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Clinical Practice Guidelines for Type 2 Diabetes Patients

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Walden University

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Walden University

College of Nursing

This is to certify that the doctoral study by

Rajeena Varghese

has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University

2021

Abstract

Clinical Practice Guidelines for Type 2 Diabetes Patients

by

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MS, Walden University, 2014

BS, American Sentinel University, 2011

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

Walden University

November 2021

Abstract

In the United States, Type 2 Diabetes Mellitus (T2DM) is a public health concern and a primary cause of readmissions. Many patient readmissions may be avoided, according to studies, if quality, evidence-based clinical practice guidelines (CPG) are developed and followed using a comprehensive approach. The project site's retrospective analysis of the electronic health record discovered a lack of consistency in following best practice recommendations, as shown by higher readmission rates. The purpose of the project is to create a current evidence-based CPG that nurses can use to educate T2DM patients before being discharged from the hospital. The practice-focused question was whether an evidence-based CPG on diabetic patient self-care management might be used by nurses when teaching T2DM patients before releasing from the hospital. The goal of this study is to bridge the gap by giving nurses evidence-based clinical practice information that they can utilize to educate their T2DM patients prior to discharge. The methodological rigor of the CPG was assessed by an expert panel member (the staff educator, chief medical officer and registered nurse) using the AGREE II instrument. The nurses' role in addressing the self-care deficit of patients with T2DM and ensuring self-care practices to manage their condition after discharge from the facility was studied using Dorothea Orem's self-care model. The expert panel agreed to offer the local site's medical executive committee guidelines as a policy recommendation. If implemented, this strategy could have a beneficial social impact by improving patient outcomes and reducing 30-day readmissions in this as well as other organizations.

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Dedication

I want to dedicate this publication to my mother Chinnamma Joseph and my husband Philip Varghese. My mother helped me have a basic education with her struggles as a single parent and my husband consistently encouraged me to advance my education throughout the years. Both of them reminded me to take advantage of the opportunity given and use it for the benefit of others. Well, mom and hubby, this is for you.

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Section 1: Nature of the Project

Introduction

Type 2 diabetes mellitus (T2DM) is a significant health issue affecting over 34 million Americans according to the Centers for Disease Control and Prevention (CDC) report (CDC, 2019). Adults suffering from T2DM are 2 to 4 times more likely to encounter medical complications such as heart disease and stroke (Karunakaran et al., 2018). They are faced with many different aspects of care requirements and are challenged to effectively provide self-management at home. The 30-day readmission rate is approximately 42 percent for patients with T2DM in a local hospital in the Southeast U.S. Self-care management at home is reported to decrease the admission rate for these patients and the morbidity and mortality rate (Ostling et al., 2017).

With enhanced nursing education, resources, time, and synergy with diabetes specialists, nurses will correctly accomplish tasks for diabetic patients, including patient education (Nikitara et al., 2019). The nurse educator at a local hospital in the Southeast U.S. identified that although patients are provided with discharge teaching prior to leaving the hospital, the information provided is not specific for the diabetic patient (Nurse Educator Personal Communication, December 18, 2019). In addition, she reported that there is not a clinical practice guideline (CPG) available for the nurses to use as a guide to educate diabetic patients. Creating an evidence-based CPG founded on current resources from the literature and diabetic organizations has the potential to address this gap in discharge teaching for T2DM patients. Nurses will use this information when preparing to discharge the patient with DM; they will thus be empowered to develop

discharge plans of care that will provide patients with self-care practices they can use for self-care management at home.

Problem Statement

T2 DM readmission accounts for huge health care spending in the United States. The readmission rate for patients with diabetes is reported to be between 14.4 and 22.7% which is higher than the rate of all hospitalized patients (8.5-13.5%) in the United States (Ostling et al., 2017). Diabetes patients spend an average of \$16,752 per year on health care expenses, with diabetes accounting for around \$9,601 (American Diabetic Association, 2018). Medical expenses for diabetic patients are roughly 2.3 times more than they would be if they didn't have diabetes. In 2017, the entire economic cost of diagnosed diabetes was \$327 billion, up from \$245 billion in 2016. (in 2012 dollars) (American Diabetic Association, 2018). Diabetes management can be complex for patients. They will undergo several medical visits a year; be asked to adhere to many different forms of medications to regulate their disease; engage in other aspects of self-care, including home glucose monitoring, balanced eating and exercise; and negotiate management hurdles, such as treatment costs and work-life balance responsibilities (Baig et al., 2015). Unhealthy eating, being physically inactive, not monitoring their blood sugar, and non-compliance with medication therapy are some of the examples of poor management of diabetes. Poor management of diabetes at home can lead to increased hospitalization. Hospitalization of the diabetic patient is associated with increased risk of hospital associated infections (HAI) (Carey et al., 2018). Patients with diabetics are at higher risk for community-acquired infections and sepsis and they have a higher

mortality rate than other individuals (Carey et al., 2018). Managing these patients at home decreases the readmission rate, improves patient provider relationships, increases patient satisfaction, and reduces the morbidity and mortality rate (Ostling et al., 2017). Several demographic factors, such as poor socio-economic status, limited education, and lack of social support are identified as negative contributors to self-care practices in patients with diabetes (Beck et al., 2017). On the other hand, factors such as involvement of family members, changes of diet plan, increasing activities by adding exercise schedule, and family support in achieving the goal are associated with positive outcome for patients with DM (Gonzalez-Zacarias et al., 2016).

Diabetes education and support for self-management provides the basis for helping people with diabetes to make positive decisions and behaviors that have been shown to improve health outcomes (Powers et al., 2016). For adults with type 2 diabetes, self-care practices may lead to better glycemic control and avoid complications related to diabetes (Baig et al., 2015). Acute and chronic complications of type 2 Diabetes can negative impact the quality of life (QOL) of patients with diabetes. Acute complication resulting from hypoglycemia requires immediate attention as it cause the patient to become unstable, fall or become unconscious. Chronic complications caused by micro and macrovascular complications include cardiovascular disease, chronic kidney disease, neuropathy, retinopathy. These can affect patient's physical, social, professional and family lives (Funnel & Freehill, 2018). The prevention and treatment of acute and long-term diabetes complications remain a major focus in diabetic education and have the

potential to improve patient's QOL and prevent hospital readmissions (Funnel & Freehill, 2018).

Patients with diabetes should be educated about these self-care strategies before they are discharged from the hospital, because strategies for decreasing their readmission rates include self-monitoring of blood sugar, compliance to the prescribed medications, life style changes including weight loss, diabetic diet, and regular visit to the primary care physician for routine blood work and follow up (Funnel & Freehill, 2018). Nurses have increased access to patients and resources to educate the patient in the hospital before they go home. There is up to 50% reduction in readmission rate when patients are taught self-care and self-management of diabetes (Healy et al., 2013). Education and support for self-management of diabetes is a vital aspect of treatment for all diabetes patients (Beck et al., 2017). Potential ways to reduce the risk of readmission include inpatient education, better discharge instructions, care coordination, and post-discharge assistance (Rubin, 2018).

According to the Quality Improvement Department at a local hospital in the South West region of the United States, from 2017 to 2019, 1008 patients with Type-2 diabetes were readmitted within thirty days (Personal Contact, Nurse Educator, December 18, 2019). Discussions with the staff educator revealed that there is no specific diabetic self-care teaching currently at the time of discharge. In addition, she reported that there is no specific diabetic teaching guideline available for the nurses to use (Personal Communication, Nurse Educator, December 18, 2019). One of the most significant changes in diabetes patient care has been the strong focus on patient education to suit

individual needs, including patient medications, diet, self- monitoring of the blood sugar, and when to follow up with the primary care physician (Funnel & Freehill, 2018).

This project has the potential to decrease the readmission rate of the diabetes patients by developing a clinical practice guideline (CPG) of diabetic teaching to be used to teach patients. It is crucial that nurses are prepared to educate the patients with T2DM prior to their being discharged from the hospital. However, nurses need the evidence-based resource information to educate patients about self-care and self-monitoring practices related to the T2DM, prior to discharge. This DNP project will fill this gap, by providing evidence-based clinical practice information that the nurses can use as a guide to educate their patients with T2D, prior to their discharge. Providing this information to patients has the potential to empower them to provide self-care and self-monitoring activities at home to improve their quality of life and prevent hospital readmission.

Purpose Statement

Hospitalized DM patients run a high risk of early readmission due to their knowledge deficit relating to the management of DM at home. Readmissions pose a heavy burden on patients and healthcare systems. Inpatient education before discharge is one of the recommendations to strengthen the patients' selfcare practices and avoid this risk (Pinkhasova et al., 2019). The inpatient nurses are constantly in contact with the patient and can provide the education necessary, prior to discharge to improve self-management at home. According to the nurse educator at the local facility, the patients are not provided with diabetic specific teaching prior to discharge (Personal communication, Nurse Educator, December 18, 2019); she reported that there were no

evidence-based discharge guidelines for the nurse to use to educate the patients. The purpose of this DNP project was to develop a current evidence-based CPG to serve as a resource for nurses to use when education patients with T2DM prior to discharge from the hospital. The practice focused question for this project is the following: Will an evidence-based CPG regarding self-care management for diabetic patients, serve as a resource for nurses when teaching patients with T2DM prior to discharge from the hospital? The evidence-based CPG will provide the nurses with the information they need to educate the patient about self-care practices to manage their condition after discharge; this has the potential to increase the patient's QOL and reduce hospital readmissions.

Nature of the Doctoral Project

The Walden Library and other databases such as CINAHL, MEDLINE Cochrane Systematic Analysis Database, EBSCO host databases, and google scholar were used to locate scholarly articles that relate to the Type 2 Diabetes Mellitus self-care practice problem and diabetic readmission rate. This was used to guide development of the evidence-based CPG. The following search terms were used: *diabetes education, Diabetes readmission, diabetes care, diabetes management, diabetes discharge teaching, discharge teaching, role of nurses in diabetes care, impact of demographics of diabetes patients, diabetes care and education, self-care of diabetes patient*. All articles are peer-reviewed publications with respect to adults 18 years old and older and published in English. A total of 18 papers have been reviewed and are cited in this report. Relevant publications related to T2DM from CDC, American Diabetes Association, Diabetese.net., American Association of Colleges of Nursing (AACN), National

Institute of Health (NIH) websites were also reviewed. Numerous Boolean phrases such as “and, or and not” were used as expanders and limiters to restrict the search to peer-reviewed articles, the majority of which were within five years. Information was also obtained from the case manager, quality management team, and clinical nurse educator the hospital regarding readmission and the need for a practice guideline for the nurse to use to teach the patients prior to discharge (Personal Communication, Nurse Educator, December 18, 2019). After the project is completed, the final CPG will be submitted to the organization for approval.

After obtaining Walden Institutional Review Board (IRB) approval, I reviewed the literature and the organizational publications regarding the available and current research and evidence-based practice guidelines on Type 2 diabetes Mellitus. I critically appraised the evidence using the Appraisal of Guidelines for Research and Evaluation (AGREE) II instrument. I collaborated with end users/stakeholders during the development of the guideline. I submitted the CPG to an expert panel for assessment in order to have the content validated using the AGREE II instrument, however they suggested that the project be approved without any changes. The guidelines did not have to be revised based on their recommendations. The guidelines were presented then to end users and stakeholders to validate the content and ensure the usability. The guidelines were revised based on their recommendations. The final CPG will be submitted to the facility at the completion of this DNP project. Developing a CPG for the nurses will provide them with current evidence-based information to teach patients with DM prior to

discharge from the hospital. This has the potential to empower the patients to provide self-care management after discharge and reduce their readmission rates.

Significance

Government agencies and healthcare systems have been increasingly concentrating on readmission rates in recent years as a criterion to evaluate the quality of care provided to patients (Ostling et al., 2017). Many factors are involved in the patient's return to the hospital within 30 days of discharge including failure to acknowledge diabetes at discharge, identified poor health literacy, failure of the discharge process, social determinants, lack of knowledge in detecting and managing hypoglycemia and medication compliance (Drincic et al., 2017). Efforts were created to minimize re-admission by concentrating on these risk factors, including improving discharge preparation, ensuring prompt follow-up, and improving transitional care (Drincic et al., 2017). Diabetic discharge planning is crucial for all diabetic patients (Drincic et al., 2017). The common cause for the readmission is hyper or hypoglycemia (Karunakaran et al., 2018).

Development of an evidenced-based clinical practice guideline has the potential for positive social change for nurses, patients, and the organization. Nurses will have the most current evidenced-based diabetic discharge guideline to use as a guide for pre-discharge teaching for the patients with diabetes. This has the potential to improve patients with diabetes self-management at home. Patients who are taught evidenced-based self-care practices after discharge have the potential for positive care outcomes,

improved QOL and reduced hospital readmission. The organization will benefit from a decreased readmission rate.

Summary

The readmission of T2 DM patients accounts for massive spending on health care in the United States. In 2017, the entire economic cost of diagnosed diabetes was \$327 billion, up from \$245 billion in 2016 (American Diabetic Association, 2018). Diabetic patient's readmission rate is estimated to be between 14.4 and 22.7 percent which is higher than the rate of all hospitalized patients (8.5-13.5 percent) in the United States (Ostling et al., 2017). Unhealthy diet, being physically inactive, not controlling the blood sugar, and non-compliance with drug therapy are some of the examples of inadequate self-care management activities of the patients with diabetes. Poor diabetes control at home can lead to higher hospitalizations. Hospitalized T2DM patients run a high risk of early readmission due to their awareness deficit relating to the management of DM at home. Patients and healthcare facilities bear a heavy burden from readmission. One of the recommended interventions to improve the self-care behaviors of patients and decrease the risk for readmission is education before discharge (Pinkhasova et al., 2019).

Information obtained from a literature review and informal communication with the facility helped to clarify issues related to self-care practice of patients with T2DM and unavailability of guidelines in the facility for nurses to use as a resource to educate patients with T2DM prior to discharge. The purpose of this DNP project was to develop a current evidence-based CPG to serve as a resource for nurses to use when educating patients with T2DM prior to discharge from the hospital. Providing an evidence-based

CPG for nurses to use as a resource for pre-discharge teaching, have the potential to promote self-care and self-management practices at home and reduce hospital readmissions. In section 2 I will address concepts, models, and theories, relevance to nursing practice, local background and context, and the role of the DNP student.

Section 2: Background and Context

The nurse educator in this community hospital located in the Southeastern region of the United States identified that there is no specific diabetic self-care education provided to patients with T2DM, at the time of discharge from this facility (Personal Communication, Nurse Educator, December 18, 2019). In addition, she confirmed that no clear guidelines for diabetic teaching are available for nurses to use. Due to the lack of discharge teaching in the hospital, there is an increased readmission rate for patients with diabetes, in the hospital. It is crucial that patients are educated prior to their being discharged from the hospital about self-care strategies that have the potential to decrease their readmission rate; these strategies include self-monitoring of blood sugar, compliance to the prescribed medications, life-style changes (e.g., weight loss and adherence to diabetic diet), regular primary care visits for routine blood work, and follow-up, prior to their being discharged from the hospital (Funnell & Freehill, 2018). There is an identified need for an evidence-based clinical practice guideline that can be used by registered nurses to educate patients with diabetes prior to discharge from the hospital. The purpose of this DNP project is to develop a current evidence-based CPG to serve as a resource for nurses to use when educating patients with T2DM prior to discharge from the hospital. The practice focused question for this project is the following: Will an evidence-based CPG regarding self-care management for diabetic patients, serve as a resource for nurses when teaching patients with T2DM prior to discharge from the hospital? The evidence-based CPG will provide the nurses with the information they need to educate the patient about self-care practices to manage their

condition after discharge; this has the potential to reduce hospital readmissions. In this section, I will discuss the concepts, models, and theories, relevance to nursing practice, local background and context, and the role of the DNP student.

Concepts, Models, and Theories

The Appraisal of Guidelines for Research & Evaluation Instrument (AGREE II) model was chosen to guide the development and evaluation of the evidence-based CPG. In addition, the assumptions of Orem theory of self-care deficit provided an understanding of the relationship between the nurses' actions and the needs of patients with T2DM.

Agree II Model

The AGREE II tool was developed to address the issue of inconsistency in the accuracy of the guidelines and to assess the rigor and clarity of the process by which a guideline is formed (Kate, 2013). The goal of AGREE II is to provide a structure for evaluating the content of the guideline, to provide a methodological strategy for creating the guideline, and to provide details on what and how information should be reported in the guideline (Kate, 2013). In 2003, a team of foreign guideline developers and researchers released the original AGREE II Instrument (Kate, 2013). AGREE II is now the latest international instrument for the evaluation of guidelines for practice (Agretrust, 2017). AGREE II is both valid and reliable and consists of 23 items grouped into the 6 consistency domains of the original (Agretrust, 2017). AGREE II defines constituents that CPGs must discuss in order to demonstrate their success and furthermore ensure their desired trustworthiness and have a positive effect on health care

outcomes (Ameer et al., 2020). The AGREE II tool consists of 23 items organized in six domains: scope and purpose, participation of stakeholders, rigor of development, clarity of presentation, applicability, and independence of publishing (Ameer et al., 2020). Each item in the AGREE II instrument is scored on a Likert-type scale of 1–7.

Theory of Self-Care Deficit

Dorothea Orem's self-care model was used to understand the nurses' role in addressing the self-care deficit of patients with T2DM to ensure self-care practices to manage their condition after discharge from the facility. Dorothea Orem developed the self-care nursing theory between 1959 and 2001. Orem explained her work as a general nursing theory comprising three interrelated theories: self-care theory, self-care deficit theory, and nursing systems theory (Hartweg, 2014). Nevertheless, the specific name for Orem's general nursing theory is Self-Care Deficit Nursing Theory (SCDNT) (Hartweg, 2014). She chose the term "deficit" as it describes and explains a relationship between the capacity of people to care for themselves and the needs or expectations of the person, their children, or the adults for whom they care (Hartweg, 2014).

Assumptions

Assumptions of Dorothea Orem's SCDNT are (1) individuals, as well as those in their family who need care, should be self-reliant and responsible for their care, people are distinct individuals. (2) The human capacity to engage in self-care is determined by age, state of growth, life experiences, socio-cultural orientation, health, and resources available. (3) A critical part of primary care prevention and ill health prevention is effectively achieving universal and developmental self-care criteria, and (4) A person's

knowledge of potential health problems is needed for promoting self-care behaviors (Hartweg, 2014). Assumption four provides an understanding of the needs for T2DM patients to be educated about self-promoting behaviors prior to being discharged home. Assumptions one, three, and four were used to understand the nurses' role in responding to the needs of the T2DM patients for self-care management. SCDNT emphasized that educating patients about the potential health problems they may experience is required to promote their self-care behaviors. There may be a self-care deficit in many areas, such as a lack of awareness of DM etiology, a lack of understanding of the symptoms of uncontrolled DM, a loss of enthusiasm in treating diabetes, or an inability to afford treatment (Younas, 2017). The person with diabetes must re-regulate the treatment of medical diet and physical activity, using medication and blood glucose monitoring, if necessary, to determine the effects of self-care activities. It is therefore important that nurses have resources to educate the T2DM patient about the self-care practices to effectively manage their condition after discharge.

Relevance to Nursing Practice

One of the major threats to public health in the 21st century is the prevalence of T2DM (Unnikrishnan et al., 2017). DM is a complicated health issue and the person with DM must make a variety of everyday decisions about self-management (Rubin, 2018). Persons with diabetes mellitus (DM) are far more likely than those without DM to be admitted for prolonged periods (Rubin, 2018). Patients also face additional difficulties with respect to diabetes treatment following a hospital stay (Krall et al., 2016). Hospital bedside nurses have the responsibility to prepare patients with the skills necessary for

survival; however, they may not have the necessary experience and are tasked with other competing responsibilities (Reagan et al., 2019). It is critical that nurses inform patients about their current treatment and self-care responsibilities before leaving the hospital, to improve patient outcomes, minimize complications, and reduce the risk of readmission (Reagan et al., 2019).

Diabetes is a complicated and demanding disease and a person with T2DM is required to make important every day self-management decisions (Powers et al., 2020). The readmission rate due to complications associated with diabetes is high. Lifestyle modifications, including physical exercise, compliance to prescribed medication, and the dietary plan can reduce readmission; thus, patient education is essential prior to discharge (Drincic et al., 2017). According to Powers et al. (2020) persons with diabetes should be educated with information that will empower them to take responsibility for their self-management after leaving the hospital. This involves working with their health care team, making informed choices, addressing challenges, creating personal goals and action plans, and dealing with emotions and pressures in life.

The local community hospital is faced with a situation of increased readmissions due to complications of patients with T2DM (Personal Communication, Nurse Educator, December 18, 2019). Using an Evidence-based CPG is an effective strategy for improving education processes, particularly because it offers a consistent guide to best practices. Nurses have a responsibility to adopt evidence-based research results to clinical practice. Staff nurses caring for the patient with diabetes must be prepared to provide diabetic discharge education and instructions. The number of patients with T2DM

continues to increase and there is a shortage of diabetic educators (Krall et al., 2016). It is therefore essential that staff nurses have the information needed as a resource to educate the patient for self-care management at home. An evidence-based CPG on T2DM discharge education will provide the nurse with this information.

Local Background and Context

T2DM is a significant contributor to hospital readmission risk. Among the hospitalized patients, number of patients with T2DM are high among the co-morbid disease (Ostling et al., 2017). According to CDC, (2020), more than 34 million Americans (approximately 1 in 10) have diabetes, and about 90-95 percent of them have type 2 diabetes. Unlike other conditions, diabetes demands patient to manage their lifestyle including medications, diet, and regular exercise with the guidance of health care professionals (CDC, 2020). Medical professionals consider diabetic self-care management an integral component of management for reducing complications (CDC, 2020).

This project took place at a community hospital in the Southwest U.S. The staff educator reported that many of the patients are admitted with diagnosis of T2 DM or history of diabetes (Personal Communication, December 18, 2019). The hospital has 100 in-patient's beds. Patients are admitted in the hospital with multiple chronic illnesses requiring long-term care needs. This hospital is one of six within a larger hospital system network serving the Southeast region of the U.S. (Nurse educator, Personal Communication, December 18, 2019). Discussion with the nurse educator of the hospital regarding the increased readmission of diabetes patients, led to report that there is no

clinical practice guideline for the nursing staff to use when discharging the patients from the hospital. She agreed with my proposal to develop a CPG to be used by the nursing staff when discharging patients with DM (Staff Educator Personal Communication, December 18, 2019). Evidenced based CPG provides a resource for the nursing staff and helps the patient understand their condition and what self-care management can be done at home to prevent readmission to the hospital. The implementation of an evidence-based CPG can prevent inconsistencies in the delivery of discharge education to the diabetes patients at this hospital.

Role of the DNP Student

My role as a DNP student was to direct the design of a clinical practice guideline. As per DNP Essential, doctoral prepared nurses should play a leadership role to ensure high quality patient outcomes, interdisciplinary collaboration to evaluate practice gaps, and incorporate evidence-based practice models to improve patient care (Spencer, 2019). My function was to serve as an agent of social change to strengthen care processes that would provide nurses with the information to empower patients with Diabetes for self-care, prior to discharge. As differences in discharge readiness are related to increased 30-day readmission, providing evidenced-based CPG is increasingly relevant. As an experienced nurse working in different positions with diabetic patients over the past several years, I noticed gaps in discharge teaching for T2DM patients. This was further supported by elevated readmission rates, (the 30-day readmission rate is approximately 42 percent for patients with T2DM from 2017 to 2019) that have potentially decreased the chance of smooth transition from hospital to home. My aim is to ensure that patients

with T2DM are educationally prepared and clinically ready for discharge before going home.

Summary

In this community hospital in Southeastern region of the United States, the nurse educator found that there was no clear diabetic self-care guidance given to T2DM patients at the time of discharge from this hospital. Furthermore, she stated that there are no specific diabetic teaching guidelines available for nurses to use (Staff Educator, Personal Communication, December 2018). Nurses are at the forefront of patient care and are thus in regular contact with patients with diabetes. Nurses have an obligation to apply evidence-based scientific findings to clinical settings, and educating patients with T2DM about self-care management has been shown to reduce readmission after discharge.

The goal of this DNP project is to develop an evidence-based CPG to serve as a resource for nurses when educating patients with T2DM about self-care management practices, before leaving the hospital. The AGREE II model was used to guide the development of this evidence-based CPG to serve as a resource for nurses when teaching patients with T2DM, prior to hospital discharge. The AGREE II instrument was used to evaluate the rigor and consistency of the newly established guidelines. In addition, Dorothea Orem's SCDNT assumption that individuals should be self-reliant. They should be provided an evidence-based standard of practice to prepare them for self-management after leaving the hospital. My function as a DNP student is to establish an

evidence based CPG for nurses to use as a resource to educate T2DM patients prior to discharge from the hospital.

Section 3: Collection and Analysis of Evidence

The prevention and treatment of acute and long-term complications of diabetes remains a significant priority in the education of patients with T2DM and can boost QOL for patients and reduce hospital readmissions (Funnel & Freehill, 2018). Before patients with T2DM are discharged from the hospital, it is important that nurses are prepared to teach them about self-care practices. Nurses, however, need an evidence-based resource such as a CPG to guide them while teaching patients. In the community hospital in the South West region of the United States. The nurse educator found that there was no clear diabetic self-care education given to T2DM patients at the time of discharge from this hospital (Personal Contact, Nurse Educator, December 18, 2019). The nurse educator expressed the need for an evidence- based CPG for the local hospital. The purpose of this DNP project is to develop a current evidence-based CPG to serve as a resource for nurses to use when educating patients with T2DM prior to discharge from the hospital.

Practice-Focused Question

A critical component of nursing care of patients with T2DM is to provide education to them that support self-care management after discharge (Beck et al., 2017). Inpatient education, improved discharge instructions, care coordination, and post-discharge assistance are possible ways to minimize the likelihood of readmission (Rubin, 2018). At the local hospital from 2017-2019, 1008 patients were readmitted with Type 2 within thirty days (Personal Contact, Nurse Educator, December 18, 2019). Discussions with the staff educator showed that there is not a specific CPG to assist nurses with teaching diabetic self-care to patients, at the time of discharge.

The purpose of this DNP project is to develop a current evidence-based CPG to serve as a resource for nurses to use when educating patients with T2DM prior to discharge from the hospital. Implementing an evidence-based CPG will serve as a resource for the nurses for the diabetic discharge education and thus address the gap in nursing practice. It is important that the nurses have sufficient resources in the facility to provide quality care to patients with complex disease conditions such as T2DM. The practice focused question for this project is the following: Will an evidence-based CPG regarding self-care management for diabetic patients, serve as a resource for nurses when teaching patients with T2DM prior to discharge from the hospital? The evidence-based CPG will provide the nurses with the information they need to educate the patient about self-care practices to manage their condition after discharge; this has the potential to reduce hospital readmissions.

Sources of Evidence

The Walden Library and other databases such as CINAHL, MEDLINE, Cochrane Systematic Analysis Database, EBSCO host databases, and google scholar were used to locate scholarly articles related to Type 2 Diabetes Mellitus, self-care practices, diabetic readmission rates, and DM education. In addition, I reviewed information from the American Association of Clinical Endocrinologist (AACE) and American Diabetic Association (ADA) to guide development of the evidence-based CPG. The basic search subject of diabetes mellitus self-care resulted in numerous articles. Numerous Boolean phrases and expanders and limiters were used to decrease the number of posts and

restricted the search to peer-reviewed articles, the majority of which were within five years.

Hospitalized DM patients run a high risk of early readmission. Interventions to mitigate this risk are recommended to strengthen inpatient education before discharge (Pinkhasova et al., 2019). Research demonstrates shortcomings in the hospital process demonstrated by the need for information clarification in > 30 percent of patients (Pinkhasova et al., 2019). Readmissions pose a heavy burden on patients and healthcare systems. The inpatient nurses are constantly in contact with the patient and can provide needed information. Developing a CPG for the nurses will provide increased knowledge and a framework for nurses to help in reducing the readmission of diabetes patients. The CPG was submitted to the organization for their input and approval.

Approach or Procedural Steps

I developed the evidence-based CPG for T2DM patient discharge teaching as guided by the Walden University Manual for the Development of Clinical Practice Guidelines, after approval by the Walden University IRB.

1. Analyze existing available evidence-based clinical recommendations from various sources and studies on educating about diabetic discharge teaching of T2DM patients.
2. Review the search results to decide if they are applicable to the problem question and if necessary, change the search strategy.

3. Use the Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) method to categorize the levels of evidence from the articles gained from the literature review.
4. Create a draft of the Evidence-Based CPG.
5. Present the CPG to an expert panel for them to complete a formative content evaluation of the guidelines using the AGREE-II tool (See attachment A).
6. Revise the CPG based on the results of their evaluation.
7. Present the CPG to an administration-identified community of core stakeholders/end-users to verify content and ensure usability.
8. Revise the guidelines based on expert panel feedback.
9. Create the final evidence-based-practice CPG and disseminate to the Administrator.

Ethical Protection

The Walden Manual for CPG Guideline was used as a guide to develop this DNP project. The aim of the project is to establish a CPG that can be used for teaching of diabetic patients at discharge. The evidence-based CPG will serve as resource for nurses for discharge education of diabetic patients. As the guideline was developed, patients were not involved in this project. Approval to develop the CPG was obtained from the facility's Chief Nursing Officer (See Appendix B). The CPG was presented to an expert panel for them to complete a formative content evaluation of the guidelines using the AGREE-II tool. As required by Walden University, each panel member was

provided with a disclosure form that identifies what they are being asked to do (See appendix C). This is not a consent and does not require a signature. Their responses to the AGREE II questionnaire are reported in aggregate form. No identifiers were obtained from the experts and stakeholders involved in the CPG assessment. In addition, no written document regarding this project identifies their names or the names of the facility. I identified the facility in a U.S. area by its location. The data gathered from the expert and stakeholder analysis was kept on my personal password protected computer in my home. I alone have the password. After five years, as required by Walden IRB, I will permanently delete the files. This DNP project promotes the provision of professional accountability for fostering a culture of safety by the American Nurses Association (ANA) Code of Ethics.

No proprietary, sensitive, or confidential information will be revealed in the written report of the doctoral project to ensure the confidentiality of the project site. The names of the experts reviewing the CPG will not appear on the formative evaluation they provide. Therefore, their names will not appear in the written report of the project.

Analysis and Synthesis

The Walden DNP Manual for Guidelines for Clinical Practice guided the development of this project. The practice problem and its relevance to nursing practice have been identified in Section 1. The practice-focused question, the purpose of this DNP project, and the concepts, models, and theories used to inform the doctoral project are addressed in Section 2.

The Walden University Clinical Practice Guidelines Manual guides the steps of the project (Walden, 2017). The AGREE II model was used to guide this evidence-based CPG development project, to strengthen the teaching of diabetes education before hospital discharge. Also, Orem's SCDNT was used in this project. To determine and evaluate the consistency of the proposed guidelines, the AGREE II instrument was used. Once usability has been assured, the guideline was sent for final approval prior to implementation to the medical executive administrator. Once the clinical practice guideline was created, the expert panel members (staff educator, chief medical officer and registered nurse) reviewed the guideline based on the domains listed in the AGREE II checklist.

The literature review was done in two steps. First each paper was classified as a function of its research design according to the degree of evidence it presented. The Johns Hopkins Nursing Evidence-Based Practice (JHNEBP) system was used to identify levels of evidence that are Level 1 (experimental study or experimental meta-analysis); Level 2 (quasi-experimental study); Level 3 (non-experimental study, qualitative study or meta-synthesis); Level 4 (opinion of research evidence-based nationally recognized experts or expert consensus panel) (JHNEBP model resources, 2020). Second, according to JHNEBP, each paper was evaluated for quality, and graded as A (high), B (good), or C (low), again. Per outcome measure, such as clinically significant outcomes, patient-reported outcomes, or compliance reports, the outcome of the study will then be incorporated. The synthesis of the evidence resulted in a series of statements that formed the draft guide for clinical practice when combined. An expert panel team used the

AGREE II instrument to evaluate the resulting guideline for its methodological rigor. Per the advice of the experts, the guideline did not require revision. The usability and applicability of the guidelines were checked by the stakeholder/end users for content validity and usability. The stakeholders are registered nurses working at the hospital. Based on the recommendations and input from the stakeholders, I disseminated the completed guideline to the expert panel.

Summary

A functional concern at this project site was the number of T2DM patients readmitted within 30 days after discharge. Personal communication with staff educator of the hospital, identified that a lack of discharge teaching for T2DM patients was a problem and there is no present diabetic CPG in the facility. An evidence-based CPG to facilitate nurses' discharge teaching of patients with T2DM is a realistic approach that can theoretically minimize readmissions. Discharge teaching is a series of evidence-based approaches that add continuity to nursing practice and strengthen care processes (Lavalley et al., 2017). Scholarly peer-reviewed publications and leading public health websites were the sources of evidence for this project. This was evaluated for feasibility of using discharge instructions to improve readmission rates for T2DM patients. Before starting this project, Walden Institutional Review Board (IRB) approval was sought to ensure ethical security. In Section 4, strengths and limitations of the project, recommendations, and the results and findings and implications will be discussed.

Section 4: Findings and Recommendations

Introduction

Excessive readmissions for T2DM patients were discovered to be an issue at this project site, indicating the necessity for a clinical practice guideline to be developed with the help of an expert panel (Appendix D). Clinical practice guidelines attempt to improve clinical care and the quality of care provided to patients by informing treatment decisions with evidence-based research. Developing an evidence-based CPG based on existing literature can close this gap in T2DM patient discharge teaching. When nurses plan to discharge a patient with diabetes, they will utilize this information to construct discharge plans of care to teach patients self-care behaviors they may employ at home.

The practice focused question for this project is: Will an evidence-based CPG regarding self-care management for diabetic patients, serve as a resource for nurses when teaching patients with T2DM prior to discharge from the hospital? The evidence-based CPG will provide the nurses with the information they need to educate the patient about self-care practices to manage their condition after discharge; this has the potential to reduce hospital readmissions.

The Walden Library, as well as additional databases like CINAHL, MEDLINE, Cochrane Systematic Analysis Database, EBSCO host databases, and Google Scholar, were utilized to find scholarly articles about the Type 2 Diabetes Mellitus self-care problem and diabetic readmission rate. The evidence-based CPG was developed using this as a guide. The GRADE method was used to evaluate the quality of the scholarly publications and the intensity of the recommendations. The Walden DNP Manual for

Clinical Practice Guidelines was used to construct the guideline, and the AGREE II instrument was used to assess the quality of the product.

Findings and Implications

Using the AGREE II model scoring instrument, four expert panelists critically evaluated the created clinical practice guideline (see Appendix A). The nurse educator, the chief medical officer, and two registered nurses made up the expert panel. Each panelist had seven days to evaluate the guideline and submit input using the AGREE II tool. The criteria were finished in the specified time by all four appraisers. The scaled scores are given to gauge the overall quality of the guideline based on the feedback from each panelist. Each panelist received a copy of the disclosure from the Walden University DNP clinical practice guideline handbook before evaluating the recommendation (see Appendix C).

AGREE II is both valid and trustworthy, with 23 elements arranged into the six consistency domains (Agreertrust, 2017). AGREE II identifies the components that CPGs must communicate in order to demonstrate their success, as well as ensure their desired credibility and impact on health-care outcomes (Ameer et al., 2020). The AGREE II tool uses a Likert-type scale of 1–7 to score each item.

Domain 1 Scope and Practice

In domain 1 of the AGREE II instrument, the scope and purpose of the clinical practice guideline were assessed. The expert panelists gave this domain a 91.6 percent overall score, indicating that the expert panelists felt that the practice guideline's

overarching objectives were satisfied. One expert panelist was silent on what should be changed in the practice guidelines to improve them.

Table 1 *Domain 1: Scope and Purpose*

	Item 1	Item 2	Item 3	Total
Appraiser 1	6	6	6	18
Appraiser 2	6	6	6	18
Appraiser 3	7	7	7	21
Appraiser 4	7	7	7	21
	26	26	26	78

Note: calculation $78-12/84-12 \times 100 = 91.6\%$

Domain 2: Stakeholder's Involvement

Domain 2 of the AGREE II instrument examines stakeholder involvement in the formulation of the guideline and determines if the intended users' and targeting population's opinions were considered. This domain received an overall score of 91 percent indicating that there was agreement on stakeholder involvement.

Table 2 *Domain 2: Stakeholder Involvement*

	Item 4	Item 5	Item 6	Total
Appraiser 1	6	6	6	18
Appraiser 2	6	6	6	18
Appraiser 3	7	7	7	21
Appraiser 4	7	7	7	21
	26	26	26	78

Note: Calculation $78-12/84-12 \times 100 = 91.6\%$

Domain 3: Rigor of Development

Eight questions were included in Domain 3 of the AGREE II instrument, which examined the systematic techniques used to obtain and integrate the best available information in order to create the guideline recommendations. This domain received 86 percent total score, with each panelist evaluating all elements in this area as a six or a seven. This high ratio means that the expert panel agreed unanimously that the practice recommendation was based on considerable research.

Table 3 *Domain 3: Rigor of Development*

	Item 7	Item 8	Item 9	Item 10	Item 11	Item 12	Item 13	Item 14	Total
Appraiser 1	6	6	6	6	6	6	6	6	48
Appraiser 2	6	6	6	6	6	6	6	6	48
Appraiser 3	7	7	7	7	7	7	7	7	56
Appraiser 4	7	7	7	7	7	7	7	7	56
	26	26	26	26	26	26	26	26	208

Note: Calculation $208-32/224-32 \times 100 = 86\%$

Domain 4: Clarity of Presentation

Domain 4 of the AGREE II instrument is about presenting clarity, and it includes three questions about the guideline's language, structure, and format. This domain had an overall score of 91 percent, indicating that the guideline was simple to comprehend. The proposals were concise, according to one expert panelist, whereas another panelist suggested that the proposals be ordered by importance. The guideline's purpose was to provide equally important evidence-based guidelines.

Table 4 *Domain 4: Clarity of Presentation*

	Item 15	Item 16	Item 17	Total
Appraiser 1	6	6	6	18
Appraiser 2	6	6	6	18
Appraiser 3	7	7	7	21
Appraiser 4	7	7	7	21
	26	26	26	78

Note: Calculation $78-12/84-12 \times 100 = 91.6\%$

Domain 5: Applicability

Domain 5 of the AGREE II instrument examined the guideline's relevance in terms of operational facilitators and barriers. The overall score for this domain was 91.6 percent, indicating that the guideline was widely accepted in practice.

Table 5 *Domain 5: Applicability*

	Item 18	Item19	Item20	Item21	Total
Appraiser 1	6	6	6	6	24
Appraiser 2	6	6	6	6	24
Appraiser 3	7	7	7	7	28
Appraiser 4	7	7	7	7	28
	26	26	26	26	104

Note: Calculation $104-16/112-16 \times 100 = 91.6\%$

Domain 6: Editorial Independence

Editorial independence is assessed in Domain 6 of the AGREE II instrument, which concentrates on competing interests and any biases in the development of advice. With a score of 91.6 percent, this domain achieved the highest rating. There were no recommendations or comments for this domain.

Table 6 *Domain 6: Editorial Independence*

	Item 22	Item23	Total
Appraiser 1	6	6	12
Appraiser 2	6	6	12
Appraiser 3	7	7	14
Appraiser 4	7	7	14
	26	26	52

Note: Calculation $52-8/56-8 \times 100 = 91.6\%$

Overall Guideline Assessment

The clinical practice guideline received an overall score of 87.5 percent, with all four expert panelists recommending that it be used without change. I met with each expert panelist individually to go over their thoughts and recommendations. Based on administrative feedback, the guideline was to be prepared for submission to the site's medical executive committee for policy approval, with no amendments. The guideline was not amended as a result of this comment, and a final copy of the guideline was emailed to each panelist.

Table 7 *Overall Guideline Assessment*

Appraiser 1	6
Appraiser 2	7
Appraiser 3	7
Appraiser 4	7
Total	27

Note: $27-4/28-4 \times 100 = 95.8\%$

Table 8 *Recommended Use of Guideline*

	Yes	Yes with Modifications	No
Appraiser 1	X		
Appraiser 2	X		
Appraiser 3	X		
Appraiser 4	X		

Note: $4/4 \times 100 = 100\%$

Recommendations

The hospital will be given the T2DM CPG that was evaluated by the expert panel as a first step in implementing it. Another suggestion was to use the key guidelines as a checklist before releasing to diabetes patients. By including this on the discharge checklist, the team will be able to identify any key processes that were overlooked prior to discharge. The project's recommendations include incorporating the guideline's evidence-based recommendations into the site's standardized CPGs, also known as standardized procedures. CPG for diabetic discharge teaching will be added to the electronic health record to improve adherence to recommended care protocols.

Contribution of the Doctoral Project Team

An expert panel from diverse administrative and clinical areas made up the project team. I, the chief medical officer, the staff educator, and two registered nurses made up the project team. Each member of the project team had a thorough awareness of the difficulties associated with minimizing readmissions in T2DM patients. The expert panel had several meetings to identify clinical gaps in care that may be potentially contributing to excessive readmission rates. The AGREE II scoring tool was used to critically evaluate the guideline, and expert panel members were given seven days to assess the guideline's content and provide feedback. This DNP project's support was critical in moving this transformation initiative ahead. Clinical members of the project team were crucial in assessing the needs of a particular demographic at this acute care project site.

Strengths and Limitations of the Project

Releasing patients from the hospital to their homes safely is a complicated process that necessitates a comprehensive team. A strength of the project is the engagement of a multidisciplinary group to generate a usable CPG that offers a thorough, standardized process that can be utilized to eliminate discrepancies in practice was one of the academic project's primary strengths. Using a diverse team to evaluate a clinical issue alerted the institution that irregular discharge processes could be contributing to high readmission rates. Another strength of this endeavor is that it assisted this acute care project site to identify successful solutions for addressing clinical practice gaps in additional high-readmission-rate problem areas.

A limitation is that the project was established exclusively for T2DM patients. Pneumonia readmissions, for example, are a significant issue at this acute care project site, owing to the COVID-19 pandemic. This guideline cannot be applied to other disease conditions to reduce readmissions. A further limitation of this study was that the expert panel members were administrative and clinical staff with restricted opportunity to engage in the thorough and structured literature search, as recognized in the AGREE II results.

Section 5: Dissemination Plan

Introduction

The clinician's capacity to successfully explain different patterns of thinking in connection to clinical practice is critical to translating evidence into practice. During the DNP project development process, clear guidelines facilitate the development of strong initiatives that have an impact on nursing practice and health outcomes (Sipe & Andrist, 2018). I have a few strategies in mind for sharing the produced clinical practice guideline. The guideline will first be presented to a panel of experts. If accepted, the guideline will be adopted as a clinical norm for all hospital departments that give diabetic education to all T2DM patients at discharge. I further urge that this CPG be integrated into the site's electronic health record so that nurses may access it quickly.

Analysis of Self

This DNP project has provided me with several prospects. First, by proposing an evidence-based change initiative that has the potential to impact the entire company, this initiative has helped in enhancing my leadership qualities. DNP-prepared nurses have an ethical commitment to foster a patient safety as nurse leaders (AACN, 2006). Recognizing corporate environment, recognizing care gaps, evaluating financial problems, and employing evidence-based approaches to improve activities all require leadership abilities. As a consequence of the many interactions I have had with this endeavor, I have earned the understanding and skills able to adequately connect demanding professionals from a diversity of perspectives. Meetings with hectic operational and academic personnel were difficult to plan, particularly during times of a

pandemic. Nevertheless, I employed innovative methods to deliver critical information to key people, such as summarizing extensive study papers using tangible and precise language.

As a clinician with extensive experience working with diabetic patients, I recognized the need for discharge patient education to address a gap in nursing practice. I researched peer-reviewed literature and acquired material for the CPG for diabetic patient education as a scholar. As a project manager, I have worked with various hospital professionals, including nurse educators and expert panel members, to create and have the CPG authorized.

This academic effort has provided me with a comprehensive knowledge of the DNP essentials curricular aspects and competencies. I am resolving a clinical deficit in practice using the theoretical foundations of practice (DNP Essential I) and advanced nursing knowledge and abilities (DNP Essential VIII). Clinical expertise (DNP Essential III) and systems leadership (DNP E) are required to produce a CPG with an interdisciplinary system to promote public health (DNP Essential VII) and minimize healthcare expenditures. I used data technology and systems (DNP Essential IV) to push for new company clinical practice guidelines to cater to the needs of T2DM patients as I manage this project to enhance T2DM patients' discharge care (DNP Essential V). Educating healthcare providers on how to enhance health outcomes is a vital component of directing advances in practice. Professional quality continuing education and training, in my experience, is frequently missing in the healthcare industry.

Summary

When discharging T2DM patients from the hospital to their homes, a gap in clinical practice was observed as potentially related to high readmission rates in this DNP project. To address the identified gap, an evidence-based CPG was designed with assistance from a multidisciplinary expert panel. Creating a T2DM CPG is an effective strategy for reducing excessive readmission rates while also improving patient outcomes provided to T2DM patients. It can also offer nurses coherent, established techniques to bridge the gap between current discharge practices and recommended practice guidelines. To improve the quality of care provided to patients and to enhance nursing practice, future research and initiatives should include the establishment of disease-specific, evidence-based CPGs.

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Appendix A: AGREE II Appraisal Instrument and Instructions

AGREE II Score Sheet

Domain	Item	Agree II Rating						
		1 Strongly Disagree	2	3	4	5	6	7 Strongly agree
Scope and purpose	1. The overall objective(s) of the guideline is (are) specifically described.							
	2. The health question(s) covered by the guideline is (are) specifically described.							
	3. The population (patients, public, etc.) to whom the guideline is meant to apply is specifically described.							
Stakeholder involvement	4. The guideline development group includes individuals from all the relevant professional groups.							
	5. The views and preferences of the target population (patients, public, etc.) have been sought.							
	6. The target users of the guideline are clearly defined.							
Rigor of development	7. Systematic methods were used to search for evidence.							
	8. The criteria for selecting the evidence are clearly described.							
	9. The strengths and limitations of the body of							

	evidence are clearly described.							
	10. The methods for formulating the recommendations are clearly described.							
	11. The health benefits, side effects and risks have been considered in formulating the recommendations.							
	12. There is an explicit link between the recommendations and the supporting evidence.							
	13. The guideline has been externally reviewed by experts prior to its publication.							

	14. A procedure for updating the guideline is provided.							
Clarity of presentation	15. The recommendations are specific and unambiguous.							
	16. The different options for management of the condition or health issue are clearly presented.							
	17. Key recommendations are easily identifiable.							
Applicability	18. The guideline describes facilitators and barriers to its application.							
	19. The guideline provides advice and/or tools on how the recommendations can be put into practice.							
	20. The potential resource implications of applying the recommendations have been considered.							

	21. The guideline presents monitoring and/ or auditing criteria.							
Editorial independence	22. The views of the funding body have not influenced the content of the guideline.							
	23. Competing interests of guideline development group members have been recorded and addressed.							
Overall Guideline Assessment	1. Rate the overall quality of this guideline.	1Lowest Possible Quality	2	3	4	5	6	7 Highest Possible Quality
Overall Guideline Assessment	2. I would recommend this guideline for use.	No	Yes, with Modifications				No	

Appendix B: Site approval documentation for CPGD Doctoral Project**Appendix B: Site approval documentation for CPGD Doctoral Project**

Partner Site: Kindred North West Hospital
Contact Information: Staff Educator Syeda Jafer
Date: 03/05/2021

The doctoral student, Rajeena Varghese is involved in developing updated Clinical Practice Guidelines for our organization, and is therefore approved to collect questionnaire data from expert panelists in support of that effort. I understand that, as per DNP program requirements, the student will publish a scholarly report of the development of these Clinical Practice Guidelines in ProQuest as a doctoral capstone (with site and individual identifiers withheld), as per the following ethical standards:

- a. In all reports (including drafts shared with peers and faculty members), the student is required to maintain confidentiality by removing names and key pieces of evidence/data that might disclose the organization's identity or an individual's identity or inappropriately divulge proprietary details. It is up to the organization to choose if the project should be publicized.
- b. The student will be responsible for complying with our organization's policies and requirements regarding data collection (including the need for the site IRB review/approval, if applicable).
- c. Via a Disclosure to Expert Panelists Form (which is similar to a consent form but doesn't need to be signed), the student will describe to panelists how the data will be used in the doctoral project and how the stakeholders' integrity and privacy will be protected.

I confirm that I am authorized to approve these activities in this setting.

Authorization Official Name: Dr. Srinivas Vodnala
Title: Chief Medical Officer

Ubs
3/5/2021
Srinivas Vodnala MD

Appendix C: Disclosure to Expert Panelist Form for Anonymous Questionnaires

To be given to an expert panelist prior to collecting questionnaire responses—note that obtaining a “consent signature” is not appropriate for this type of questionnaire and providing respondents with anonymity is required.

Disclosure to Expert Panelist

You are invited to take part in an expert panelist questionnaire for the doctoral project that I am conducting.

Questionnaire Procedures

If you agree to take part, I will be asking you to provide your responses anonymously, to help reduce bias and any sort of pressure to respond a certain way. Panelists' questionnaire responses will be analyzed as part of my doctoral project, along with any archival data, reports, and documents that the organization's leadership deems fit to share. If the revisions from the panelists' feedback are extensive, I might repeat the anonymous questionnaire process with the panel of experts again.

Voluntary Nature of the Project

This project is voluntary. If you decide to join the project now, you can still change your mind later.

Risks and Benefits of Being in the Project

Being in this project would not pose any risks beyond those of typical daily professional activities. This project's aim is to provide data and insights to support the organization's success. *CGPD Manual (May 2017) Page 16*

Privacy

I might know that you completed a questionnaire, but I will not know who provided which responses. Any reports, presentations, or publications related to this study will share general patterns from the data, without sharing the identities of individual respondents or partner organization(s). The questionnaire data will be kept for a period of at least 5 years, as required by my university.

Contacts and Questions:

If you want to talk privately about your rights in relation to this project, you can call my university's Advocate via the phone number 612-312-1210. Walden University's ethics approval number for this study is (Student will need to complete Form A in order to obtain an ethics approval number).

Before you start the questionnaire, please share any questions or concerns you might have.

Appendix D: Walden IRB Approval

Number Walden IRB approval # 03-15-21-0396699.

Appendix E: Clinical Practice Guideline

Clinical Practice Guideline on Type 2 Diabetes Patients Discharge Teaching

Objective

The purpose of this DNP project is to develop an evidence-based Clinical Practice Guideline (CPG) to serve as a resource for nurses to use when educating patients with Type 2 Diabetes Mellitus (T2DM) prior to discharge from the hospital.

Problem Statement

Will an evidence-based CPG regarding self-care management for diabetic patients, serve as a resource for nurses when teaching patients with T2DM prior to discharge from the hospital?

Target Population

The evidence-based CPG will provide the registered nurses with the information they need to educate the patient about self-care practices to manage their condition after discharge; this has the potential to increase the patient's quality of life (QOL) and reduce hospital readmissions.

Guideline Monitoring

The guideline should be reevaluated every three years or when new recommendations for diabetic education are published. Barriers to the application of this guideline should be addressed as they arise by the expert panel, before implementation.

Introduction

Type 2 diabetes mellitus (T2DM) is a significant health issue affecting over 34 million Americans according to the Centers for Disease Control and Prevention (CDC)

report (CDC, 2019). Adults suffering from T2DM are 2 to 4 times more likely to encounter medical complications such as heart disease and stroke (Karunakaran et al., 2018). They are faced with many different aspects of care requirements and are challenged to effectively provide self-management at home. The nurse educator at a local hospital in the Southeast region of the United States identified that although patients are provided with discharge teaching prior to leaving the hospital, the information provided is not specific for the diabetic patient (Nurse Educator Personal Communication, December 18, 2019). In addition, she reported that there is not a clinical practice guideline available for the nurses to use as a guide to educate diabetic patients. Creating an evidence-based CPG founded on current resources from the literature and diabetic organizations has the potential to address this gap related to discharge teaching of T2DM patients. Nurses will use the CPG information when preparing to discharge the patient with DM; they will thus be empowered to develop discharge plans of care that will provide patients with self-care practices they can use for self-care management at home after discharge.

This Clinical Practice Guideline will focus on the discharge teaching of diabetic patients.

Inclusion Criteria

1. Adult patients aged 65 and older
2. Patients with diagnosis of Type 2 Diabetes Mellitus

Exclusion Criteria:

- Diabetic patients who have cognitive impairment

Diabetic Patient Education Guidelines

Teaching Topics	Recommendation	Level of Evidence/Quality ratings	Comments
1. Understanding the T2DM disease process.	Recommended	Level I	Patients with a better understanding of the disease process have better DM knowledge and self-care activities, diet, medication management, and improved outcomes (Zhang & Chu, 2018)-Level-I
2. Prescribed Medication including drug names, dosages, frequency of administration, expected results, possible adverse effects, and signs and symptoms of toxicity.	Strongly recommended	Level I, II, IV Good	<p>Teaching of medication management is essential for the clinical management of Type 2 diabetes (Chester et al., 2018)-Level-IV</p> <p>Health awareness increases by educating, which leads to better drug adherence (Tan et al., 2019)-Level-I</p> <p>If patients with T2DM follow the directions for altering their medication schedule and dosage, they may have safer fasting blood sugars and have a lower risk of serious consequences (Abdelrahim et al., 2021). Level-II</p> <p>Diabetes education is an effective intervention for lowering the risk of hypoglycemia (LaManna et al., 2019). -Level-I</p>

3. Recognition of signs and symptoms and how to respond to Hypoglycemia and Hyperglycemia.	Strongly recommended	Level I, III, Good	<p>Knowing how to minimize hypoglycemia is an essential component of self-care since knowledgeable patients are more likely to have better hypoglycemia prevention practices.</p> <p>Hypoglycemia is a life-threatening emergency that must be recognized and treated as soon as possible to avoid organ and brain damage. Symptoms range from autonomic activation to behavioral changes to impaired cognitive function to seizures or coma, depending on the extent and severity of hypoglycemia (Nikitara et al., 2019)- Level-I</p> <p>Hypoglycemia is a common side effect in patients with T2DM, and it's essential to pay attention to elderly, obese patients who have inadequate control and have had diabetes for a longer time (Ibrahim, 2021). Level-III</p>
4. When to seek medical help	Strongly Recommended	Level I, Good	Blood sugar levels that are too low or too high may cause life-threatening complications. Before complications arise, it is important that the patient seeks medical attention to

			change treatment if required (Chaudhary et al., 2016)-Level-I.
5. Diabetic diet	Strongly Recommended	Level II Good	<p>Patients with diabetes who adopt low-calorie or low-carbohydrate diets typically see an improvement in their condition and can often reduce diabetes medications with close monitoring.</p> <p>Low-carbohydrate, low-energy diets have been shown to increase blood glucose regulation, with some patients experiencing type 2 diabetes remission (Morris et al., 2019)-Level II.</p>

Teaching Topics	Recommendation	Level of Evidence/Quality ratings	Comments
6. Self-monitoring of blood glucose (SMBG)	Recommended	Level IV	One of the most effective ways to determine how well your diabetes care strategy works is to check your blood sugar. Blood sugar levels can be measured with a finger stick and a glucose meter, or, if one is available, with a continuous glucose monitoring (CGM) system (Weinstock, 2019). Level-IV

7. A1c Levels	Highly Recommended	Level I, III ,IV	<p>The HbA1c level is a critical indicator of disease control that is linked to long-term diabetes-related morbidity (Chen et al., 2015). Level-I</p> <p>Patients with type 2 diabetes should be aware of their goal and A1c levels, according to the American Diabetes Association. Improved patient knowledge of their A1c level results in better diabetes self-management and glycemic regulation, according to scientific evidence (Yang et al., 2016) -Level III</p> <p>The A1c test allows your doctor to work with you to control your condition and make medical choices that will help you avoid complications (NIH, 2021). Level IV.</p>
8. Regular follow up with a primary physician: (foot care, eye exam, blood pressure and cholesterol level monitoring, smoking cessation, immunizations)	Highly Recommended	Level I, IV	<p>Microvascular and macrovascular complications may result from high blood glucose levels-(Chaudhary et al., 2016).Level I</p> <p>Teaching patients to keep hemoglobin A1c (HbA1c) levels within the range is vital to prevent these complications. Long-term elevated blood glucose</p>

			<p>levels can lead to inflammation and, as a result, damage to blood vessels and nerves, resulting in diabetes complications. Cardiovascular disease, eye damage, kidney problems, polyneuropathy, and limb amputations are more frequent complications. The importance of prevention is essential (VA.gov, 2018)- Level I, VII</p> <p>Diabetes that is poorly managed will affect your quality of life. It will also result in long-term problems that will be impossible to reverse (Abdelrahim et al., 2021) - Level I</p>
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10.Regular Exercise	Strongly Recommended	Level I, VII Good	<p>One of the cornerstones of type 2 diabetes care is improving eating and physical activity habits, but changing patterns is difficult (Cradock et al., 2017)-Level I</p> <p>Acute bouts of exercise and daily physical activity will alter insulin action in muscle and liver. Via insulin-independent pathways, aerobic exercise</p>
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			increases muscle glucose absorption up to fivefold in the short term (Colberg et al., 2016), Level VII
12. Community Resources: community	Strongly Recommended	Level I, IV	<p>Peer support is essential in changing nuanced health habits in disease prevention and treatment, including diabetes, in various environments, including under-resourced countries and health care systems (Fisher et al., 2017)-Level I</p> <p>Community health clinics (CHC) can improve patient involvement in treatment and ensure providers are ready to answer patient needs. CHC redesigns health care delivery, providing self-management assistance, and ensuring providers answer patient needs. (Kane et al., 2016) Level IV</p>

Note: The following attachments (A-J) for the CPG explains the teaching points

Attachment A: Disease Process

Objectives:

At the end of this session the patient will be able to identify:

- What diabetes is.
- What type of diabetes they have.
- The differences between the various forms of diabetes.
- How diabetes will affect them now and in the future.
- What steps they can take to help manage the condition.

Checking of understanding:

- The patient should state what form of diabetes they have
- verbalize what diabetes is and how to manage it with drugs and
- lifestyle changes.

Red flags:

- The patient does not know what kind of diabetes he or she has,
- expresses a lack of control over one's wellbeing (fatalism), and
- has misconceptions regarding diabetes care for his or her type.

Follow-up: Reinforce the information that was presented and ask them to repeat back the information.

Attachment B: Medication Teaching

Objectives:

At the end of this session the patient will know

- which diabetes drugs they are prescribed,
- the best way to get their medication,
- the doses,
- timing of the medications,
- possible side effects and how and
- when to contact the healthcare team if they are experiencing a series of low or high blood sugars.

Checking of understanding:

The patient verbalizes:

- Names of the medications.
- How the drugs work to reduce blood sugar levels.
- Their medication's most common side effects.
- When and how to administer medicine, as well as what to do if a dose is missed.
- A strategy for getting refills on time.

Red flags:

The patient:

- Does not consider the possibility of negative consequences (hypoglycemia).
- Doesn't know how much medication to take or when to take it.
- States medications can be skipped at inopportune times.
- Is unsure of where or how to obtain medicine.

- States when dining out, they sometimes forget their medications.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

**Attachment C: Recognition of signs and symptoms and how to respond to
Hypoglycemia and Hyperglycemia**

Objectives:

At the end of this session the patient will know

- What hypoglycemia and hyperglycemia is.
- How low is too low, how high is too high.
- How to identify low and high blood sugar.
- What causes low blood sugar and high blood sugar.
- What to do if blood sugar is low or too high.
- How to use a glucagon kit.

Checking of understanding:

- May recognize the signs and symptoms of low and high blood sugar on their own.
- Can explain why blood sugar could be dropping (not eating, exercise, etc.).
- Has a procedure in place to deal, at all times, with low blood sugar.
- Assures that friends and family are mindful of the risks and how to assist with low blood sugar.

Red flags:

- Has a history of extreme lows on insulin but does not have a glucagon kit or someone who knows how to use it, despite being at risk for hypoglycemia.
- Keeps blood sugar up on purpose to prevent hypoglycemia.
- Blood glucose levels that are outside the target range are not detectable.
- Believes that it is preferable to keep blood glucose levels up to prevent lows.
- Reports that thirst, urination, and exhaustion are constant companions.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

Attachment D: When to Seek Medical Help

Objectives:

At the end of this session the patient will know

- How to monitor their blood sugar.
- What to do if they are ill or not eating and need to take your diabetes medication.
- Which foods are safe to eat when they are sick.
- When to contact their doctor.
- How and when to screen their urine or blood for ketones.

Checking of understanding:

- Patient able to state how to monitor their blood sugar and when and how to check urine or blood ketones.
- Patient verbalizes situations that he/she may need medical help.

Red flags:

- When he or she becomes ill, he or she declares that he or she will not take any diabetes medicine.
- When sick, he/she claims to monitor blood sugar less often. There is no connection between illness and high blood sugar, and there are no steps to avoid dehydration.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

Attachment E: Diabetic Diet

Objectives:

At the end of this session the patient will know

- How to eat.
- How much food to consume.
- How to know which foods have the most significant impact on blood sugar
- How to make a plate in the Mediterranean style,
- Simple method for "measuring" portions, and what the best carbohydrates are to eat.

Checking of understanding:

- Patient able to verbalize the value of consuming a variety of nutritious meals during the day and the importance of not skipping meals.
- Patient can recognize carbohydrate-containing foods and recognizes that carbohydrates have the greatest effect on blood sugar.
- Can distinguish examples of foods that should be put on each section of the plate.

Red flags:

- Patient claims that he or she will never be able to eat something "healthy" or favorite foods again.
- He or she supports the use of fad diets.

- He or she eats out a lot.
- He or she consumes sugar-sweetened drinks.
- Processed and refined foods are a big part of their diet.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

Attachment F: Self-Monitoring of Blood Glucose (SMBG)

Objectives:

At the end of this session the patient will know

- Why it is important to test their blood sugar and what the best way to monitor their blood sugar is.
- What their blood sugar (glucose) goal range is.
- When to check their sugar and how to get supplies.

Checking of understanding:

Patient is able to:

- Show how to do a fingerstick blood glucose test using the proper technique.
- State the importance of testing and how often they should test.
- Distinguish between BG values that are inside and outside of the target range.
- Verbalize that they have a meter and can tell you how they get supplies.

Red flags:

- Does not monitor blood sugar levels.
- Only monitors blood sugar when it is below the target range.
- Cannot show proper blood sugar screening process/technique.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

Attachment G: Hemoglobin A1c Levels

Objectives:

At the end of this session the patient will know

- Why the hemoglobin A1c level is used to monitor BS regulation over three months.
- Why the A1c level will fluctuate and represent change
- What factors can affect the A1c level
- The significance of discussing their target A1c with their doctor

Checking of understanding:

- Can correctly claim that the HbA1c test measures average blood sugar levels over the previous three months.
- Verbalizes that the results of an HbA1c test can differ and that a reading that is too low can indicate dangerously low blood sugars.
- Expresses a desire to speak with the provider about a target HbA1c.

Red flags:

- Does not realize that an HbA1c test represents average blood glucose over three months.
- States a low HbA1c test can indicate low blood sugars.
- Expresses the assumption that an HbA1c target is set solely by the provider, with no feedback from the patient.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

Attachment H: Regular Follow-up with the Primary Care Provider

Objectives:

At the end of this session the patient will know

- Regular follow-up visits with the primary care provider for diabetic foot examinations, eye exams, blood pressure, and cholesterol control, as well as A1c monitoring.
- The benefits of quitting smoking and receiving vaccinations.

Checking of understanding:

- Patient verbalized his or her awareness of periodic follow-up, blood pressure and cholesterol testing
- Able to state value of foot, exam, and eye tests.
- Understands the importance of smoking cessation and receiving vaccinations.

Red flags:

- Claims to have "seen it all before" or "already knows all."
- Has no need to manage his or her diabetes.
- Does not have a healthcare provider for follow up.
- Eye and foot exams appear to be inconclusive.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

Attachment I: Regular Exercise

Objectives:

At the end of this session the patient will know

- The benefits of being physically active,
- What effect physical exercise can have on blood sugar,
- Why it is important to do a certain amount of physical activity,
- The safest form of exercise,
- Current activity and ways to tackle physical activity barriers.

Checking of understanding:

- Correctly lists the advantages of physical activity
- Describes the impact of exercise on blood glucose levels
- Describes a physical activity schedule that requires at least 30 minutes of activity on most days of the week
- Identifies possible obstacles to physical activity and devises a strategy for overcoming them.

Red flags:

- Incorrectly lists the advantages of physical activity.
- Unable to describe the impact of exercise on blood glucose levels.
- Describes a current physical activity schedule that does not include exercise and has no intent to add activity.

- Unable to identify possible obstacles to physical activity or devise a plan to overcome barriers.

Follow-up:

Reinforce the information that was presented and ask them to repeat back the information.

Attachment J: Use of Community Resources

Objectives:

At the end of this session the patient will know

- How to use community resources such as a CHC and home health nurse visits
- How to maintain compliance with hospital discharge instructions and

Checking of understanding:

- The patient explains the purpose of community resources.
- Can explain how to use the available services.
- Able to state how to prevent complications.

Red flags:

- Patients are adamant about not using community health services.

Follow-up:

- Reinforce the information that was presented and ask them to repeat back the information.

Note: References for the CPG attached as follows:

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Appendix F: Expert Panels Scoring of Clinical Practice Guideline

Domain	Domain	Domain	Domain	Domain	Domain	OA	<u>OA</u>
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>1</u>	<u>2</u>
<u>91.6%</u>	<u>91.6%</u>	<u>86%</u>	<u>91.6%</u>	<u>91.6%</u>	<u>91.6%</u>	<u>95.8%</u>	Yes – 4, Yes with modifications 0, No – 0
<i>Domain 1. Scope and Purpose</i>							
	Appraiser 1	Appraiser 2	Appraiser 3	Appraiser 4			
Item 1	6	6	7	7			
Item 2	6	6	7	7			
Item 3	6	6	7	7			
<i>Domain 2. Stakeholder Involvement</i>							
	Appraiser 1	Appraiser 2	Appraiser 3	Appraiser 4			
Item 4	6	6	7	7			
Item 5	6	6	7	7			
Item 6	6	6	7	7			
<i>Domain 3. Rigor of Development</i>							
	Appraiser 1	Appraiser 2	Appraiser 3	Appraiser 4			

Item 6	6	6	7	7
Item 7	6	6	7	7
Item 8	6	6	7	7
Item 9	6	6	7	7
Item 10	6	6	7	7
Item 11	6	6	7	7
Item 12	6	6	7	7
Item 13	6	6	7	7
Item 14	6	6	7	7

Domain 4. Clarity of Presentation

	Appraiser 1	Appraiser 2	Appraiser 3	Appraiser 4
Item 15	6	6	7	7
Item 16	6	6	7	7
Item 17	6	6	7	7

Domain 5. Applicability

	Appraiser 1	Appraiser 2	Appraiser 3	Appraiser 4
Item 18	6	6	7	7
Item 19	6	6	7	7
Item 20	6	6	7	7

Item 21	6	6	7	7
<i>Domain 6. Editorial Independence</i>				
	Appraiser 1	Appraiser 2	Appraiser 3	Appraiser 4
Item 22	6	6	7	7
Item 23	6	6	7	7
<i>Overall Assessment</i>				
	Appraiser 1	Appraiser 2	Appraiser 3	Appraiser 4
OA 1	6	6	7	7