Care Behaviors, Diabetes Self-Efficacy Scale, and Diabetes Self-Care Inventory-Revised version (SCI-R), resulted in improved self-care behaviors and healthy lifestyle choices (ADA, 2014, 2016a; Asante 2013; Jansà et al., 2013; Jansiraninatarajan, 2013; Parujuli et al., 2014).

In addition, practical and visual informative materials can help diabetic patients to remember the knowledge learned to better their self-care practices (ADA, 2014, 2016a; Jansà et al., 2013). A combination of materials seems to be most effective. Many researchers have found that patient education materials improved healthcare and outcomes, thus decreasing healthcare costs as well as hospitalization rates (ADA, 2014, 2015a, 2015b, 2015c, 2015d, 2015e, 2016a; Antoine et al., 2014; Barcelo et al., 2017; Beck et al., 2017; Garcia-Perez et al., 2013; Gonzalez- Zacaria et al., 2016; Williams et al., 2013).

Self-Efficacy and Self-Care Management

Self-efficacy and self-care management are vital elements of good diabetes care (Moore & Lavin, 2013). Successful self-care practices of T2D are essential to achieve

positive health outcomes (ADA, 2014, 2015a, 2015b, 2016a, 2016b). Culturally-based diabetes informative programs were found to improve patients' health behaviors, knowledge, health status, and self-efficacy (Robertson, Amspoker, Cully, Ross, & Naik, 2103). Because self-care practices incorporated behavioral, personal, and environmental elements into patients' daily activities (Mehta, Trivedi, Maldonado, Saxena, & Humphries, 2015), the concept of self-efficacy is pertinent for improving self-care practices (Cheng et al., 2017) as patients make the necessary changes to manage their T2D (Berry et al., 2015).

Gaps Identified in the Literature

Identification of a literature gap is imperative to a study because the gap indicates the need for new research and increases the possibility of publication (Dyke et al., 2013). Several gaps were identified from the literature review. Medicinal herbs were not addressed in the literature; many natural remedies for diabetes are available. Treatments can range from alternative medicines to natural solutions and traditional medications. However, the literature did not report on the use of these methods in the treatment management for diabetic patients.

Several research studies indicated that adherence to recommended treatments are essential to reduce adverse outcomes. Research outcomes indicated less than 50% of patients reach the glycemic goals recommended by the American Diabetes Association (García-Pérez et al., 2013). New and more advanced approaches are needed to these gaps and focus on improving the overall adherence rate in diabetes self-care management. Improvement in adherence rates in turn will slow the progression of this life-threatening disease.

Summary

T2D affects millions of people worldwide and poor lifestyle choices and interventions contribute to this condition. According to Chrvala, Sherr, and Lipman (2016), effective interventions are necessary to slow this worldwide epidemic and its related complications. The literature review revealed positive results of providing T2D education for self-care practices of patients with the use of an educational initiative (Basu & Garg, 2017; Berry et al., 2015; Cheng et al., 2017; Fortmann et al., 2015; Gonzalez-Zacarias et al., 2016; Jansà et al., 2013; Mehta et al., 2015; Moore & Lavin, 2013).

The research supported poor compliance to self-care therapy of diabetes in the well-being of Hispanics with T2D. Thus, an educational approach is needed to promote adherence to self-care practices in diabetics (Berry et al., 2015; Cheng et al., 2017; Jansà et al., 2013; Parajuli et al., 2014). Poor adherence to the management of diabetes is a serious threat to the well-being of Hispanics with T2D (ADA, 2016a, 2016b). Thus, health clinicians must evaluate their patients for adherence to management therapy.

The findings from the literature suggested that education increased patient and providers' knowledge, increased patient self-efficacy to promote self-care management practices, and addressed factors that contributed to nonadherence. These factors were beneficial to improving compliance to glycemic control (Antoine et al., 2014; Asante, 2013; Bonilla & Grant, 2015; Chew et al., 2014; Jansiraninatarajan, 2013; Pillaya et al., 2016; Tavakol-Moghadam et al., 2018; Vijay & Kumbhakar, 2016). Therefore, the use of an educational initiative to promote adherence to diabetes self-care practices supports a change in practice.

Patients with increased knowledge in diabetes were capable of making well-informed decisions about personal care and adhered to good behavioral changes to control their disease (Mehta et al., 2015). In addition, an increase in T2D knowledge was related to an increase in patients' self-efficacy, leading to a more consistent glucose monitoring (Mehta et al., 2015). The high cost of the management of T2D can be alleviated by decreasing its prevalence in the Hispanic population through education that contributes to disease prevention (ADA, 2015b; Faul, 2014; Kang et al., 2018).

The studies reviewed support education as an effective intervention to promote adherence in the management of T2D in Hispanics. Glycemic control is a strong predictor of illness development of cardiovascular problems for individuals with T2D (Chrvala et al., 2016). Given the chronic nature of diabetes, focused attention is required from patients and healthcare providers for education toward adherence and glycemic control. The need is essential for continuing education to improve care in Hispanic T2D patients and their adherence to treatment plans. Application of educational concepts and evidence-based practices of the QIP can help to improve Hispanic patients' compliance with self-care practices, resulting in improving their overall glycemic control management and T2D.

Chapter 3

Methods

Type 2 diabetes in the Hispanic population is increasing compared to other ethnic groups (Lopez, Bailey, Rupnow, & Annunziata, 2014). Hispanic patients with T2D experience higher mortality rates from micro- and macrovascular diseases, kidney disease, strokes, and amputation of lower extremities (Lopez et al., 2014). The review of related literature provided support that education regarding appropriate T2D self-care management practices can increase success in treating the disease (Chavan et al., 2015; Beck et al., 2017; Bonilla & Grant, 2015; Pillaya et al., 2016; Tavakol-Moghadam et al., 2018).

This chapter defines the project objectives, setting, and recruitment methods. The chapter also enumerates the eligibility criteria for participants. In addition, this section describes the project's design, timeline, budget, and ethical considerations, including informed consents, processes, and the data collection and analysis plan.

Project Design

A quantitative exploratory design was used for this quality improvement project. The quantitative inquiry approach was used to collect pertinent information about the participants and results of the evaluation of this evidence-based practice (EBP) self-management educational program. The participants were Hispanic adults with T2D at a

South Florida medical facility. A demographic questionnaire described the selected population, and three outcome measures determined the effectiveness of the program.

In addition to the demographic questionnaire, the three measurement tools were pre/post intervention measurements of patients' blood glucose (HgA1c) levels, a pre/post intervention knowledge assessment of diabetes, and a pre-/post intervention measurement of self-efficacy for diabetes management. The HgAlc levels were drawn as routine screening tests during regular scheduled follow-up clinic visits for project participants and no additional blood samples were drawn. The assessment tools were administered at the patients' individualized educational sessions. The postintervention measurements took place 2 to 3 months after the educational sessions.

Setting

A primary care center in North Miami Beach, Florida, was selected as the setting for this QIP. The medical center has been operating for 3 years and serves patients from 9:00 a.m. to 5:00 p.m. on weekdays. The center is staffed with one provider, one office manager, and two medical assistants. Based on chart reviews and the center medical yearly report, of the 312 patients who receive health services at the center, 70% (218) are Hispanic.

Hispanics are defined as follows: "The ethnic term Hispanic refers to a person from Cuba, Mexico, Puerto Rico, South and Central America, or other Spanish cultures or origins, regardless of race" (Juckett, 2013, p. 48). In the North Miami Beach communities, Hispanics are the largest minority population with T2D (Juckett, 2013). Therefore, there is an immediate need "to explore how these patients comprehend, view, and experience behavior changes in relation to their diabetes and to identify and

incorporate more approaches that may be beneficial in promoting adherence to their self-care management of the disease" (Aponte, Campos-Dominguez, & Jaramilla, 2015, p. 19).

At the medical center, 40% of 70% of Hispanics have uncontrolled T2D. Their illness is uncontrolled because they are not adopting a healthy lifestyle; not adhering to improved diet, exercise, and antidiabetic medications; and missing or cancelling at least one follow-up appointment out of four in the last year. Currently, no coordinated educational program exists at this facility for T2D patients. According to the clinical staff, time constraints and lack of staff resources limit diabetes education opportunities for patients, and escalating medication regimes are often the treatment of choice.

Chart audits revealed that patients are not taking their medications as prescribed nor complying with follow-up medical visits. At the center, poor patient adherence to their diabetes medications is a challenge to achieving glycemic control or lowering HgA1c levels. In addition, many diabetic patients have failed to maintain their HgA1c levels at the recommended percentage of under than 7% (Polonsky & Henry, 2016) for the past 2 years. According to the center's 2017 yearly report, the proportion of patients with HgA1c levels increased significantly from 40% in 2015 to 50% in 2017. Therefore, evaluation of the self-care management skills of this population is warranted.

Positive outcomes related to knowledge, self-efficacy, and self-care practices for T2D patients have been widely reported in the literature following educational initiatives (ADA, 2014, 2015a, 2016a; Antoine et al., 2014; Barcelo et al., 2017; Basu & Garg, 2017; Beck et al., 2017; Berry et al., 2015; Chrvala et al., 2016; Cheng et al., 2017; Fortmann et al., 2015; Gonzalez-Zacarias et al., 2016; Jansà et al., 2013; Mehta et al.,

2015; Moore & Lavin, 2013; Robertson et al., 2103; Williams et al., 2013). This literature provides an evidence base by which to support the implementation of the educational initiative in this setting and this patient population. Successful T2D education has been evaluated with diabetes educational tools, such as the AADE7 Self-Care Behaviors, Diabetes Self-Efficacy Scale, and the SCI-R (ADA, 2014, 2016a; Asante 2013; Jansà et al., 2013; Jansiraninatarajan, 2013; Parujuli et al., 2014).

Therefore, this QIP incorporated these tools into the EBP project to measure Hispanic participants' self-confidence and evaluate their knowledge of and adherence to self-care management recommendations and provide them with education to facilitate positive behavior changes. The outcome will increase the "likelihood of achieving desirable T2D management through healthy diet, regular exercise and medications adherence" (Ghafoor, Riaz, Eichorst, Fawwad, & Basit, 2015, p. 231). Similarly, participants will become more confident in modifying their lifestyles and living better quality lives (Ghafoor et al., 2015).

Recruitment Methods

The recruitment of potential partakers for this QIP was conducted in three steps. The first step was the referral process. The principal investigator obtained oral or written referrals for possible project participants from the center's medical provider. The referrals were made after the provider saw and identified potential participants with an HgA1c serum 7% or greater during scheduled clinical visits.

Participants' names were placed on a list and stored in a secured locked drawer to maintain patient confidentiality and privacy. Only the principal investigator had access to

the drawer. The referral process continued until 20 possible project participants were identified.

The second step was the screening process. The project investigator screened the referred participants to ensure that they met the inclusion criteria of the QIP. The third step was educating potential diabetic Hispanic participants about the QIP and its potential benefits and obtaining informed consent. It was anticipated that the education intervention would take 30 to 60 minutes based on the needs and level of engagement of eligible participants. Participation in the evidence-based QIP was voluntary and there were no financial incentives given to project participants.

Inclusion Criteria

Twenty Hispanic adults who met the inclusion criteria participated in this evidence-based practice project. The inclusion criteria for participants in this QIP were as follows: Hispanic males and females, age 35 and older, with a diagnosis of T2D for at least 2 years, having missed or cancelled at least one appointment out of four follow-up visits in the last year, and taking at least two oral antidiabetic medications. Potential project participants must have had a hemoglobin A1c (HgA1c) level of 7% or higher from January 21, 2019, to January 31, 2019, based upon their HgA1c blood sample analysis, must have agreed to take part in the project, able to sign a written informed consent, and must be able to speak, read, and understand English.

Exclusion Criteria

This project had several exclusion criteria. These were as follows: non-Hispanic patients, Hispanics with type I diabetes, patients less than 35 years old, and patients with a diagnosis of type 2 diabetes less than 2 years, as well as taking fewer than two oral

antidiabetic medications. Additional exclusion criteria were patients who did not speak, read, or understand English, and pregnant women.

<div align="center">**Ethical Considerations**</div>

This QIP involved human subjects. A project requires Institutional Review Board (IRB) approval if it includes both research and human participants. Thus, approval from the Nova Southeastern University Institutional Review Board (NSUIRB) was obtained prior to the implementation of the project and data collection (Appendix A). The IBR has the responsibility to ensure that the project investigator complies with applicable regulations and the risks to human subjects are minimized (Haahr, Norlyk, & Hall, 2014). In addition, the IRB evaluates recruitment methods to ensure that the principal investigator is in compliance with the Health Insurance Portability and Accountability Act privacy rules (Haahr et al., 2014). The project site does not have an IRB. However, the medical director of the center supported and supplied written approval for this EBP project (Appendix B).

Protection of Participants

"Protecting the health, dignity, integrity, right to self-determination, and privacy and confidentiality of personal information of research participants" is a high priority (Yip, Han, & Sng, 2016, p. 684). Participants in this educational initiative were assured of the confidentiality of their medical records as well as any data collected during their participation. A numerical value was assigned to each participant and used on all study-related materials which contained patient data. All deidentified data collection forms and study materials were stored in a secured locked drawer in the provider's office accessible only to the project investigator.

All electronic information was stored and secured on the principal investigator's personal computer. The investigator was the only user of the computer, which has a secured password only used by the investigator. The computer was set to turn off after 1 minute of inactivity.

On completion of the study, signed consent forms and other study-related materials will be kept for a minimum of 3 years and then destroyed. Project participants' identifiable paper records will be shredded and placed in a container used for discarding confidential materials. Participants' electronic data stored on the principal investigator's computer hard drive will be erased using commercial software applications designed to securely erase all data from the storage device.

Informed Consent

As protection of human subjects is of paramount importance, the goal of the informed consent process is for potential participants to have a clear understanding of the QIP, its objectives and phases, possible risks and benefits, and available alternatives to involvement. Potential participants were assured that they would receive their usual care if they chose not to participate. If the patient agreed to participate, the principal investigator obtained both verbal and written informed consents (Appendix C). Patients were assured that their participation was voluntary and their right to cease involvement at any time during the intervention would be honored.

<div align="center">

Intervention Design

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The Diabetes Education Kit (DEK) included health materials to help the participants understand their disease and make informed decisions and behavioral changes that would benefit their health, longevity, and quality of life. Educational

interventions can enhance compliance in diabetic patients by providing them with evidence-based materials and skills (Powers et al., 2016). Based on Pender's theoretical model and with permission for use (Appendix D), the educational materials enhanced diabetes patients' knowledge and self-efficacy with illustrations for key concepts to guide patients through instructions for self-care practices.

The educational sessions were conducted with each participant individually by the principal investigator in a quiet, private setting within the medical center using the contents from the DEK handout materials. These materials were developed regarding standard diabetes care that was crosschecked and verified with American Diabetes Association care standards for individual diabetic needs (Appendix E).

Participants were provided with a folder containing the educational materials to refer to during the sessions and take with them at the conclusion. The DEK was composed of six modules (Taking Medication, Glucose Monitoring, Being Active, Healthy Eating, Healthy Coping, and Reducing Risks with Follow-Up Visits (including all medical checkups; Appendix EF**.**

Antidiabetic Medications

Taking antidiabetic medication as prescribed is important for the management of T2D (Appendix F). The principal investigator educated participants on the importance of taking their antidiabetic medications as prescribed by the provider. The names of the medications, doses of medications, and the reasons the provider prescribes the medications were discussed. Also, the importance of participants bringing all medications to their healthcare appointments, including over-the-counter products, supplements, or natural remedies was discussed.

Self-Blood Glucose Monitoring

Testing the blood glucose levels of diabetic patients is an important part of diabetes self-care (ADA, 2014, 2015a, 2015b, 2015c, 2015d, 2015e, 2016a, 2017). The principal investigator instructed the participants (Appendix F) in learning how to use a glucose meter, when to check their blood glucose, what the results mean, and what to do when the results are not within target range. According to ADA (2017), the target range for diabetics is 70 to 130mg/dl before meals and less than 180 mg/dl 1 to 2 hours after meals. Project participants will also be educated on how to read the blood sugar results and how to record them in a daily log.

With a glucometer, the investigator demonstrated how to test blood sugar levels and then record them. Participants provided return demonstration posteducation. At the end of the education session, participants who did not have glucometers were provided with prescriptions for glucometers and a log to record their blood glucose results.

Being Active: Exercise and Physical Activity

Physical activity helps T2D patients keep blood glucose in control (ADA, 2017). Managing T2D is challenging, but diabetes education can help patients live longer (Rowley, Bezold, Arikan, Byrne, & Krohe, 2017). Regular physical activity is as important to manage T2D (ADA, 2017). Therefore, the principal investigator assisted selected participants in designing physical activities (Appendix F), such walking 30 minutes daily, jogging, dancing, swimming, and biking. These activities helped participants to manage the disease.

Healthy Diet

T2D self-care control is important to achieving glucose control and enhancing health outcomes (ADA, 2017). Strong evidence confirms that adopting a healthy diet can improve diabetes outcomes (Beck et al., 2017; Bonilla & Grant, 2015; Chavan et al., 2015; Ghafoor et al., 2015; Pillaya et al., 2016; Tavakol-Moghadam et al., 2018). Diabetic patients were educated on the importance of consuming a balanced diet that is naturally rich in nutrients and low in fat and calories in order to manage their blood glucose and prevent health complications (Appendix F). Healthy food selections include fruits, vegetables, and whole grains (ADA, 2017). The principal investigator showed food packages during the education sessions to demonstrate and educate participants on eating correct food portions, eating healthy snacks on time, and reading food labels to make better choices. Return demonstrations were required from participants posteducation.

Healthy Coping

T2D can affect patients physically and emotionally. Burns, Deschênes, and Schmitz (2016) and Jaremka et al. (2013) indicated that Hispanic patients living with the disease may feel stressed, discouraged, or even depressed. Therefore, it is natural for patients to have mixed feelings about self-care management practices (Aponte et al., 2015; Chew et al., 2015). In this QIP, T2D Hispanic patients were educated to develop more healthy coping strategies to apply on a daily basis to improve their self-care practices (Appendix F).

These skills included engaging in support groups, faith-based activities, exercise, counseling, meditation, and building healthy relationships (Burns et al., 2016). In addition, educating T2D Hispanic patients on coping management strategies improved

their abilities to cope with the disease. Better coping resulted in developing personal strategies to encourage healthy behavior changes.

Reducing Risks with Medical Follow-Up Appointments

Diabetic Hispanic patients who do not keep and follow-up on their medical appointments interrupt the clinician's efforts to provide continuity of care (ADA, 2016b, 2017). In addition to patients' daily self-care, it is important that they stay up-to-date with their laboratory examinations, screenings, and clinic appointments. Therefore, in addition to the DEK materials, project participants were educated on the importance of maintaining their regular medical visits and completing their tests and screenings as recommended by their provider to improve their self-care practices and health status.

Quality Improvement Project Instruments

Demographic Questionnaire

The demographic questionnaire was designed by the principal investigator based on items in the literature. The questionnaire has seven questions and requests information about participants' age, gender, ethnicity, compliance with follow-up appointments, and number of years diagnosed with diabetes, as well as achievement in disease management control, and recognition of symptoms of low/high blood sugar levels (Appendix G). The purpose of the demographic questionnaire was to obtain basic demographic information from participants (Reisi et al., 2016). In addition, this instrument helped the principal investigator gain a better understanding of project participants.

Self-Care Inventory-Revised Questionnaire

The Self-Care Inventory-Revised (SCI-R) questionnaire was created by Weinger, Butler, Welch, and La Greca (2005) for pediatrics and was found to be useful for adults

with both types of diabetes (Mumtaz, Haider, Malik, & La Greca, 2016; Weinger et al., 2005). The SCI-R questionnaire is a self-report tool that assesses patients' cognizance of their compliance with their disease self-management recommendations over the past 1 to 2 months (Jansà et al., 2013). The instrument has been shown to be a valid and reliable tool for evaluating patients' overall knowledge of compliance to their disease self-management recommendations in multiple research studies (ADA, 2014, 2016a; Asante 2013; Jansà et al., 2013; Jansiraninatarajan, 2013; Murntaz et al., 2016; Parujuli et al., 2014). The internal consistency of the SCI-R is 0.87 (Jansà et al., 2013; Ritter & Lorig, 2014). Permission was given for use of the instrument (Appendix H).

The SCI-R is comprised of 15 questions on a 5-point Likert scale that address patients' nutrition intake, glucose testing, medicine administration, physical activity, low blood sugar levels, and preventative aspects of self-care (Appendix I). A high score indicates increased level of knowledge in managing the disease. Items 3 and 15 were omitted in this project because they did not apply to project participants. The SCI-R was a useful and effective tool (Jansà et al., 2013) for this QIP because it can provide the principal investigator with an indication of how well diabetics adhere to their self-care recommendations.

Self-Efficacy for Diabetes Questionnaire

Self-efficacy is an individual's beliefs in his or her aptitude to succeed and make changes in particular situations (Bandura, 1997; Lee, van der Bijl, Shortridge-Baggett, Han, & Moon, 2015). The Self-Efficacy for Diabetes (SED) instrument from the Stanford English Diabetes Self-Management Resource Center was utilized to evaluate project

participants' self-efficacy. The scale does not require permission for use (Ritter & Lorig, 2014).

The SED contains eight survey items that measure how self-confident individuals are in performing certain activities (Appendix J). The questionnaire measures patients' abilities to manage their day-to-day diabetes self-care management, including nutrition, exercise, medication compliance, and blood sugar testing (Lee et al., 2015). The SED is a reliable scale with internal consistency of .83 (Lorig, Ritter, Villa, & Armas, 2009). The instrument is scored on a 1 to 10 rating system, with higher scores indicating greater self-confidence (Lee et al., 2015; Ritter & Lorig, 2014).

Self-efficacy is essential for individuals with T2D (Lee et al., 2015). Improved diabetes self-efficacy has been related to T2D self-care enhancement and glucose management (Adu, Malabu, Malau-Aduli, & Malau-Aduli, 2019). Moreover, "higher levels of diabetes specific self-efficacy can result in increased resilience when diabetics face challenges associated with diabetes self-management" (Ritter & Lorig, 2014, p. 1265). Therefore, ongoing education to improve or promote self-efficacy in Hispanic patients with T2D is needed to equip them with self-control of their diabetes (Ritter & Lorig, 2014).

Data Collection

Data collection took place after approval by the NSUIRB and permission from the medical center (Appendices A and B). "Data collection is the gathering of data that are pertinent to the project purpose and it is crucial to safeguarding the integrity of the research study" (Doody & Noonan, 2013, p. 32). First, piloting of the QIP took place. The principal investigator emailed 25 fellow nurses and nurse practitioners the DEK

materials, instruments, and a short survey for their feedback and suggestions on the educational initiative (Appendix K). Their recommendations were taken into account in the preparation of the final materials.

Next, participants who met the project inclusion criteria were approached and invited in person to participate in the QIP. On agreement, they were asked to sign the informed consents (Appendix C). Data collection then took place and was conducted in the provider's office outside the patient care area to maintain confidentiality.

Pre-HgA1c levels were measured during participants' appointment visits with the provider prior to the beginning of each teaching session. Upon participants' arrival to the center, each approved candidate was given a number that was used throughout the remainder of the project. The principal investigator kept a master list of the project participants and their identifiers in a secure locked drawer.

The individualized educational sessions started with the participants completing the demographic questionnaire (Appendix G). The investigator then asked participants to complete the SCI-R and SED prior to the educational session intervention. If participants had low literacy, the principal investigators read the questionnaires to them.

The educational session was based on the AADE7 standards for the self-care management practices of diabetes (Appendix E). All education materials have been published and endorsed by the American Diabetes Association. Each individual educational session lasted approximately 30 to 60 minutes and took place during participants' medical visits to increase enrollment and follow-up. At the end of the session, the Diabetes Education Kit containing handouts describing the process of T2D, its comorbidities and complications, and the importance of healthy diet and routine

physical activity in diabetes self-care control were given to each project participant (Appendix F).

Following the educational session, participants completed a post-HgAlc test as well as a postintervention SCI-R and Self-Efficacy Questionnaires (Appendices I and J). The posttests were administered between 2 and 3 months after completion of the individual educational sessions under similar conditions as the pretests and lasted 45 to 60 minutes.

Data Analysis

Pretest and posttest questionnaires were then scored according to the guidelines for each instrument. Participants' pre- and post-HgA1c test results, their self-care knowledge scores from the SCI-R, and their self-efficacy scores from the SED were analyzed at the end of the QIP. The IBM Statistical Package for the Social Sciences (SPSS), Version 24 for Windows, was used.

A paired-samples *t* test analysis was conducted. "A paired-samples t-test will be used to compare the means of two related groups to determine whether or not there is a statistically significant difference between these means" (Kim, 2015, p. 540). For this QIP, the paired-samples *t* test compared the means for the T2D Hispanic patients of their pre/post HbA1c levels as well as the means of their pre/post SCI-R and SED. This educational initiative had the potential to decrease Hispanic participants' HgA1c levels to less than 7% and increasing their knowledge of and adherence to T2D self-care management practices and self-confidence in their adherence, leading to improved health outcomes.

Timeline

The planning of the QIP required teamwork and organization. The time frame to finalize this study was January 2019 through August 2019. The date NSUIRB approval was August 2018 (Appendix A). The implementation phase began in January 2019. Starting from the third week of January 2019, eligible participants had their HgA1c measurement completed during their medical appointments prior to the individual educational session. At the commencement of the educational session, the participants completed the demographic survey and the SCI-R and SED. This process lasted approximately 45 to 60 minutes.

Between 2 to 3 months from the completion of the educational session, the postintervention HgA1c test and administration of the SCI-R and SED were completed. This process lasted approximately 45 to 60 minutes. The data analysis and evaluation processes commenced in May 2019. Then, completion of the report took place, and the entire project was completed by August 2019.

Resources and Budget

The resources for the study consisted of the team composed of the principal investigator, the medical director, a nurse manager (office manager), and two medical assistants. The medical director referred all T2D Hispanic patients for participation in the QIP once they meet the inclusion criteria. The director also validated the scientifically-based practice information and resources before their implementation in the QIP. The office manager assisted in organizing and scheduling participants' medical appointments for the project. The medical assistants verified patients' information and prepared them for examination as well as drawing their HgA1c serums for the QIP.

The principal investigator led the project activities and provided the educational sessions to the 20 selected participants on their knowledge of T2D and the significance of their adherence to treatment. Diabetic snacks were provided at the end of the educational sessions. The investigator administered both pretests and posttests of the instruments individually to participants.

The total cost for this project was $460. Costs included purchase of office supplies, printing of all materials, editing of the DNP manuscript for publication, refreshments, and miscellaneous costs. Table 1 displays the budget.

Table 1

Budget for Capstone Project

Activity	Description	Quantity	Total Cost
Editing	Manuscript editors	1	$220.00
Printing	Copies of project proposal	4	$100.00
Printing	Consent forms	25	$ 5.00
Printing	Questionnaires	100	$ 20.00
Office supplies (pens, paper, folders, etc.)	For educational sessions	Unknown	$ 15.00
Refreshments	For participants at educational sessions	Unknown	$ 50.00
Miscellaneous	Unanticipated expenses	Unknown	$ 50.00
Total Cost			$460.00

Summary

This chapter described the importance of an educational initiative to increase T2D Hispanic participants' knowledge of personal care management skills and self-efficacy to improve adherence. Over the last few decades, patient compliance with diabetes recommended treatment has become of increasing concern for patients and providers (Albuquerquea et al., 2017). Even though diabetic patients may be aware of T2D health threats, they continue to take part in unhealthy activities, such as poor compliance with self-care practices and medical follow-ups (Albuquerquea et al., 2017). T2D self-care control and awareness are essential for optimal glycemic control and delay of complications resulting from T2D (Albuquerquea et al., 2017). Therefore, an educational initiative was necessary.

Education is vital in managing T2D Hispanic patients (Beck et al., 2017; Chavan et al., 2015; Pillaya et al., 2016). The most reliable litmus test for T2D patients to increase adherence to diabetes is to follow their treatment plans. Thus, the successful implementation of this exploratory quantitative design project brought diabetic Hispanic patients' recognition of good adherence to self-care practices. However, if patients lack self-efficacy, it can be challenging for them to adhere to their diabetes treatment management. Self-efficacy can influence patients' choice of behaviors as well as how they motivate themselves in activities that they undertake (Lee et al., 2015). As a result, patients with strong self-confidence will view the recommended behaviors as challenges to be mastered, even when they are difficult (Lee et al., 2015).

Yip et al. (2016) indicated that "research studies involving human subjects can raise unique and complex ethical issues" (p. 684). Human participants were essential to

the success of this QIP. The method and design of the project had to be planned carefully to attain the desired outcomes as well as to protect the human subjects (Yip et al., 2016). Protection of the participants was a high priority for the principal investigator. Therefore, this QIP was designed to ensure that all requirements of the NSUIRB were met and careful consideration was given to safeguard all the rights of the study participants. The QIP had a budget of $ 460.00 and will be completed by August 2019.

Information collection instruments are vital in the acquisition of accurate data in research study (Doody & Noonan, 2013). The tools used for data collection in this project have been used in previous studies and are valid and reliable (Mumtaz et al., 2016; Ritter & Lorig, 2014; Weinger et al., 2005). T2D continues to be a rising cause of healthcare complications and costs for Hispanics (Caspersen, Thomas, Boseman, Beckles, & Albright, 2015; CDC, 2017; Cradock et al., 2017). Implementation of this QIP can increase Hispanic patients' knowledge and adherence to T2D self-care management skills, leading to better health outcomes and quality of life.

Chapter 4

Results and Discussion

The purpose of this EBP project was to promote adherence to self-care management practices through an educational initiative for Hispanic adults age 35 years and older with type 2 diabetes. An evidenced-based intervention aimed at positively impacting self-care management practices of Hispanic adults with type 2 diabetes was undertaken. The intervention and focus of the quality improvement project included a well-developed educational initiative using teaching materials based on the American Association of Diabetes Educators standards for self-care management practices of diabetes to improve participants' knowledge. Data collection included participants' completion of a demographic questionnaire, measurement of participants' pre/post-HgA1c levels, a pre/post knowledge assessment (SCI-R), and a pre/post measurement of self-efficacy (SED). The paired *t* test was chosen for data analysis because this test facilitated the comparison of pre/post findings of this quality project.

Participant Demographics

Demographic data were collected from all project participants (Appendix G), including age, gender, and ethnicity. In addition, participants were asked about specific behaviors relating to T2D. These included the number of years they were diagnosed with T2D; how compliant they were with follow-up appointments, including attending at least

one appointment out of four follow-up visits in the last year; as well as whether or not they believed they could recognize low and high blood sugar.

A total of 20 Hispanic adults ($N = 20$) consented to participate. Thirty-five percent ($n = 7$) of project participants were male and 65% ($n = 13$) were female. The mean age of participants was 43.6 (SD 6.2; range 36-56), and their duration of having the disease ranged from 3 to 26 years, with a mean of 10.5 years. Forty-five percent ($n = 11$) of participants had missed at least one appointment out of four follow-up visits in the last year.

Additional baseline data collected from participants included changes they needed to make to improve their diet, monitor blood sugar, stay active, control their calorie intake better, increase knowledge of diabetes ($M = 2.0$; SD 1.4), and improve their abilities to recognize the symptoms of low/high blood sugar ($M = 1.5$; SD .5). Ten percent ($n = 2$) of participants were taking two antidiabetic medications, 70% ($n = 14$) used three antidiabetic medications, and 20% ($n = 4$) used four or more antidiabetic medications to effectively control their blood glucose. Table 2 displays the participant demographics.

Expected and Unexpected Findings

This evidence-based educational intervention sought to increase the knowledge of Hispanic adults with T2D by providing them with evidence-based materials to promote a better understanding of their diagnosis and to improve the likelihood that they would make knowledgeable diabetes self-care management decisions. It was expected that this educational initiative also would increase project participants' self-confidence regarding self-care practices resulting in more consistent blood glucose monitoring results and

effective health-promoting actions. Three tools measured participants' HgAlc levels, their knowledge of and adherence to self-care practices (SCI-R), and their self-confidence in carrying out the self-care practices (SED). Administration of the instruments and subsequent data analyses confirmed the expectations that participants would improve in all areas.

There were few unexpected findings postimplementation because the literature supporting the use of the AADE7 materials, on which the DEK was based, indicated improvement for T2D in blood glucose levels, knowledge of, and adherence to self-management practices. The major unexpected finding was related to HgA1c levels measured before and after the educational sessions. Nineteen participants had decreased levels but one participant had an increased HgA1c level of .3%.

Five objectives were formulated for this EBP. These were (a) to develop a self-care management individualized educational program for Hispanic diabetic patients in one urban medical center, (b) to implement a self-care management education program for patients with T2D, (c) to evaluate patients' HgA1c levels before and after the individualized educational initiative, (d) to measure the impact of the educational initiative on patients' knowledge of and adherence to of self-care management practices, and (e) to evaluate the impact of the educational initiative on patients' self-efficacy regarding self-care practices.

Table 2

Participant Demographics: Frequencies and Percentages (N = 20)

Category	Frequency	Percentage	Mean	SD
Age			43.6	6.2
36-38	7	35		
39-46	7	35		
47-51	3	15		
52-56	3	15		
Gender				
Male	7	35		
Female	13	65		
Ethnicity				
Hispanic	20	100		
Do you attend at least one appointment out of four follow-up visits in the last year?			1.5	.5
Yes	9	45		
No	11	55		
Number of years diagnosed with T2D			10.5	6.8
3-5	6	30		
6-8	5	25		
10-16	4	20		
18-26	5	25		
What do you need to change from the list below to achieve disease management control?			2.0	1.4
Diet	12	60		
More education	2	10		
Monitor my blood sugar	1	50		
Exercise more	4	20		
Control my calorie intake	1	5		

Category	Frequency	Percentage	Mean	SD
Do you believe you can recognize low/high blood sugar?			1.5	.5
Yes	10	50		
No	10	50		

Outcome Measures

Three outcome measures determined the effectiveness of the educational initiative: pre/post intervention HgA1c levels, a pre/post intervention knowledge assessment, and a pre/post intervention measurement of self-efficacy. The results of data analysis of all outcomes measured showed improvement and confirmed that this evidence-based educational intervention effectively increased patients' knowledge and self-efficacy for self-management of T2D. The steps are reviewed below with specific dates for each phase.

- Participants' medical records were audited for identification of patients age 35 and older with a diagnosis of T2D for at least 2 years, who had missed or cancelled at least one appointment out of four follow-up visits in the last year, and were taking two or more oral antidiabetic medications, as well as having had a HgbA1c of 7% or higher from January 21, 2019, to January 31, 2019.

- Patients were approached during their regular scheduled follow-up clinic visits to participate in the QIP project. Once agreed, they signed informed consents from February 4, 2019, to February 15, 2019.

- Prior to participants receiving the educational session, HgbA1c serum levels were drawn and participants completed the Self-Care Inventory-Revised knowledge assessment and the Self-Care Efficacy for Diabetes survey from February 18, 2019, to February 28, 2019.

- Thirty to 60 minutes of personalized, individual educational sessions were conducted by the principal investigator with each project participant from March 4, 2019, to March 22, 2019.

- Chart audits were completed for documentation of improved HgbA1c levels, participants seeking refills on antidiabetic medications, and for participants who kept at least one appointment out of four follow-up visits in the last year from March 25, 2019, to March 29, 2019.

- Individual appointments were scheduled again at 2 to 3 months postintervention to measure the same participants' HgbA1c serum levels and administer the Self-Care Inventory-Revised and the Self-Efficacy for Diabetes assessments from April 1, 2019, to April 8, 2019.

Data Analysis

Data were collected and entered into SPSS, Version 24 for Windows. Descriptive statistics were calculated for demographic information, pre/post HgA1c levels, and the pre/post Self-Care Inventory-Revised and pre/post Self-Care Efficacy for Diabetes surveys. Cronbach's alpha was used to measure the internal consistency or reliability of the questionnaires in data analysis and outcomes or how well the questionnaire items were related to each other (Bonett & Wright, 2015). Participants' HgbA1c levels in

conjunction with paired *t* tests to compare the results of the two surveys for evaluation of the outcomes of the QIP educational intervention.

HgA1c Data Analysis

Project participants' preeducational program HgA1c and posteducational program HgA1c values were collected. Changes between the two periods were compared and reported in percentages (Table 3). The analysis indicated a decrease in the HgA1c levels from -0.2 to -1.3%, except for Participant 15, who had an increase of .3%.

A paired-samples *t* test was conducted with the HgA1c levels before and after education. As Table 4 shows, the difference was found highly significant ($p < .000$). The difference in patients' HgA1c levels before and after the educational program was highly significant ($p < .000$). Figure 2 displays two histograms of the results.

Self-Care Inventory-Revised Data Analysis

The SCI-R is an evidence-based tool consisting of 15 questions on a 5-point Likert scale. The values are *never* (1), *rarely* (2), *sometimes* (3), *usually* (4), and *always* (5). Cronbach's alpha was calculated at .868 (Table 5). The SCI-R was used to assess diabetic participants' knowledge of diabetes treatment management.

Twenty participants *(N = 20)* completed the SCI-R pre-and postquestionnaires (with the exception of items 3 and 15, which did not apply). Item analysis was conducted for the means pre- and posteducational program (Table 6). For the pretest, the means for responses ranged from 1.35 to 2.50, indicating responses between *never, rarely,* and *sometimes.* For the posttest, the mean responses ranged from 4.60 to 5.00, indicating responses between *usually* and *always.* Participants' self-care activities and behaviors improved by 3.25 to 2.50 values from pre- to posteducational program.

Table 3

Participants' HgA1c Levels Pre- and Posteducational Intervention

Participant Number	Pre-HgA1c Values (%)	Post-HgA1c Values (%)	Change (%)
1.	7.1	5.8	-1.3
2.	7.2	6.3	-0.9
3.	8.1	7.6	-0.5
4.	7.2	7.0	-0.2
5.	7.8	6.9	-0.9
6.	8.3	7.9	-0.4
7.	8.6	8.0	-0.6
8.	7.9	7.5	-0.4
9.	8.7	8.0	-0.7
10	8.6	8.0	-0.6
11.	8.6	8.2	-0.4
12.	7.2	7.0	-0.2
13.	7.4	7.0	-0.4
14.	8.3	7.9	-0.4
15.	8.1	8.4	+ 0.3
16.	8.3	7.8	-0.5
17.	7.6	6.9	-0.7
18.	7.5	6.8	-0.7
19.	7.8	7.3	-0.5
20.	7.9	7.1	-0.8

Table 4

HgA1c Paired-Samples t Test Results

				95% Confidence Interval of the Difference				
	Mean	SD	St. Error Mean	Lower	Upper	*t*	*df*	Sig. (2-tailed)
Pre/Post-HgA1c	.5400	.3267	.0731	.3871	.6929	7.3292	19	.000*

p < .000.

Pre HgbA1C

Mean = 7.91
Std. Dev. = .528
N = 20
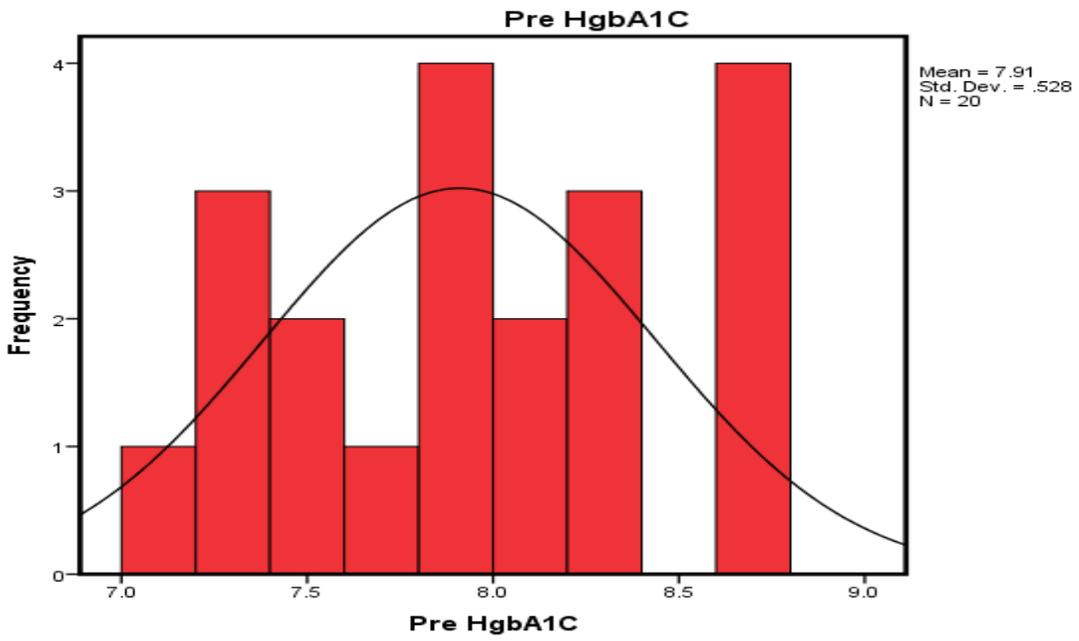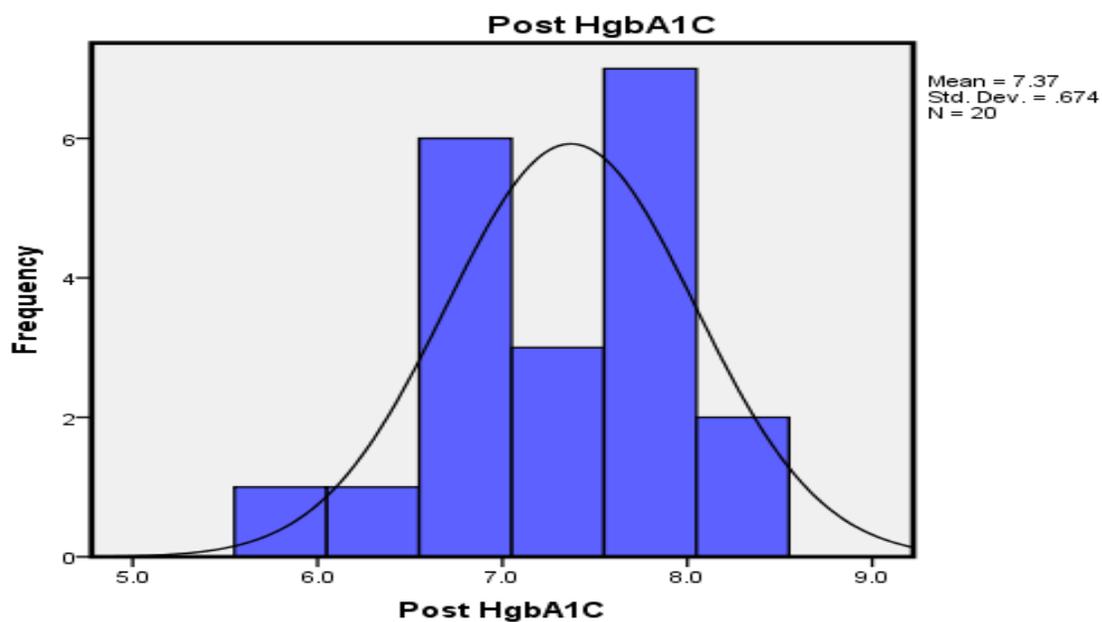
Figure 2. Differences in participants' HgA1c scores before and after education.

Table 5

SCI-R Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
.868	.886	13

A paired-samples *t* test was conducted with the participants' SCI-R scores before and after education. As Table 7 shows, the difference was found highly significant on all 13 items ($p < .000$). There was a statistically significant ($p < .000$) difference between the mean pretest scores and the mean posttest scores. These results suggest that participants' adherence to diabetes treatment management increased significantly after the educational program.

Table 6

Self-Care Inventory-Revised Pre- and Posteducation Item Analysis (N = 20)

	Pretest		Posttest	
	Mean	SD	Mean	SD
1. Check blood glucose with monitor	1.80	.523	5.00	.000
2. Record blood glucose resultsa	1.35	.587	4.90	.308
4. Take correct dose of diabetes pills or insulin	2.50	.946	4.95	.224
5. Take diabetes pills or insulin at the right time	2.15	.812	4.90	.308
6. Eat the correct food portions	1.75	.910	5.00	.000
7. Eat meals/snacks on time	1.60	.940	5.00	.000
8. Keep food records	1.55	.887	4.80	.410
9. Read food labels	1.55	.887	4.75	.444
10. Treat low blood glucose with just the recommended amount of carbohydrate	2.35	.671	4.95	.224
11. Carry quick acting sugar to treat low blood glucose	2.10	.852	4.95	.224
12. Come in for clinic appointment	2.20	.834	4.95	.224
13. Wear a Medic Alert ID	1.50	.135	4.60	.503
14. Exercise	1.65	.745	4.90	.308

aItems 3 and 15 were omitted because they did not apply to project participants.

Table 7

Self-Care Inventory-Revised Paired-Samples t Test Results

			Paired Differences					
				95% Confidence Interval of the Difference				
Question	Mean	SD	St. Error Mean	Lower	Upper	*t*	*df*	Sig. (2-tailed)
1. Check blood glucose with monitor	-3.20	.523	.117	-3.45	-2.96	-27.4	19	.000*
2. Record blood glucose resultsa	-3.55	.686	.153	-3.87	-3.23	-23.1	19	.000
4. Take correct dose of diabetes pills	-2.45	.999	.223	-2.92	-1.98	-11.0	19	.000
5. Take diabetes pills at right time	-2.75	.786	.176	-3.12	-2.38	-15.6	19	.000
6. Eat the correct food portion	-3.25	.910	.204	-3.68	-3.82	-16.0	19	.000
7. Eat meals/snacks	-3.40	.940	.210	-3.84	-2.96	-16.2	19	.000
8. Keep food records	-3.25	1.02	.228	-3.72	-2.77	-14.3	19	.000
9. Read food labels	-3.20	1.00	.225	-3.67	-2.27	-14.2	19	.000
10. Treat low blood glucose with just the recommended amount of carbohydrates	-2.60	.754	.169	-2.95	-2.25	-15.4	19	.000
11. Carry quick-acting sugar to treat low blood glucose	-2.85	.875	.196	-3.26	-2.44	-14.6	19	.000
12. Come in for clinic appointment	-2.75	.786	.176	-3.12	-2.23	-15.6	19	.000

Question	Mean	SD	St. Error Mean	Lower	Upper	t	df	Sig. (2-tailed)
13. Wear a Medic Alert ID	-3.10	1.59	.355	-3.84	-2.36	- 8.7	19	.000
14. Exercise	-3.25	.851	.190	-3.65	-2.85	-17.9	19	.000

_a_Items 3 and 15 were omitted because they did not apply to project participants.

*_p_ < .000.

Self-Efficacy for Diabetes Data Analysis

The SED is an 8-item scale used to evaluate the confidence of individuals related to their diabetes self-care management practices. This questionnaire consisted of three questions regarding diet, two questions regarding exercise, two questions regarding blood glucose monitoring, and one question regarding follow-up visit with the medical provider. The range of responses is from *not at all confident* (1) to t*otally confident* (10). No alpha was reported by the author of the tool. As Table 8 shows, postintervention, Cronbach's alpha for the SED was .917.

Table 8

SED Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	Number of Items
.917	.919	8

Twenty participants (*N* = 20) completed the SED pre- and postquestionnaires. Item analysis was conducted for the means pre- and posteducational program. Table 9 shows the results. It can be seen that for the pretest, the means for responses ranged from 2.95 to 3.20, indicating responses slightly higher than *not confident at all* (1). For the posttest, the mean responses ranged from 9.75 to 9.95, indicating responses very close to *totally confident* (10). That is, participants' self-efficacy improved by 6.80 to 6.75 values from the preeducational program to the posteducational program.

A paired-samples *t* test was conducted with the SED scores before and after education. Table 10 indicates that the difference was found highly significant on all items (*p* < .000). There was a statistically significant (*p* < .000) difference between the mean pretest scores. These results suggest that participants' adherence to diabetes treatment management increased significantly after the education.

As Table 10 shows, a statistically significant difference was found (*p* < .000) between the pretest scores and the posttest scores. These results indicated that the education was effective in increasing participants' self-confidence in performing specific activities to effectively manage their T2D.

Discussion of Outcomes

An educational initiative was implemented at a medical center with 20 T2D participants. They were provided with diabetes self-care management education based on the American Association of Diabetes Educators recommendations for diabetic patients. Self-care education was measured by comparing participants' pre- and posteducation HgA1c results, their pre- and posteducation knowledge and behaviors with the SCI-R, and their confidence in performing diabetes management activities with the SED.

Table 9

Self-Efficacy for Diabetes Pre-and Posteducation Item Analysis (N = 20)

	Pretest		Posttest	
Questions	Mean	SD	Mean	SD
1. How confident do you feel that you can eat your meals every 4 to 5 hours daily, including breakfast?	2.95	.51	9.95	.22
2. How confident do you feel that you can follow your diet when you have to prepare or share food with other people who do not have diabetes?	3.10	.71	9.80	.41
3. How confident do you feel that you can choose the appropriate foods to eat when you are hungry (for example, snacks)?	2.95	.75	9.90	.30
4. How confident do you feel that you can exercise 15 to 30 minutes, 4 to 5 times a week?	3.05	.75	9.90	.30
5. How confident do you feel that you can do something to prevent you blood sugar level from dropping when you exercise?	3.20	.61	9.75	.44

	Pretest		Posttest	
Questions	Mean	SD	Mean	SD
6. How confident do you feel that you can do something to prevent your blood sugar level goes higher or lower than it should be?	3.10	.85	9.95	.33
7. How confident do you feel that you can judge when the changes in your illness mean you should visit the doctor?	3.15	.81	9.90	.30
8. How confident do you feel that you can control your diabetes so that it does not interfere with the things you want to do?	3.05	.60	10.00	.00

Table 10

Self-Efficacy for Diabetes Paired-Sample t Test Results

| | Paired Differences | | | | | | | |
| | | | | 95% Confidence Interval of the Difference | | | | |
Item: How confident do you feel that . . .	Mean	SD	St. Error Mean	Lower	Upper	*T*	*Df*	Sig. (2-tailed)
1. You can eat your meals every 4-5 hours every day, including breakfast?	-7.00	.459	.103	-7.21	-6.79	-68.2	19	.000*
2. Follow your diet when you have to prepare or share food with other diabetics?	-6.70	.801	.679	-7.08	-6.33	-37.4	19	.000
3. You can choose appropriate foods when hungry?	- 6.95	.759	.170	-7.31	-6.66	-40.9	19	.000
4. You can exercise 15 to 30 minutes, 4 To 5 times a week?	-6.85	.745	.167	-7.20	-6.50	-41.1	19	.000
5. You can do something to prevent blood sugar level from dropping when you exercise?	-6.55	.826	.185	-6.94	-6.16	-35.5	19	.000

Paired Differences

95% Confidence Interval
of the Difference

Item: How confident do you feel that . . .	Mean	SD	St. Error Mean	Lower	Upper	*T*	*Df*	Sig. (2-tailed)
6. You know what to do when your blood sugar level goes higher or lower than it should be?	-6.85	.933	.209	-7.73	-6.64	-32.8	19	.000
7. You can judge when the changes in your illness mean you should visit the doctor?	-6.75	.910	.204	-7.18	-6.32	-33.2	19	.000
8. You can control your diabetes so that it does not interfere with the things you want to do?	-6.95	.605	.135	-7.72	-6.67	-51.4	19	.000

*p < .000.

During the evaluation process, participants' pre- and post-HgA1c, SCI-R, and

SED scores were compared with paired-samples *t* tests. The results indicated that

participants improved significantly in the positive direction. Participants' post-HgA1c

levels improved by .54 from a mean of 7.910 to 7.370. Participants' SCI-R scores and

SED scores improved significantly after the educational program (*p* < .000). These results

indicate unequivocally that the diabetes educational program improved patients' HgA1c

levels, knowledge of and adherence to T2D management, and self-efficacy in carrying out their self-management.

Project Strengths and Limitations

Strengths

Several strengths were evident in this QIP. First, participants' eagerness to learn about the disease, importance of antidiabetic medications, and healthy behaviors to improve their self-care activities and health outcomes were major strengths. As a result, project participants were cooperative with all aspects of the educational initiative and motivated to change their lifestyles to stay healthy. Second, the positive attitudes of the medical director and staff nurses to promote optimum health outcomes to enhance diabetes self-care management strengthened this DNP project. Third and most importantly, the positive outcomes of clinical and statistical significance indicated the importance and value of this QIP.

Limitations

Three limitations are acknowledged for this project. First, the sample size was small. Second, the project and educational sessions took place in a relatively short time frame. Third, the QIP took place at one medical facility in a single geographical area. Therefore, generalizations to larger groups of Hispanic T2D patients in other areas could not be made (Jansà et al., 2013). Nevertheless, the outcomes of this educational initiative showed promise in the promotion of similar educational programs for adherence to self-care management practices in patients with uncontrolled T2D.

Implications for Nursing Practice

The American Association of Colleges of Nursing (2014) presented eight

Essentials of Doctoral Education for Advanced Nursing Practice to be taken into account

in any DNP project. These components apply specially to practice-focused projects. The

six most applicable components are discussed below with reference to the current QIP.

Scientific Underpinnings for Practice

The essential component of scientific underpinnings for practice of the *Essentials*

of American Association of Colleges of Nursing (2014) is a conceptual framework for

advanced nursing practice. The evidence-based QIP was undertaken to deliver to T2D

patients a better understanding of the disease process and methods for them to control

their illness. Hieronymus and Fowlkes (2015) observed that T2D patients require a

lifetime for learning of healthy self-care practices. This project was developed from the

scientific research of previous studies that demonstrated the value and relevance of

education for T2D patients. Outcomes from this project demonstrated that the educational

initiative was effective in lowering participants' HgA1c levels, increasing their

knowledge of and compliance with their diabetes self-care management practices, and

increasing their confidence in their abilities to follow the recommended regimens,

resulting improved health outcomes.

Organizational and Systems Leadership

The organizational and systems leadership component of the American

Association of Colleges of Nursing (2014) *Essentials* promotes high quality and safe

patient care. In this QIP, the principal investigator assumed a leadership role for effective

implementation and used communication skills keyed to the participants. These factors

were crucial for the excellent project outcomes. The health disparities in the Hispanic participants were addressed in relation to health promotion and disease self-care management therapy. At all individualized educational sessions, the principal investigator verified through participants' feedback and return demonstrations that the participants understood all materials and instructions and followed through with the recommendations for T2D self-management.

Information Systems and Patient Care Technology

The component of information systems and patient care technology of the American Association of Colleges of Nursing (2014) *Essentials* was used throughout this project. At the medical center, the principal investigator and staff used information systems and technology to deliver and synchronize patient care. Technology was used through different settings to evaluate patient care outcomes and communicate with other healthcare professionals and patients. Furthermore, information technology systems were used during this project to gather evidence-based materials to educate the participating diabetic participants on self-care management practices to improve their health outcomes.

Healthcare Policy for Advocacy in Healthcare

The component of healthcare policy for advocacy in healthcare of the American Association of Colleges of Nursing (2014) *Essentials* was important for this project. For project participants, T2D and its multitude of complications were primarily influenced by knowledge deficit of diabetes self-care management practices. Clinical practice policies at the medical center played vital roles in participants' health improvements, as demonstrated by the pre-/posteducation results. Because of these significant results, essential to this QIP was advocating for diabetic patients to improve their health and

quality of life. Dissemination of evidence from practice-focused projects, such as the current one can help nurses advocating for changes in healthcare policies to include fundamental and necessary education for T2D patients as part of treatment to self-manage their disease.

Interprofessional Collaboration

The component of interprofessional collaboration of the American Association of Colleges of Nursing (2014) *Essentials* helped produce successful outcomes in this project. Essential was collaboration of the principal investigator with the interprofessional team of a medical director provider, an office manager, and two medical assistants to inspire and motivate diabetic patients to adopt healthy practices for better health outcomes. The collaboration between the principal investigator and the interprofessional team was important not only for the success of this project but also to provide good quality care, improve participants' health, and lower their risks of diabetes complications. In addition, the promotion of shared decision-making between patients and healthcare professionals was a core element of the collaborative care, leading to increase in participants' knowledge and adherence to diabetes self-care management practices.

Advanced Nursing Practice

The component of advanced nursing practice of the American Association of Colleges of Nursing (2014) *Essentials* was a primary factor for the principal investigator in this project. This essential component calls for the clinical prevention of illness throughout the population health to improve the health status of the nation (American Association of College of Nursing, 2014). Patient education about medications, disease

progression, blood glucose monitoring, diet, exercise, and many other factors of self-management were very important in this population of Hispanic T2D participants because lack of knowledge and methods is one of the significant contributing elements to poor adherence.

Future Research

Findings from this EBP project indicated that the diabetic education given to project participants was effective in lowering their HgA1c levels and improving their adherence to their diabetes self-care management practices. Diabetes mellitus care requires a lifetime of learning and relearning (Hieronymus & Fowlkes, 2015). This quantitative EBP project supports previous research studies on the effectiveness of educational initiatives for T2D (ADA, 2014, 2016a, 2016b; Asante 2013; Basu & Garg, 2017; Beck et al., 2017; Berry et al., 2015; Bonilla & Grant, 2015; Chavan et al., 2015; Cheng et al., 2017; Fortmann et al., 2015; Gonzalez-Zacarias et al., 2016; Jansà et al., 2013; Jansiraninatarajan, 2013; Mehta et al., 2015; Moore & Lavin, 2013; Parujuli et al., 2014; Pillaya et al., 2016; Tavakol-Moghadam et al., 2018).

This project should be replicated with patient populations of Hispanic and other ethnicities over longer time periods and in different geographic locations. In addition, qualitative studies with these populations could be implemented for understanding of both patients' and nursing practitioners' impressions, reflections, and insights about the educational initiatives. All such studies would further help to improve practice and deliver to patients with T2D greater management of their disease and better quality of life.

Conclusion

Twenty Hispanic patients with T2D participated in this DNP project. Education materials emphasizing the importance of taking antidiabetic medications, glucose monitoring, being active, healthy eating habits, and follow-up visits were used to stimulate participants' learning. Participants' pre- and post-HgA1c, pre- and post-SCI-R, and pre- and post-SED evaluation outcomes were compared with paired-samples t tests.

The findings showed that the educational initiative was highly effective in lowering T2D participants' HgA1c levels as well as increasing their knowledge of, adherence to, and confidence in their and self-care management practices. The management of this chronic disease and its complications requires continuous education and skill-building by patients to perform successful day-to-day self-care management practices. This DNP project has added to the current body of knowledge regarding educational interventions for patients with T2D to promote their positive self-care management practices and help them to manage their disease and increase their quality of life.

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Appendix A

Nova Southeastern University IRB Approval

NSU NOVA SOUTHEASTERN UNIVERSITY
Institutional Review Board

MEMORANDUM

To: **Geralde Bridges**

From: **Vanessa A Johnson, Ph.D.,**
Center Representative, Institutional Review Board

Date: **September 4, 2018**

Re: **IRB #: 2018-442; Title, "AN EDUCATION INITIATIVE TO PROMOTE SELF-CARE PRACTICES IN HISPANIC ADULTS WITH TYPE 2 DIABETES"**

I have reviewed the above-referenced research protocol at the center level. Based on the information provided, I have determined that this study is exempt from further IRB review under 45 CFR 46.101(b) (Exempt 2: Interviews, surveys, focus groups, observations of public behavior, and other similar methodologies). You may proceed with your study as described to the IRB. As principal investigator, you must adhere to the following requirements:

1) CONSENT: If recruitment procedures include consent forms, they must be obtained in such a manner that they are clearly understood by the subjects and the process affords subjects the opportunity to ask questions, obtain detailed answers from those directly involved in the research, and have sufficient time to consider their participation after they have been provided this information. The subjects must be given a copy of the signed consent document, and a copy must be placed in a secure file separate from de-identified participant information. Record of informed consent must be retained for a minimum of three years from the conclusion of the study.

2) ADVERSE EVENTS/UNANTICIPATED PROBLEMS: The principal investigator is required to notify the IRB chair and me (954-262-5369 and Vanessa A Johnson, Ph.D., respectively) of any adverse reactions or unanticipated events that may develop as a result of this study. Reactions or events may include, but are not limited to, injury, depression as a result of participation in the study, life-threatening situation, death, or loss of confidentiality/anonymity of subject. Approval may be withdrawn if the problem is serious.

3) AMENDMENTS: Any changes in the study (e.g., procedures, number or types of subjects, consent forms, investigators, etc.) must be approved by the IRB prior to implementation. Please be advised that changes in a study may require further review depending on the nature of the change. Please contact me with any questions regarding amendments or changes to your study.

The NSU IRB is in compliance with the requirements for the protection of human subjects prescribed in Part 46 of Title 45 of the Code of Federal Regulations (45 CFR 46) revised June 18, 1991.

Cc: Linda Evans
William Smith, JD

Appendix B

Letter of Support from Center

Letter of Support

August 22, 2018

Attn: Institutional Review Board/ Capstone Committee

Nova Southeastern University
Health Profession Division
College of Nursing- Doctor of Nursing Practice
3301 College Avenue
Fort Lauderdale, FL 33314

Dear Capstone Committee Members/ IRB

I have read Geralde Bridges' proposal for a capstone project approved to be carried out at ▬▬▬ ▬▬▬▬▬▬▬▬▬▬▬▬▬ I understand that this student is piloting this capstone project to fulfill the requirements for the Doctorate of Nursing Practice at Nova Southeastern University in Fort Lauderdale, Florida.

I understand that the Institutional Review Board at the university is concerned with protecting the confidentiality, privacy, and well-being of research participants. I do not have any concerns about the proposed project titled "An Education Initiative to Promote Self-care Practices in Hispanic Adults with Type 2 Diabetes" based on conversations and discussions with Geralde Bridges. Her project has the potential to improve patient care and outcomes through the evidences of best practices. After reviewing the project proposal, I fully support and have approved of the project, including recruitment of participants and data collection through this primary care center.

Should you have additional questions, you may contact me at ▬▬▬▬▬▬

Sincerely,

Appendix C

Participant Informed Consent

General Informed Consent Form
NSU Consent to be in a Research Study Entitled

"An Educational Initiative to Promote Self-care Practices in Hispanic Adults with

Type 2 Diabetes"

<u>Who is doing this research study?</u>

College: Nova Southeastern University

                      Ron and Kathy Assaf College of Nursing

Principal Investigator: Geralde Bridges, RN, MSN, ARNP

Dissertation Chair: Dr. Linda Evans, PhD, RN

Site Information:

████████████████

████████████

█████████████

██████████████████

██████████

Funding: Unfunded

<u>What is this study about?</u>

This is a research study, designed to test and create new ideas that other people can use. The risk of diabetes is 66% higher in Hispanic adults compared to non-Hispanics. The prevalence of Type 2 diabetes (T2D) is escalating in Hispanics and poor T2D self-care practices can lead to poor health outcomes, diminished quality of life, and increased healthcare costs. The purpose of this research study is to provide health information to Hispanics aged 35 and older diagnosed with T2D to help them with their self-care management behaviors.

<u>Why are you asking me to be in this research study?</u>

You are being asked to be in this research study because you are a Hispanic patient with diabetes for at least two years, are over the age of 35, take two or more medications to treat your diabetes, and have missed at least one clinic appointment over the last year. This study will include about 20 participants.

<u>What will I be doing if I agree to be in this research study?</u>

If you agree to participate in this study, you will attend a 45-60 minutes session that will teach you about caring for yourself and your diabetes. At the beginning of the session, you will be asked to complete 3 questionnaires about you and how you take care of your diabetes. You will also have your HgA1C value checked. During the session, you will receive information to help you care for yourself and your diabetes specific to your medications, your diet, your daily exercise, the monitoring of your blood glucose levels, ways to help you cope with your disease, and the importance of seeing your healthcare provider regularly.

At your 2-3-month follow-up appointment with your healthcare provider, you will again be asked to complete the 3 questionnaires about you and your self-care practices related to your diabetes. You will also have your HgA1C value checked.

Are there possible risks and discomforts to me?

Invasion of privacy and loss of confidentiality are possible risks associated with this study.

What happens if I do not want to be in this research study?

Participation in the research study is voluntary. You will not be penalized and will receive your usual care if you choose not to participate or choose to withdraw from the study after it has begun. If you choose not to continue to participate, or do not return for your follow-up visit to your healthcare provider, any information previously collected may be used in aggregate reporting and will not be identifiable to you in any way.

What if there is new information learned during the study that may affect my decision to remain in the study?

If new information relating to the study becomes available after you have joined the study, this information will be given to you by the principal investigator. You may have to sign a new Informed Consent Form.

Are there any benefits for taking part in this research study?

This research study has the possibility to increase your knowledge on self-care management of diabetes and the importance of following your doctor's recommendations to improve your blood sugar levels and health.

Will I be paid or be given compensation for being in the study?

There is no cost or compensation for participating in this research study.

How will you keep my information private?

A number will be assigned to you and used during the study. All the paper information collected from you will be secured in a locked drawer in the provider's office accessible only to the principal investigator. All your electronic information will be stored and secured on the project lead's personal computer. The project lead will be the only user of the computer, which has a secured password only. The computer is set to turn off after one minute of inactivity. Once the study is completed, your information will be kept for 36 months and then destroyed. The paper records will be shredded and the hard drive containing your electronic data will be erased from the storage device.

Whom can I contact if I have questions, concerns, comments, or complaints?

If you have questions now, feel free to ask the principal investigator. If you have more questions about the research, your research rights, or have a research-related injury, please contact:

Primary contact:

Geralde Bridges, RN, MSN, ARNP can be reached at ▮▮▮▮▮▮▮▮

Research Participants Rights

For questions/concerns regarding your research rights, please contact:

Institutional Review Board

Nova Southeastern University

(954) 262-5369 / Toll Free: 1-866-499-0790

IRB@nova.edu

You may also visit the NSU IRB website at www.nova.edu/irb/information-for-research-participants for further information regarding your rights as a research participant.

Research Consent & Authorization Signature Section

Voluntary Participation - You are not required to participate in this study. In the event you do participate, you may leave this research study at any time. If you leave this research study before it is completed, there will be no penalty to you, and you will not lose any benefits to which you are entitled.

If you agree to participate in this research study, sign this section. You will be given a signed copy of this form to keep. You do not waive any of your legal rights by signing this form.

SIGN THIS FORM ONLY IF THE STATEMENTS LISTED BELOW ARE TRUE:

- You have read the above information.
- Your questions have been answered to your satisfaction about the research.

Adult Signature Section

I have voluntarily decided to take part in this research study.

| Printed Name of Participant | Signature of Participant | Date |

| Printed Name of Person Obtaining Consent and Authorization | Signature of Person Obtaining Consent & Authorization | Date |

Appendix D

Letter of Permission to Use Pender's Theoretical Model

O7/16/19

Nola J. Pender, PhD, RN, FAAN

Professor Emerita

University of Michigan School of

Nursing 400 North Ingalls Building

Ann Arbor, MI 48109-5482

Telephone: (815) 436-9946

Fax: (815) 609-0560

Dear Dr. Nola J. Pender

I am a doctoral student in the Doctor of Nursing Practice Program at the Nova

Southeastern University in West Palm Beach, Florida. I am undertaking an Evidence-

Based Quality Improvement Project and I am asking for your permission to include

the following theory in my project: A copy of the Health Promotion Model Theory.

I will use the Health Promotion Model as a guide to promote positive behaviors

changes in Hispanic patients with type 2 diabetes through a diabetes self-

management education (DSME) program. A copy of the Health Promotion

Model table retrieved from:

htt://currentnursing.com/nursing_theoryhealth_promotion_model.html will be

placed in the theory framework section in my project entitled: "An

Educational Initiative to Promote Self-Care Practices in Hispanic Adults with Type 2 Diabetes."

Please indicate your approval of this request by signing below where it is indicated and email back to me as soon as possible at gb749@mynsu.nova.edu. Your authorization by signing this letter will also confirm that you own the copyright to the above-described material. Please let me know if there is a fee for using the Health Promotion Model Theory.

Sincerely,

Geralde Bridges, RN, SN, ANP

██████████████████

██████████████████

████████████████

██████████

For copyright owner use:

You have my permission to use the Health Promotion Model and reproduce it in publications given proper credit. Good luck in your doctoral work! Wishing You Good Health

Nola J. Pender

Appendix E

AADE7 Standards for Diabetes Self-Care Management Education

1. Healthy eating - Simple methods of teaching diabetic patients about healthier choices or alternatives to help improve glucose control and weight loss.

2. Being Active- Incorporating physical activity into their lifestyles.

3. Monitoring - Getting patients to check their glucose levels as ordered by the provider can give them vital information about their diabetes management.

4. Taking medications - Providers often assume that prescribed medications are taken properly, but one of the first questions to ask patients are when and how do you take your medications.

5. Problem solving - Some patients encounter problems with their diabetes control and diabetes can increase the risk for developing other health problems. Patients can quickly learn what can affect their blood glucose levels if you understand the risks. With that information, they can take actions to correct high or low blood glucose by modifying their nutrition, activity, or medications.

6. Reducing risks - Some risk decreasing behaviors are to encourage and remind patients to get routine eye exam and to inspect their feet daily because having diabetes increases the risk for developing other health problems.

7. Healthy coping - Apply coping management strategies such as engaging in support groups, counseling, or improving provider-patient communication can improve patients' ability to cope with the chronic condition, resulting in developing personal strategies to encourage healthy behavior change.

The AADE7 Self-Care Behaviors provide the essential framework to confidently motivating diabetes education practice, allowing for benchmarking, setting standards and universal measurement of the effects of diabetes educators and diabetes self-management education (*Diabetes Care*, 2014, *37* [Supplement 1], S144-S153. http://dx.doi.org/10.2337/'dcl4-S 144).

Appendix F

Diabetes Education Kit Materials

AADE7™ SELF-CARE BEHAVIORS
TAKING MEDICATION

There are several types of medications that are often recommended for people with diabetes. Insulin, pills that lower your blood sugar, blood pressure medication, cholesterol-lowering medication, or a number of others may work together to help you lower your blood sugar levels, reduce your risk of complications and help you feel better.

Your medications come with specific instructions for use—and they can affect your body differently depending on when and how you take them. It may take a while to figure out which medicines work best with your body. So it's important for you to pay attention to how you feel and how your body reacts to each new medicine or treatment. It's up to <u>you</u> to tell your pharmacist, doctor, nurse practitioner, or diabetes educator if you've noticed any side effects.

It's important to know the names, doses and instructions for the medications you're taking, as well as the reasons they are recommended for you.

REMEMBER TO:

» **Ask your doctor, nurse practitioner or pharmacist** why this medication was recommended for you.

» **Ask your diabetes educator** to help you fit your medication routine into your daily schedule. Be sure to bring all medications or labels with you when you go to health appointments.

» **Ask a family member** to go with you to an appointment and take notes about any medication instructions. Or, ask someone to remind you to take your medications if you have difficulty remembering to take them.

DID YOU KNOW?

Some over-the-counter products, supplements, or natural remedies can interfere with the effectiveness of your prescribed medicines. Tell your diabetes educator about ANY supplements you are taking so that he/she can make the best recommendations for your care.

TRUE OR FALSE?

When you inject insulin, you need to rotate your injection sites.

TRUE. If you inject insulin in the same spot every time, your tissue can become damaged and won't absorb insulin as well. Be sure to rotate your injection sites between the fattier parts of your upper arm, outer thighs, buttocks, or abdomen.

💬 Word Wall

INSULIN:
A hormone that helps the body use glucose (sugar) for energy

SIDE EFFECT:
An effect that a drug has on your body that it is not intended (i.e. diarrhea, nausea, headache)

QUICK TIPS

If you often forget to take your medication, try to remind yourself by linking it to a specific activity—like watching the news every night or brushing your teeth—or by setting an alarm on your watch or cell phone.

Take a pen and some paper with you to your healthcare visit and take notes when your provider tells you about your medicine.

AADE American Association of Diabetes Educators
© 2017, American Association of Diabetes Educators, Chicago, IL

Supported by an educational grant from Eli Lilly and Company.

ACTIVITIES

How have your medications helped you reach your blood sugar levels?

_____

What is the easiest way for you to remember to take your medications as prescribed?

_____

Name one of your medications.

How much are you supposed to take?

When are you supposed to take it and how often?

Why do you have to take this medication?

What are some of the possible side effects?

What are you supposed to do if you experience side effects?

Anything else you need to know?

What do you do if you forget to take this medication?

*Repeat this exercise for every medication. Be sure to ask your pharmacist or diabetes educator if you do not know the answers.

AADE7™ SELF-CARE BEHAVIORS
MONITORING

Checking your blood sugar levels regularly gives you vital information about your diabetes control. Monitoring helps you know when your blood sugar levels are on target. It helps you make food and activity adjustments so that your body can perform at its best. It takes some time and experience to figure out how your daily activities and actions affect your blood sugar.

Your diabetes educator can help you learn:

» How to use a blood sugar (glucose) meter.

» When to check your blood sugar and what the numbers mean.

» What to do when your numbers are out of your target range.

» How to record your blood sugar results.

Checking your blood sugar is an important part of diabetes self-care, but monitoring your overall health includes a lot of other things too, especially when you have diabetes. You and your healthcare team will also need to monitor your:

» Long-term blood sugar control—A1C, eAG

» Cardiovascular health—blood pressure, weight, cholesterol levels

» Kidney health—urine and blood testing

» Eye health—dilated eye exams

» Foot health—foot exams and sensory testing

DID YOU KNOW?

The American Diabetes Association recommends an A1C target below 7% (an eAG of 154 mg/dl); the American Association of Clinical Endocrinologists recommends less than 6.5% (an eAG of 140 mg/dl).

TRUE OR FALSE?

If you want to see how your body responds to your meal, wait 2 hours after eating to check your blood sugar levels.

TRUE. Your blood sugar rises in response to what you've eaten. It takes about 2 hours for the numbers to reflect the full rise.

Word Wall

METER:
A small device that is used to check blood sugar levels

LANCET:
A small needle used to get a blood sample

A1C:
A test that measures your average blood sugar levels during the past 2-3 months

ESTIMATED AVERAGE GLUCOSE (eAG):
The number of the A1C test changed into mg/dl like the blood sugar levels shown on your glucose meter

QUICK TIPS

Wash your hands with soap and water and dry them thoroughly before checking your blood sugar. Substances on your skin (like dirt, food, or lotion) can cause inaccurate results.

When traveling, keep your supplies with you. Advise security personnel that you are carrying diabetes supplies.

If you have trouble affording the test strips, call the toll-free number on the back of your meter to see if coupons are available, or ask your diabetes educator about other resources.

ACTIVITIES

Remember, the way you feel does not always reflect what your blood sugar is doing. The only way you know is to check your numbers!

» Check your blood sugar levels as directed to share with your doctor or diabetes educator.
» Follow a schedule, keep a record of your daily levels, and use the numbers to make decisions about your diabetes care.
» Check your blood sugar levels if you think you're getting sick.

When you check your blood sugar levels:

» Keep a record and bring it to every health appointment.
» Try to identify patterns when your blood sugar goes up or down.

If your numbers aren't at goal, don't get down. This is useful information that can help your healthcare provider match your treatment to your needs.

If you develop a regular schedule and follow it closely, you'll learn how your blood sugar levels affect how you feel. You'll start to recognize unhealthy blood sugar trends before they get out of control.

What is your typical day like, in terms of eating, activity, and diabetes medication? *(Record it in the space below)*

	Activity	Eating	Medication
6:00 a.m.			
7:00 a.m.			
8:00 a.m.			
9:00 a.m.			
10:00 a.m.			
11:00 a.m.			
12:00 p.m.			
1:00 p.m.			
2:00 p.m.			
3:00 p.m.			
4:00 p.m.			
5:00 p.m.			
6:00 p.m			
7:00 p.m.			
8:00 p.m.			
9:00 p.m.			
10:00 p.m.			

AADE American Association of Diabetes Educators

BEING ACTIVE

Word Wall

Being active is not just about losing weight. It has many health benefits like lowering cholesterol, improving blood pressure, lowering stress and anxiety, and improving your mood. If you have diabetes, physical activity can also help keep your blood sugar levels closer to normal and help you keep your diabetes in control.

It can be difficult to find the time or the motivation to start an exercise program. Everyone's physical abilities and schedules are different; choose the best ways to fit physical activity into your daily life—whether it's walking to work, doing chair exercises or working out at the gym.

The important thing to remember is to choose activities that you enjoy doing and to set goals that are realistic.

Your healthcare provider can help you design an activity plan that works for you.

DID YOU KNOW?

Breaking activity into three 10 minute sessions throughout the day is as good as one 30 minute session. This can help you fit exercise into your schedule.

TRUE OR FALSE?

You are not working out hard enough if you can carry on a conversation.

FALSE. You should be able to talk when doing an activity. If you can't, then your body is working too hard and you need to slow your pace.

EXERCISE (OR PHYSICAL ACTIVITY):

Activities that get your body moving and help you stay healthy

CARDIO:

Exercise that raises your heart rate

RESISTANCE TRAINING:

Activities that help you build muscle and strength

QUICK TIPS

Any amount of physical activity is better than none at all. Making physical activity part of your daily lifestyle burns calories even if it's not part of a structured plan.

Even if you are inactive and out of shape now, you can improve your health by moving just a little more. Take small steps to add more movement into your daily lifestyle. In time, you will find that you are stronger and will be able to move even more!

*Check your glucose before and after physical activity to learn how **your** body responds.*

ACTIVITIES

ASK YOURSELF

What's your all-time favorite activity that gets you moving? _____

What stops you from doing it? *(Circle as many as you want)*

- » Not enough time
- » Too out of shape
- » Too tired
- » Not motivated
- » Can't afford it
- » My _____ hurts too much

What can you do to get started doing this activity or working up to it? _____

_____

Pick some other activities that you enjoy doing:

_____
_____
_____
_____
_____
_____

MAKE A FITT PLAN FOR YOUR PHYSICAL ACTIVITY:

- » **Frequency**—How often will you do this activity? Work up to 5 or more days a week.
- » **Intensity**—How hard should you be working? Remember, you should be able to talk, but not sing during an activity.
- » **Time**—How long will you do it? Be realistic. Start with 5 or 10 minutes, and work up to 30 minutes.
- » **Type of Activity**—What will you be doing? Do something you enjoy!

GET CREATIVE!

- » Partner with a friend to find creative ways to be more physically active.
- » Take your dog for a walk or play fetch at the park.
- » Call a friend to go dancing or put on your favorite song and make the living room your personal dance floor.
- » Find a gym buddy to motivate you to stay active.
- » Take the stairs instead of the elevator.
- » If you eat lunch with a co-worker, ask him/her to join you for a short walk after you eat.

AADE American Association of Diabetes Educators

AADE7™ SELF-CARE BEHAVIORS
HEALTHY EATING

If you've just learned that you have diabetes or prediabetes, you probably have a lot of questions about what you can or can't eat. Do you wonder if you can ever have your favorite food again? What happens when you are eating at a restaurant or a friend's house? Do you have to change your whole diet just because you have diabetes?

The answer is NO. There is nothing that you can't eat. You don't have to give up your favorite foods or stop eating at restaurants.

But, it is important to know that everything you eat has an effect on your blood sugar. Learning to eat regular meals, controlling the amount you eat, and making healthy food choices can help you manage your diabetes better and prevent other health problems.

Some skills are more complex, but your diabetes educator or dietitian can help you learn about:

» Counting carbohydrates
» Reading food labels
» Measuring the amount of a serving
» Developing a practical meal plan
» Preventing high or low blood sugar
» Setting goals for healthy eating

Pick one or two of these skills and discuss them with your healthcare provider.

DID YOU KNOW?

There are only 3 main types of nutrients in food: carbohydrates, proteins, and fats. A healthy meal will include all three types.

TRUE OR FALSE:

People with diabetes can't have sugar.

FALSE: Sugar is just another carbohydrate and can fit into a meal plan. Sugary foods, however, do not have the same nutrition as grains or vegetables, and can often be high in fat and calories. It's best to limit sugar-containing foods to small portions, and be sure to count the carbohydrates toward the total recommended in your meal plan.

Word Wall

CARBOHYDRATE (AKA "CARBS"):
One of the three main types of nutrients found in food. Bread, pasta, rice, fruits, vegetables (especially starchy vegetables such as potatoes, corn, peas, dried beans), milk, and sweets are all carbs. Don't forget that carbohydrates can be found in beverages, too.

PORTION:
How much of a food you eat

MEAL PLAN:
A guide for healthy eating developed with your healthcare provider

HYPOGLYCEMIA:
Low blood sugar

HYPERGLYCEMIA:
High blood sugar

QUICK TIPS

Eat breakfast every day. Breakfast helps begin the calorie-burning process that provides you with energy. Include small snacks between meals as part of your daily intake to help keep your body going.

Space your meals throughout the day. Going too long without eating may result in excessive hunger, which can lead to overeating later on. Try to eat every 4 to 5 hours during waking hours.

ACTIVITIES

ASK YOURSELF

When I think about healthy eating, I feel: _____, _____ and
_____ . *(Pick 3 words to fill in the blanks)*

What did you eat for dinner last night? _____

Is there anything you could have done to make your meal healthier? _____

For you, what is the hardest part about healthy eating? _____

What is the best part about healthy eating? _____

How can you overcome these barriers? _____

REMEMBER THAT A HEALTHY MEAL PLAN SHOULD INCLUDE:

» **Complex carbohydrates** such as whole grain bread

» **Fiber,** which is found in beans, whole grains, fruits and vegetables

» **Lean protein,** such as chicken (without skin) or fish

» **Lots of vegetables**—especially the green, leafy ones

» **A limited amount of heart-healthy fats,** such as olive, peanut or canola oil, walnuts, almonds and flax seed

A good first step is to follow the "plate method" of meal planning,
which includes a healthy balance of foods and controlled portions.

Visually divide your plate into 4 sections. For lunch or dinner, fill ½ the plate with non-starchy vegetables (such as: greens, green beans, broccoli, cabbage); ¼ should contain meat or other protein (fish, eggs, low-fat cheeses, cottage cheese, beans or legumes); ¼ contains starch (such as a potato or whole grain bread). On the side, include an 8 ounce glass of low fat milk or a small piece of fruit.

PLAN A HEALTHY DINNER THAT YOU WILL ENJOY IN THE SPACE BELOW.
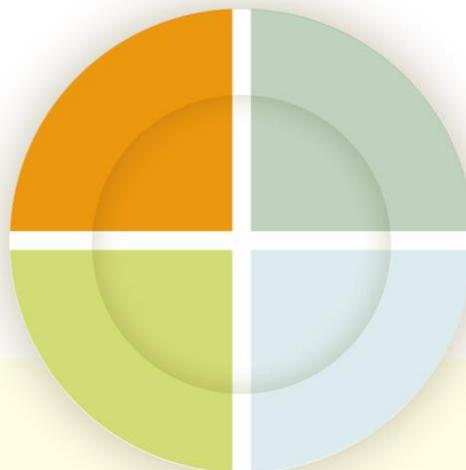
_____
_____
_____
_____
_____
_____
_____

AADE7™ SELF-CARE BEHAVIORS
HEALTHY COPING

Did You Know?

Physical activity can influence your mood. If you are sad, anxious, stressed or upset, go for a walk, stand up and stretch, or take a bicycle ride. Exercise actually increases the chemicals in your brain that help make you feel good!

TRUE OR FALSE?

Nobody wants to hear about your problems. When you are feeling down, you should keep it to yourself.

FALSE. You need to talk about your emotions with friends, family, or your healthcare provider. Sometimes just talking about a problem will help you solve it…and loved ones can help you gain perspective.

QUICK TIPS

Recognize the power of positive thinking. When you are feeling down, think about your successes and feel good about the progress you've made toward a goal—even if it's just a little bit.

Find time to do something pleasurable every day.

Diabetes can affect you physically and emotionally. Living with it every day can make you feel discouraged, stressed or even depressed. It is natural to have mixed feelings about your diabetes management and experience highs and lows. The important thing is to recognize these emotions as normal. Take steps to reduce the negative impact they could have on your self-care.

The way you deal with your emotional lows is called "coping." There are lots of ways to cope with the upsets in your life—and not all of them are good for your health (smoking, overeating, not finding time for activity, or avoiding people and social situations).

However, there are healthy coping methods that you can use to get you through tough times (faith-based activities, exercise, meditation, enjoyable hobbies, joining a support group).

Having a support network is key to healthy coping. Be sure to develop and nurture partnerships in your personal life with your spouse, loved ones and friends. Go to group educational sessions where you can meet and relate to other people going through the same experiences. Build healthy relationships—and remember that you're not alone.

Sometimes, emotional lows can be lengthy and have a more serious impact on your life, health, and relationships. This can be a sign of depression. Tell your diabetes educator if you:

» Don't have interest or find pleasure in your activities.
» Avoid discussing your diabetes with family and friends.
» Sleep most of the day.
» Don't see the benefit in taking care of yourself.
» Feel like diabetes is conquering you.
» Feel like you can't take care of yourself.

AADE American Association of Diabetes Educators

ACTIVITIES

HEALTHY COPING

Name 3 emotions that you feel when you think about your diabetes.			
Who can you talk to when you feel this way?			
Name 3 activities that will help you work through this emotion and feel better.			

What might prevent you from doing these activities?

_____

_____

How can you overcome these obstacles?

_____

_____

AADE American Association of Diabetes Educators

REDUCING RISKS

Word Wall

Having diabetes puts you at a higher risk for developing other health problems. However, if you understand the risks, you can take steps now to lower your chance of diabetes-related complications.

Talk to your diabetes educator and healthcare provider about potential health issues such as kidney damage, nerve damage and vision loss. They can explain why complications happen and how they can be avoided.

But don't rely on your healthcare team to identify areas of concern—you need to play an active role in reducing your risk. Make an effort to learn about complications and consistently track your overall health. You can reduce your risks for several complications by taking these precautions:

» Don't smoke.
» Schedule regular medical checkups and medical tests.
» See an ophthalmologist (eye doctor) at least once a year.
» Keep your feet dry and clean. Look out for redness or sores, and report these to your healthcare team as soon as you find them. If you have trouble seeing the bottom of your feet, ask a family member or friend to help you.
» Be sensitive to your body—recognize when you aren't feeling well, and contact your care team if you need help identifying the problem.

DID YOU KNOW?

Lowering your cholesterol can decrease your risk for stroke, heart attack or other circulation problems.

TRUE OR FALSE?

Controlling your diabetes can help reduce your risk for heart disease.

TRUE. If your blood glucose (sugar) or blood pressure levels are too high for too long, your blood vessels can become sticky. This makes it easier for blood clots to form…which can lead to a heart attack or stroke.

BLOOD PRESSURE:
The amount of pressure that is applied to your arteries when blood is pumped through your body

CHOLESTEROL:
A waxy substance that is in your blood that exists in two types: LDL ("bad") and HDL ("good")

COMPLICATION:
Another health problem that can happen when you have diabetes

HYPERTENSION:
When your blood pressure is higher than 140/90

QUICK TIPS

Keep a Personal Care Record or a wallet card that lists all of the tests you should be regularly getting and the targets for each.

Sleep apnea affects more than half of people with diabetes and most don't know it. If you snore loudly or feel sluggish and tired during the day, ask your diabetes educator to screen you for sleep apnea.

ACTIVITIES

THESE ARE SOME OF THE THINGS YOU CAN DO TO STAY HEALTHY AND PREVENT OTHER PROBLEMS.

FOLLOW YOUR HEALTHY EATING PLAN.
Are you proud of the way you ate today? _____

KEEP ACTIVE
What is your favorite outdoor activity? _____

TAKE MEDICATIONS
Did you take your meds today? _____

MONITOR YOUR BLOOD SUGAR
What was your blood sugar number last time you checked? _____

CHECK YOUR FEET
Any pain or sores on your feet? _____

BRUSH AND FLOSS YOUR TEETH
When was your last dentist visit? _____

CHECK YOUR BLOOD PRESSURE
Do you know what your blood pressure is? _____

DON'T SMOKE
What can help you quit? _____

GET AN EYE EXAM (WHICH INCLUDES DILATING YOUR EYES) AT LEAST ONCE A YEAR
Have you had an eye exam this year? _____

RECOMMENDED TESTS	TARGET LEVELS	FREQUENCY
A1C	Less than 7%	Every 3 to 6 months
Blood Pressure	<140/90, lower targets may be appropriate in certain individuals*	Every visit
Lipids HDL (good cholesterol) LDL (bad cholesterol) Triglycerides	Over 40 (for men); Over 50 (for women) Less than 100 (less than 70 if you have heart disease) Less than 150	At least every year
Eye Exam		Every year
Foot Exam (visual) Foot Exam (with sensory testing)		Every visit to your healthcare provider Every year

AADE American Association of Diabetes Educators
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* Younger individuals, people with albuminuria, and/or individuals with hypertension and one or more additional ASCVD risk factors

Appendix G

Demographic Questionnaire

Instructions: Please provide a response for each of the following questions:

1. **What is your age?** _____

2. **What is you sex?**

Female ○   Male ○

3. **With which racial or ethnic category do you identify?**

Hispanic ○   Non-Hispanic ○

4. **Do you attend your follow-up appointments?** _____

5. **How long have you been diagnosed with type 2 diabetes?** _____

6. **What do you need to change to achieve disease management control? (Diet, Need more education, Monitor better my blood sugar, Exercise, Control better my calorie intake)**
_____

7- **Can you recognize the symptoms of a low/high blood sugar?** _____

Appendix H

Letter of Permission for Use of Self-Care Inventory-Revised (SCI-R)

Letter to the Author of the SCI-R Tool Asking for Permission for its Use

05/17/18

Annette M. La Greca, Ph.D., ABPP

Professor of Psychology and Pediatrics

Department of Psychology

5665 Ponce De Leon Boulevard # 321

University of Miami

Coral Gables, FL, 33146

Dear Dr. La Greca

I am a doctoral student in the Doctor of Nursing Practice Program at the Nova Southeastern

University in West Palm Beach, Florida. I am in the process of undertaking an Evidence- Based

Quality Improvement Project and I am asking for your permission to include the following

measurable tool in my project: A copy of the Self-Care Inventory-Revised Version.

I will use the Self-Care Inventory-Revised Version (SCI-R) Tool to compare a pre-assessment

and post-assessment of patients' adherence to diabetes management according to the questions

listed in the tool. A copy of the tool will be placed in the appendix section in my project entitled: *No Copies*

A Self-Management Education Program to Promote Adherence to Self-care-Management

Practices among T2D Adults.

Please indicate your approval of this request by signing below where it is indicated and return in

to me as soon as possible using the self-addressed envelope. Your authorization by signing this

Annette M La Greca

letter will also confirm that you own the copyright to the above-described material. Please let me know if there is a fee for using this SCI-R tool.

Sincerely,

For copyright owner use:

I own copyright
No publication or
revision of
scale allowed
without
permission.

Annette M L ____

Appendix I

Self-Care Inventory Revised (SCI-R) Questionnaire

This survey measures what you actually do, not what you are advised to do. How have you followed your diabetes treatment plan in the past 1-2 months?

	Never	Rarely	Sometimes	Usually	Always	
1. Check blood glucose with monitor	1	2	3	4	5	
2. Record blood glucose results	1	2	3	4	5	
3. If type 1: Check ketones when glucose level is high	1	2	3	4	5	Have type 2 diabetes
4. Take the correct dose of diabetes pills or insulin	1	2	3	4	5	Not taking diabetes pills or insulin
5. Take diabetes pills or insulin at the right time	1	2	3	4	5	Not taking diabetes pills or insulin
6. Eat the correct food portions	1	2	3	4	5	
7. Eat meals/snacks on time	1	2	3	4	5	
8. Keep food records	1	2	3	4	5	
9. Read food labels	1	2	3	4	5	
10. Treat low blood glucose with just the recommended amount of carbohydrate	1	2	3	4	5	Never had low blood glucose
11. Carry quick acting sugar to treat low blood glucose	1	2	3	4	5	
12. Come in for clinic appointments	1	2	3	4	5	
13. Wear a Medic Alert ID	1	2	3	4	5	
14. Exercise	1	2	3	4	5	
15. If on insulin: Adjust insulin dosage based on glucose values, food, and exercise	1	2	3	4	5	Not on insulin

Appendix J

Self-Efficacy for Diabetes (SED) Questionnaire

SMRC
Self-Management
Resource Center

Self-Efficacy for Diabetes

We would like to know how confident you are in doing certain activities. For each of the following questions, please choose the number that corresponds to your confidence that you can do the tasks regularly at the present time.

1. How confident do you feel that you can eat your meals every 4 to 5 hours every day, including breakfast every day?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

2. How confident do you feel that you can follow your diet when you have to prepare or share food with other people who do not have diabetes?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

3. How confident do you feel that you can choose the appropriate foods to eat when you are hungry (for example, snacks)?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

4. How confident do you feel that you can exercise 15 to 30 minutes, 4 to 5 times a week?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

5. How confident do you feel that you can do something to prevent your blood sugar level from dropping when you exercise?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

6. How confident do you feel that you know what to do when your blood sugar level goes higher or lower than it should be?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

7. How confident do you feel that you can judge when the changes in your illness mean you should visit the doctor?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

8. How confident do you feel that you can control your diabetes so that it does not interfere with the things you want to do?

   not at all confident 1 2 3 4 5 6 7 8 9 10 totally confident

1

Appendix K

Request for Pilot Information

Dear Colleague,

I am an employee at ██████████████████████████████ as well as a

student at Nova Southeastern University. I am currently completing my DNP and have

chosen to initiate a quality improvement project involving: An Education Initiative to

Promote Self-Care Practices in Adults with Type 2 Diabetes." I am interested in receiving

feedback and suggestions from my fellow nurses and nurse practitioners as to the

feasibility of implementing this project in the primary care center. In 1 week, you will

receive a link to a confidential survey that will ask for information and feedback. You

will remain anonymous and will not be contacted further after the research survey is

emailed to you. If you have further questions, I can be reached at ██████████.

Thank you for your support,

Geralde Bridges