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**Registered Nurse Competencies and the Implementation of Self-Care Interventions Among
Surgical Patients with Type Two Diabetes: A Quality Improvement Project**

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Abstract

Background: Type 2 Diabetes is a chronic disease that requires a holistic approach, an in-depth understanding of self-care, education comprehension, and an effective relationship between healthcare professionals and the individual patient (Saeed et al., 2018). Due to a variety of factors such as increased nurse-to-patient ratios, inconsistent education methods, and limited confidence levels among registered nurses, important treatment measures and discussion of one's T2DM diagnoses are often not addressed. Initiatives to improve education methods and nursing confidence levels will create more effective treatment measures and discharge education.

Local Problem: Registered nurses spend minimal time educating patients on the severity of their disease and how to prevent further complications. A point-of-care education model was utilized to understand nursing barriers that prevent them from offering optimal T2DM education. The desired outcome of this intervention was to have registered nurses incorporate concrete diabetic education into individual patient care.

Methods: The project used a plan-do-study-act (PDSA) strategy to gather information relating to post-surgical management of T2DM. A seven-question survey generated data on the top reasons why education was not initiated among patients.

Intervention: Following data collection, a point-of-care discussion model was utilized so that nurses could privately discuss personal barriers to patient education. Qualitative data was shared which emphasized areas that nurses can improve upon and implement into daily education methods. The goal was to increase nursing competency levels during routine patient care and upon discharge.

Results: Data showed that 72% of registered nurses said they were not comfortable talking about self-care interventions with patients diagnosed with T2DM.

Conclusion: Further initiatives are needed to implement additional education for patients diagnosed with T2DM. Interdisciplinary collaboration is an important factor in increasing educational resources and enhancing nursing competence.

Key Words: *Health literacy, nursing competency, T2DM comorbidities, quality improvement, self-care measures, point-of-care education.*

Introduction

The Centers for Disease Control and Prevention (CDC) indicates that 28.7 million Americans have been diagnosed with type 2 diabetes mellitus (T2DM) (Bullard, 2018). Risk factors for T2DM including smoking, increased body mass index (BMI), obesity, physical inactivity, high levels of hemoglobin A1C, hypertension, and high cholesterol are directly linked to higher rates of diabetes-related complications and deaths (Bullard, 2018). Complications include various neuropathies, heart and blood vessel diseases (atherosclerosis, coronary heart disease, nephropathy, retinopathy), slow healing often progressing to infection or sepsis, visual deficits, and skin impairment (CDC, 2022). Further statistics indicate that the prevalence of T2DM varies greatly depending on social determinants of health, specifically one's education level and socioeconomic status (Saeed et al., 2018).

Problem Description

The knowledge and awareness of serious complications from poorly managed T2DM has created varying initiatives focusing on the individual's attitudes, adherence, and treatment plans of a T2DM diagnosis (Rahaman et al., 2017). The process of four-hour blood sugar checks for each T2DM diagnosis is strictly implemented in the microsystem in the Northeast, however, no further exploration of treatment methods or patient education is established. T2DM is a chronic disease seen in 65% of patients admitted to this microsystem. Health illiteracy and limited adherence to effective treatment measures (exercise, eating a balanced diet, weight management, glucose monitoring, infection control, etc.) is a highly prevalent issue resulting in patients with serious complications, and comorbidities of T2DM. Complications include various neuropathies, heart and blood vessel diseases (atherosclerosis, coronary heart disease, nephropathy, retinopathy), slow healing often progressing to infection or sepsis, visual deficits,

and skin impairment. Multiple research studies show that health illiteracy among patients with T2DM is a major risk factor for poor treatment adherence and conceptualization of the disease progression (Standage-Beier et al., 2022, McDonald & Shenkman, 2018). There is currently no diabetic educator within the hospital, indicating minimal time for patient education on self-care management topics and prevention of further disease complications. This organizational issue was qualified through the distribution of a seven-question survey showing that one-third of nurses are not incorporating diabetic self-management education or emphasizing the importance of disease management.

Diabetes is a chronic disease that requires a holistic approach, in-depth understanding of self-care, education comprehension, and an effective relationship between healthcare professionals and the individual patient (Saeed et al., 2018). Cultural competencies and social determinants of health are additional components of health literacy that healthcare professionals should also incorporate into care (Standage-Beier et al., 2022). With a continued emphasis on more diverse research methods and the application of quality improvement processes, health literacy and the self-management of those diagnosed with T2DM can be effectively implemented and addressed.

Evidence-based research indicates that health illiteracy causes increased rates of hospitalization visits, higher emergency department visits, and higher mortality rates related to limited understanding of disease risks and treatment regimens (McDonald & Shenkman, 2018). Social determinants of health and the consistent changes in the healthcare industry emphasize the importance of completing additional quality improvement initiatives. Complications and poor health outcomes of T2DM are still a primary issue within this healthcare system, therefore

quality improvement processes regarding diabetic education and health literacy improvements remain a priority.

Available Knowledge

The research studies were collected in March and April of 2023 using the University of New Hampshire's Nursing Research Guide. Data was assessed to better understand the relationship between health literacy and self-care management interventions among those diagnosed with type 2 diabetes mellitus. The utilization of databases included the Cumulative Index to Nursing and Allied Health Literature (CINAHL), PubMed, Medline, and the Cochrane Databases of Systematic Reviews. Keywords and Boolean phrases were used in a variety of searches such as, "complications of type 2 diabetes mellitus," "health literacy AND type 2 diabetes," AND "interventions, education levels," "diabetes AND self-management," "poor knowledge outcomes, AND health literacy AND treatment adherence." Inclusion criteria included specific demographics of individuals diagnosed with T2DM with additional complications and comorbidities related to the initial T2DM diagnoses. This review was focused on two specific social determinants of health which included individual education level and socioeconomic status. To assist in credible resourcing, exclusion criteria were limited to research conducted within the last five years, and all research must have incorporated a specific self-management intervention about the subject of healthy literacy abilities. The number of participants and lengths of studies were assessed to determine credibility, and due to strict research methods, the exclusion criteria were minimal.

Health literacy and chronic disease management are important subjects to address and can be defined as the skills required to obtain, simulate, comprehend, and reflect upon health-related information to effectively make informed health decisions (Saeed et al., 2018). Recent

research regarding health literacy highlights the individual perceptions of one's illness, and the personal understanding of self-care and self-management of T2DM (Protheroe et al., 2017).

Health illiteracy and limited adherence to effective treatment measures (exercise, balanced diet, weight management, glucose monitoring, infection control, etc.) is a highly prevalent issue resulting in patients with serious complications, and comorbidities of T2DM (Dahal & Hosseinzadeh, 2019).

The subject of health literacy relates to healthcare and outlines the need for clinicians to understand the efficacy of self-management. A healthcare provider's knowledge and implementation of various educational treatment tools and interventions for diagnosed patients will increase adherence to treatment and better healthcare outcomes (Protheroe et al., 2017). Research shows that health literacy highly impacts self-management behaviors, and emphasizes the need to address one's cognitive abilities to address personal motivation, and the ability to assimilate varying interventions (Dahal & Hosseinzadeh, 2019). Increased rates of health illiteracy rates are directly correlated with negative health outcomes leading to increased risks for disease complications and comorbidities (Dahal & Hosseinzadeh, 2019). The understanding of health literacy can better assist both the health care provider and patient relationships by establishing an intervention that is manageable and realistic while addressing the individual's self-management and literacy abilities. Health literacy is a valuable concept to increase patients' knowledge of their type 2 diabetes diagnosis, and enhances personal autonomy and empowerment of self-care and self-management of one's chronic illness (Giovani Paes et al., 2022)

Critical Appraisal

A research study conducted at BMC Nursing, highlights current research indicating that health literacy in disease management is highly utilized through internet-based search practices using digitalized treatment services (Lee et al., 2022). However, there is still a need for healthcare professionals to assess the individual health literacy needs of their patients to properly address and evaluate a treatment regimen and intervention that is effective. The authors discuss the need for a condition-specific instrument and health literacy measurement tool that acknowledges the reliability, validity, and adherence of the instrument (Lee et al., 2022). Research indicates that while various measurement tools are created to determine effective treatment regimens, they often lack a specific understanding of the individual's knowledge, abilities, and educational competency (Lee et al., 2022). Self-reporting measurement tools are often used in the hospital environment to evaluate health literacy competencies and are considered helpful in establishing more effective tools regarding self-management skills (Lee et al., 2022).

This study consisted of 453 participants diagnosed with T2DM in the hospital outpatient setting. The instrument was created and executed in four stages, which outlined conceptualization, product development, measurement validation, and survey implementation (Lee et al., 2022). A cross-sectional study and survey protocol were used to evaluate the process, and inclusion criteria consisted of all participants at least nineteen years of age. The condition-specific measurement scale was used after informed consent was given, and this scale was compared to other tools such as the Diabetic Health Literacy Scale (DHLS) and the 5-point Likert scale (to assess the validity of content) (Lee et al., 2022). Data was analyzed using descriptive statistics of mean and standard deviation, and patterns were assessed using exploratory graph analysis (EGA). Item generation was evaluated after conducting participant

interviews on internet-based applications which participants utilized to research self-management methods. Statistics considered the education levels of clients using descriptive statistics of mean, and standard deviation, and the evaluation of structural data was not adequate to establish high rates of validity (Lee et al., 2022). Limitations included small sample sizes, with a low test-retest rate. The authors distinguish the difference between face-to-face health literacy methods compared to a greater need for eHealth literacy measurements (app-based diabetic interventions), which became more utilized due to the COVID-19 pandemic (Lee et al., 2022). The continuous theme remains that both eHealth literacy and in-person health literacy assessments must be evaluated and implemented by healthcare providers.

A study conducted at the Pakistan Public Health Organization evaluates levels of health literacy among patients with T2DM in relationship to the specific intervention of the glycemic control (Saeed et al., 2018). Decreased literacy rates specifically relate to a patient's difficulty in reading medication labels, implementing precise medication dosing, evaluating personal lab values, and comprehension of the overall risk of treatment non-adherence (Saeed et al., 2018). The research design was a six-month cross-sectional study assessing the health literacy levels of 204 individuals using the Short Test of Functional Health Literacy (S-TOFHLA) questionnaire (Saeed et al., 2018). Education and socioeconomic levels were evaluated showing results that lower health literacy rates increased the likelihood of poor hemoglobin A1C levels, and additional risks for developing diabetic complications (Saeed et al., 2018).

Strengths of the study include the utilization of an ethics committee board, the 12-month duration of the study, and careful consideration of participants using the hospital's clinical database (Saeed et al., 2018). Inclusion criteria were also considered and required that all participants have visited their primary care physician within the past six months before

enrollment in the study. Exclusion criteria included varying comorbidities that may hinder the evaluation of health literacy competency, which included mental health issues, or blindness (Saeed et al., 2018). Regression analysis and linear regression were used to identify both dependent and independent variables relating to education, socioeconomic status, and employment status (Saeed et al., 2018). Clear tables and charts were depicted and showed results indicating younger patients (<45 years of age) had higher literacy rates and participants with lower health literacy rates had a greater likelihood of developing two or more comorbidities (Saeed et al., 2018). Health literacy levels and complications of type two diabetes were also evaluated, depicting a clear relationship between adequate literacy skills and lower rates of disease complications. Like other research studies in this category, limitations included a limited sample size and the same cross-sectional research design studies as many others (Saeed et al., 2018).

A research study conducted by Giovanni Paes (2022) describes diabetes as a global health crisis causing high morbidity and mortality rates often as a result of serious disease complications. Limited education levels and decreased awareness of self-management interventions create a need for higher levels of health literacy standards (Giovani Paes et al., 2022). The research team evaluates the relationship between socioeconomic status and education levels and health literacy, self-knowledge of T2DM disease, and the development of T2DM disease complications, specifically diabetic foot ulcers (Giovani Paes et al., 2022). This cross-sectional, descriptive, and analytical study evaluates thirty-three participants (older than fifty-nine years old) through a questionnaire utilizing an eight-item health literacy assessment tool (Giovani Paes et al., 2022). Social determinants mentioned were education levels and access to outpatient healthcare. The Strengthening the Reporting of Observational Studies in

Epidemiology (STROBE) was utilized as a guideline, which is an initiative that assesses the accuracy of information collected in observational studies (Elm et al., 2007). Inclusion criteria were among participants ages 18-65 years old during the years 2019 and 2020. An informed consent and questionnaire were given, which addressed multiple self-management modalities including income, body mass index, evaluations of diabetic foot screening, number of daily medications, physical activities, and glycemic control monitoring and methods. (Giovani Paes et al., 2022). Measurement tools validated health literacy data related to individual income, levels of health literacy, and knowledge of type two diabetic complications and treatment methods. The chi-square test and Yates correction were used to analyze the variables of data, and the P value was considered statistically significant (Giovani Paes et al., 2022). Results were depicted with multiple tables showing questionnaire answers and percentages, in addition to an analysis of varying social determinants of health. An ethics committee was used and approved data collection, which is a strength of the study. Limitations included a low participant level with the need for more in-depth search methods.

Overall results indicate that participants with higher education levels ultimately have a greater depth of treatment knowledge and health literacy level. (Giovani Paes et al., 2022). In contrast to other analyzed studies, this article indicates that participants with a diagnosis longer than five years have greater health literacy competencies. (Giovani Paes et al., 2022).

In this systematic review, authors specifically evaluate the relationship between health literacy and diabetes self-management (Dahal & Hosseinzadeh, 2019). This includes the understanding of current evidence that outlines self-management behaviors and interventions. Fourteen randomized control studies were analyzed between 2009 and 2019, using research databases PubMed, CINAHL, Medline, Scopus, and Web of Science, and research was excluded

if it did not include peer-reviewed studies and/or did not discuss implications of healthy literacy relating to management of T2DM (Dahal & Hosseinzadeh, 2019). The International Diabetes Foundation (IDF) estimates that internationally, 425 people ages 20-79 are living with type 2 diabetes mellitus, causing 4 million deaths, and healthcare costs of 727 billion USD (Dahal & Hosseinzadeh, 2019).

One's healthy literacy and self-management abilities are the primary indications for effectively managing type 2 diabetes and include priority interventions such as physical activity, healthy diet, glycemic control/glucose monitoring, and medication adherence. (Dahal & Hosseinzadeh, 2019). Specific areas of healthcare organizations included community centers, primary health organizations, and various hospital environments. Interventions utilizing health literacy components showed the greatest effectiveness of self-management within community-based settings. Increased outcomes were correlated with appropriate educational interventions relating to literacy abilities, and the supportive promotion of personal empowerment during implementation of intervention. Results also showed that more healthy literacy research is needed to effectively focus on self-management and empowerment of glucose monitoring and glycemic controls (Dahal & Hosseinzadeh, 2019). Tables of each trial were depicted showing results and a list of up to twenty-five random controlled trials "outputs" such as medication, foot care, diabetes knowledge and self-efficacy, quality of life, diabetes medication adherence, and blood-glucose self-monitoring. Authors concluded that a more customized, and structured approach to healthy literacy interventions is necessary to see any significant change to overall change and self-management outcomes (Dahal & Hosseinzadeh, 2019).

Limitations of the study stated that outcomes were based on heterogeneous trials with specific target populations. Many of the studies were conducted in less than one year, therefore

long-term understanding of interventions is limited. There was no conflict of interest within the study and authors did not receive any funding from outside organizations.

The International Journal of Environmental Research and Public Health states health literacy as a term that can describe multiple components of one's self-management of chronic illness. Additional variables outside the general definition of health literacy include cultural considerations, and the need for healthcare professionals to address cultural competencies when working with patients (Standage-Beier et al., 2022). For example, in the United States, Hispanics experience higher rates of health illiteracy, which translates to increased rates of chronic disease burden (Standage-Beier et al., 2022). This article emphasizes the important component of developing a self-management T2DM measurement tool that addresses cultural competency and appropriate levels of health literacy. This systematic review evaluated 33 research publications, to find specific self-management instruments that addressed both cultural backgrounds and health literacy levels (Standage-Beier et al., 2022). 22 studies were cross-sectional, nine were interventional research designs, and two were cohort research designs. Databases used were PubMed, CINAHL, and Embase, addressing Mexican American, Latino, and Hispanic origin, with the priority findings of self-management and self-care in the T2DM (Standage-Beier et al., 2022).

Results indicated that eight reliable instruments were found, including Test of Functional Health Literacy in Adults (S-TOFHLA), the Brief Health Literacy Screen (BHLS), the Subjective Numeracy Scale (SNS), and the Diabetes Numeracy Scale (DNS) (Standage-Beier et al., 2022). The S-TOFHLA is the most directly used instrument among Hispanic populations diagnosed with T2DM, and a review of the literature indicates that this is a common finding across additional research studies. However, further research is needed as the most recent

assessment of health literacy and this population was conducted in 2003 by the National Assessment of Health Literacy, therefore more up-to-date assessments and research are needed (Standage-Beier et al., 2022). Due to the multiple social determinants of health among this population, the review states that findings were difficult to differentiate socioeconomic status and literacy abilities. Further research and assessment is required (Standage-Beier et al., 2022).

Synthesis of Evidence

Although research indicates that health literacy plays a significant role in the health outcomes of individuals diagnosed with T2DM, more evidence-based research is needed to further assess specific self-management interventions. For example, much of the research shows that health literacy tools relating to self-care around glucose monitoring and glycemic control are still primary areas that lack evidence-based research and execution of interventions (Dahal & Hosseinzadeh, 2019). This would promote greater health outcomes specifically evaluating healthy literacy interventions that will have the greatest impact on self-management and treatment adherence (Dahal & Hosseinzadeh, 2019). Limited education, poor attitudes, and lack of consistent intervention management among patients continue to play a significant role in poor health outcomes and disease complications related to T2DM (Rahaman et al., 2017). It is important to also consider the use of internet-based information, as this can negatively impact the knowledge, attitudes, and overall effectiveness of interventions.

Best practices indicated by organizations such as the World Health Organization, the CDC, and the American Medical Association associate the implementation of healthy literacy assessment with increased quality of healthcare outcomes among those suffering from chronic disease (McDonald & Shenkman, 2018). Additional Interventions through quality improvement initiatives will further assess individual health literacy levels, which establishes greater self-

management and autonomy among patients with type two diabetes. For example, the Self Care of Diabetes Inventory (SCODI) tool, which is a self-evaluation questionnaire asking various questions on T2DM treatment adherence will create data showing specific areas of health illiteracy and low treatment adherence. This intervention will address the patient's ability to verbalize important management of type two diabetes, in addition to understanding the risk factors that can occur with poor adherence to interventions.

Evidence-based research indicates that health illiteracy causes increased rates of hospitalization visits, higher emergency department visits, and higher mortality rates related to limited understanding of disease risks and treatment regimens (McDonald & Shenkman, 2018). Social determinants of health and the consistent changes in the healthcare industry emphasize the importance of completing additional quality improvement initiatives. Complications and poor health outcomes of T2DM are still a primary issue within the healthcare system, therefore quality improvement processes regarding diabetic education and health literacy improvements remain a priority.

Health literacy offers a greater understanding among individuals diagnosed with T2DM diabetes and facilitates interventions with the goals of personal autonomy, empowerment, and effective self-management tools (Giovani Paes et al., 2022). Diabetes is a chronic disease that requires a holistic approach, in-depth understanding of self-care, education comprehension, and an effective relationship between healthcare professionals and the individual patient (Saeed et al., 2018). Cultural competencies and social determinants of health are additional components of health literacy that healthcare professionals should also incorporate into care (Standage-Beier et al., 2022). With a continued emphasis on more diverse research methods and the application of

quality improvement processes, health literacy and the self-management of those diagnosed with T2DM can be effectively implemented and addressed.

Rationale

Health literacy and chronic disease management are important subjects to address and can be defined as the skills required to obtain, simulate, comprehend, and reflect upon health-related information to effectively make informed health decisions (Saeed et al., 2018). Recent research regarding health literacy highlights the individual perceptions of one's illness, and the personal understanding of self-care and self-management of T2DM (Protheroe et al., 2017). Health illiteracy and limited adherence to effective treatment measures (exercise, balanced diet, weight management, glucose monitoring, infection control, etc.) is a highly prevalent issue resulting in patients with serious complications, and comorbidities of T2DM (Dahal & Hosseinzadeh, 2019).

The subject of health literacy relates to healthcare and outlines the need for clinicians to understand the efficacy of self-management. A health care provider's knowledge and implementation of various educational treatment tools and interventions for diagnosed patients will increase adherence to treatment and better healthcare outcomes (Protheroe et al., 2017). Research shows that health literacy highly impacts self-management behaviors, and emphasizes the need to address one's cognitive abilities to address personal motivation, and the ability to assimilate varying interventions (Dahal & Hosseinzadeh, 2019). Increased rates of health illiteracy rates are directly correlated with negative health outcomes leading to increased risks for disease complications and comorbidities (Dahal & Hosseinzadeh, 2019). The understanding of health literacy can better assist both the health care provider and patient relationships by establishing an intervention that is manageable and realistic while addressing the individual's

self-management and literacy abilities. Health literacy is a valuable concept to increase patients' knowledge of their type 2 diabetes diagnosis, and enhances personal autonomy and empowerment of self-care and self-management of one's chronic illness (Giovani Paes et al., 2022).

The high rates of T2DM among patients within the microsystem have been assessed through chart assessment and performed procedures such as limb amputation and further complications from poor treatment management. Measures will be identified using the seven-question survey, which will help identify treatment and education modalities that can be further implemented by registered nurses. Analyzation of data will assist in identifying the self-care tool and education subjects that are most under-utilized and will be used as information to create and improve one educational intervention to regularly address patients. This intervention will be a continued education management protocol that all registered nurses can continue using with patients.

This quality improvement project used the DMAIC framework model, which is a five-phase model that easily defined, measured, analyzed, improved, and controlled the data and interventions of self-care measure for those diagnosed with type two diabetes mellitus. The high rates of T2DM among patients on the surgical unit of Wildcat Hospital has been clearly assessed through chart assessment, and performed procedures such as limb amputation and further complications from poor treatment management. Measures will be identified using the SCODI 40-point survey tool, which will easily identify treatment modalities that are not being utilized by patients. Analyzation of data will assist in choosing the self-care tool that is most under-utilized, and will be used as information to create and improve one educational intervention to implement

with patients. This intervention will be a continued education management protocol that all registered nurses can continue using with patients.

Specific Aim and Global Aim

The specific aim of this quality improvement project was to identify the most commonly neglected interventions and education topics through implementation of a seven-question survey so that education directed at those interventions could be conducted before July 9th, 2023. Data was collected and discussed with participating nurses through point- in nursing education over a one-month time frame. This aim was specifically created to provide an educational component to nurses on how to more effectively implement this change into their patient care. The global aim of this quality improvement project is to improve the confidence and T2DM educational competencies to increase education and health outcomes of patients in the diagnosed with T2DM.

Methods

Context

This microsystem is a twenty-seven-bed unit that provides care to post-surgical patients as well as treating varied levels of disease and comorbidities. Patients are admitted to the microsystem from areas as far as the most Northern region of New Hampshire, in addition to other Seacoast hospital organizations. This is directly dependent upon the acuity of care and what other hospitals can or cannot do based on the immediate surgical and medical needs of the individual patient. In this microsystem, the target age range distribution of the surgical unit is ages 65 and older, and 40% of patients with complications relating to T2DM are men and 25% are women. The average length of stay is 5.28 days, and the mortality rate among patients with serious treatable complications after surgery was 125.61, which is not categorized as different

than the national average of other hospitals (*Find Healthcare Providers: Compare Care Near You | Medicare*, n.d.). Rates of complications for hip/knee replacements is 2.2% (.2% lower than the national average) and can be related to low health literacy levels and limited treatment adherence to T2DM. The International Diabetes Foundation (IDF) estimates that internationally, 425 people ages 20-79 are living with type 2 diabetes mellitus, causing 4 million deaths, and healthcare costs of 727 billion USD (Dahal & Hosseinzadeh, 2019).

The macrosystem is a private, tax-paying hospital. It is the only American College of Surgeons (ACS) quality verification program and level two trauma center located on the New Hampshire Seacoast (*About*, 2023). The organization has 184 beds and focuses on acute care with shorter-term stays (*American Hospital Directory - Portsmouth Regional Hospital (300029) - Free Profile*, n.d.). The microsystem stands by the overall mission and vision statement of the macrosystem, which is “to serve our community with innovative care delivered with compassion and a commitment to excellence.” (About, 1999). Their vision statement is “We will be recognized as a healthcare leader in New England, providing advanced care in a safe, healing environment” (About, 1999, para. 1). The expectation and outcome of care is that patients arriving from surgical procedures, the intensive care unit, emergency department, or other neighboring facilities receive the next level of treatment to safely transition them to outpatient services, such as rehabilitation, assisted living, or back into their home. Using both pharmacological and non-pharmacological interventions, the goal of care is to provide short-term assistance that offers thorough education and support (physical therapy, occupational therapy, nutritional education, etc.) so that patients can move forward in their healing and transition to the outpatient environment. The microsystem’s specialty is to focus on adults who are both

chronically and acutely ill and may have additional medical conditions and/or diseases before their surgical procedure, such as T2DM.

The most prominent patient survey used to gather information relating to post-surgical management of T2DM is performed by the orthopedic department, which includes follow-up calls and surveys via emails. This is a requirement by the hospital for them to maintain orthopedic surgical accreditation. Other forms of patient data and surveys are post-surgical infection rates relating to T2DM, types of antibiotics given as a prophylactic measure pre-surgery, and patients requiring catheter insertion post-surgery and for how long. Additional measures include monitoring blood glucose levels every four hours and tracking the number of patients requiring post-surgical anticoagulant therapy.

There is a large interdisciplinary team on the surgical unit consisting of registered nurses (five per shift), licensed nursing assistants, one clinical unit coordinator, one charge nurse, occupational therapists and physical therapists (one PT and one OT during day shift), a mobility aid, two pharmacists, two cleaning representatives, transport assistance between the hours of 7:00 am and 5:00 pm, one hospitalist, cardiologists, surgeons, one dietitian (day time), one case manager, and a clinical nurse leader and director of the unit. Registered nurses are full-time employees, and there are regularly scheduled travel nurses who obtain contracts for three to six months. Nurses hold bachelor's or associate's degrees, and the master's level nurse is the clinical nurse leader who is also the director and manager of the floor.

Employee satisfaction is high due to the positive culture of the unit. This is a team-oriented, highly committed staff who have a camaraderie that focuses on providing the highest level of care while embracing the connectedness shared between employees. There is no hierarchy, but a commitment to inclusivity, where each staff member strives to give open

communication, integrity, and continued support. They stand by a unit mission statement of “do not pass zone” meaning any time there is a call light on, no matter the assigned patient, employees are not to pass the lit call light without assistance. This level of care and integrity creates a culture of teamwork and positivity.

While the top five surgical diagnoses are laminectomy, orthopedic (shoulders, knees, and hips), cholecystectomy, appendectomy, and anterior cervical discectomy and fusion (ACDF), additional surgeries commonly performed are limb amputations due to type 2 diabetes mellitus complications and poor-adherence to disease management. Orthopedic surgeries often require additional treatment methods or repeat interventions due to infection of the joint, and sepsis derived from complications of T2DM.

One major complication of T2DM that often leads to amputation and is commonly seen in this microsystem is diabetic foot ulcers due to peripheral vascular disease of the lower limbs that are not properly managed. North America currently has the highest rates of diabetic foot amputations with an average cost of \$10.9 billion for the disease complication management (Raghav et al., 2018). Research continues to show that lower limb amputations are the result of poor disease management, frequently leading to infection and gangrene (Raghav et al., 2018). Further research can help determine the varying costs associated with amputation such as surgical costs, rehabilitation care, and insurance variances.

The subject of health literacy relates to healthcare and outlines the need for clinicians to understand the efficacy of self-management. A health care provider’s knowledge and implementation of various educational treatment tools and interventions for diagnosed patients will increase adherence to treatment and better healthcare outcomes (Protheroe et al., 2017). Research shows that health literacy highly impacts self-management behaviors, and emphasizes

the need to address one's cognitive abilities to address personal motivation, and the ability to assimilate varying interventions (Dahal & Hosseinzadeh, 2019). Increased rates of health illiteracy rates are directly correlated with negative health outcomes leading to increased risks for disease complications and comorbidities (Dahal & Hosseinzadeh, 2019).

The understanding of health literacy can better assist both the health care provider and patient relationships by establishing an intervention that is manageable and realistic while addressing the individual's self-management and literacy abilities. Health literacy is a valuable concept to increase patients' knowledge of their type 2 diabetes diagnosis, and enhances personal autonomy and empowerment of self-care and self-management of one's chronic illness (Giovani Paes et al., 2022).

Each registered nurse cares for six patients per shift, leaving limited time for education on T2DM disease management and evaluation of the individual patient's health literacy levels. As previously mentioned, a key process on the unit is four-hour blood sugar monitoring performed by a licensed nursing assistant (LNA). However, the unit is limited to two LNAs per 12-hour shift, with one of two LNAs sometimes reassigned his/her position to assist as a one-to-one with a mental health patient or floated to a different unit. This microsystem does not have a diabetic educator on staff, and there are no screening methods utilized to assess risk factors or serious disease complications among patients with T2DM.

The microsystem specialty is to focus on adults who are acutely ill and may have additional medical conditions and/or diseases before their surgical procedure. In addition to acute care, this microsystem also focuses on care that is chronic, preventative, and occasionally palliative. Type two diabetes mellitus is the primary chronic disease that will be discussed in the methods section of this quality improvement project. Key metrics and performance indicators

relating to T2DM include insulin administration throughout the day depending on the specific needs of the patient's treatment plan. Patients with T2DM have blood sugar monitoring (glucose readings) performed every four hours by their assigned licensed nursing assistant.

Intervention

The foundational components of the intervention were based on multiple research studies indicating the positive correlation between increased health literacy rates and the treatment of T2DM. Diabetes is a chronic disease that requires a holistic approach, in-depth understanding of self-care, education comprehension, and an effective relationship between healthcare professionals and the individual patient (Saeed et al., 2018). The intervention was to have registered nurses incorporate concrete diabetic education into individual patient care. The design of the intervention was to create a greater understanding among individuals diagnosed with type two diabetes, developing greater personal autonomy, empowerment, and effective self-management tools.

The original intervention for this quality improvement initiative was to establish greater self-management and autonomy among patients with type 2 diabetes using the Self Care of Diabetes Inventory (SCODI) tool. The Self Care of Diabetes Inventory (SCODI) tool is a 40-point self-evaluation questionnaire asking various questions on T2DM treatment adherence, which would have generated data showing specific areas of health illiteracy and low treatment adherence. This intervention was to address the patient's ability to verbalize important management of type two diabetes, in addition to understanding the risk factors that can occur with poor adherence to interventions. Due to the Institutional Review Board's concerns for the vulnerable patients, the macrosystem advised the project leader to gather data from nurses caring for patients, which will further nursing education to patients. A new intervention and process

was created, which gave nurses a greater understanding of health literacy while addressing the care and management of patients diagnosed with type two diabetes. The newly designed intervention was a one-on-one educational component at the point of care, which addressed both health literacy levels and how to incorporate more diabetic management and education for patients diagnosed with T2DM.

Much of the research shows that health literacy tools and education relating to self-care through glucose monitoring and glycemic control are still primary areas that lack evidence-based research and execution of interventions (Dahal & Hosseinzadeh, 2019). This would promote greater health outcomes specifically evaluating healthy literacy interventions that will have the greatest impact on self-management and treatment adherence (Dahal & Hosseinzadeh, 2019). Limited education, poor attitudes, and lack of consistent intervention management among patients continue to play a significant role in poor health outcomes and disease complications related to T2DM (Rahaman et al., 2017).

Data resulting from the implementation of nurse education revealed the educational challenges and highest rates of difficulty relating to treatment measures. This assisted in creating one educational component to address with nurses who will ultimately implement patient education. This intervention addressed the patient's ability to verbalize important management of type two diabetes, in addition to understanding the risk factors that can occur with poor adherence to interventions. Data will clearly outline important self-care measures relating to treatment non-adherence, which will assist in creating educational components to address with patients and nurses. This intervention will also encourage nurses to assess the patient's ability to verbalize important management of type two diabetes, in addition to understanding the risk factors that can occur with poor adherence to interventions. The timeframe will include one

month of data collection, followed by educating nurses regarding the most common missed educational topics and interventions during the following month. The intervention will enhance nursing awareness of health literacy levels among patients, in addition to creating more confidence among nurses and directing educational topics to patients.

Multiple research studies show that health illiteracy among patients with T2DM is a major risk factor for poor treatment adherence and conceptualization of the disease progression (Saeed et al., 2018). The proposal addressed the nurses' ability to verbalize important management of type two diabetes, in addition to understanding the risk factors that can occur with poor adherence to interventions.

Increasing health literacy and treatment adherence will hopefully be an initial step in reducing the number of amputee diagnoses and admission rates. This disease requires an understanding of in-depth care, education, and management; therefore, important subjects regarding education and treatment methods performed by nurses will be assessed. This includes glycemic control measures, diet, exercise, pharmacologic interventions, comorbidities and associated risk factors (smoking, alcohol consumption, etc.) and barriers to consistent treatment measures.

Study of the Intervention

This original survey intervention (SCODI) tool was intended to be utilized to create data showing specific areas of health illiteracy and low treatment adherence by addressing a variety of self-care measures that are required for effective treatment of T2DM (*Self-Care of Diabetes Inventory | Self Care Measures*, n.d.). A new seven-question survey was created to address important areas of diabetic management, which ultimately assisted registered nurses in visualizing the most critical areas/interventions to address with patients. The intention and goal

of this quality improvement initiative is to create a starting point for a more efficient and direct model of education relating to T2DM management. The patient's level of health literacy was also evaluated by nurses, which gives the ability to individualize education and management of type two diabetes, in addition to understanding the risk factors that can occur with poor adherence to interventions. Four major topics are measured, self-care maintenance, self-care monitoring, self-care measurement, and nursing self-confidence (Ausili et al., 2017).

Measures

A seven-question survey was created and answers were given as "yes" or "no". Each question was designed to assess the nurses' ability to address the patient's mental, physical, and emotional states resulting from their T2DM diagnosis. For example, registered nurses were asked about specific self-care measures they addressed with patients, in addition to their individual comfort level regarding discussion of the complications and seriousness of a T2DM diagnosis. Survey questions also addressed the varying education methods that nurses do or do not implement when educating patients. This area was important to address as the age differences of nurses can affect how patient education is delivered. Collecting this data was valuable for easy dissemination of trends and areas that needed improvement. This microsystem often uses data collection through survey distribution therefore data was collected at zero cost. Specific survey questions were chosen based on the severity of T2DM complications, and the direct observation of minimal nurse to patient discussion and education methods. The simplicity of a seven-question survey allowed for an efficient assessment of nursing education for patients with T2DM. Data collection was followed up with a one-on-one conversation with each nurse to evaluate and discuss their reasonings for limited education and level of comfort relating to disease management with the intention that overall, at least 75% of registered nurses would

implement more patient education and discussion of disease complications. Point-of-care conversations were also included to further evaluate how nurses were implementing education after discussion of data. As this survey was completed by the project leader, no psychometric testing was performed, which is a limitation.

Analysis

Descriptive statistical analyses for categorical data noted frequency and percentage. Qualitative data was collected and analyzed in the form of the nursing verbalization and completed answers within the seven-question survey noting themes in their comments and feedback.

This quality improvement project involved a low cost and was specifically focused on effective disease interventions and educational resources distributed to registered nurses. The cost of materials is limited to one ream of 8x10 white paper for the printing of surveys equating to \$5.99.

Ethical Considerations and Funding

Because this project was changed to focus on healthcare professionals, there were limited ethical considerations. No funding has been given to support the project; therefore, financial bias is exempt. Conflict of interest is considered as the individual performing this quality improvement project accepted a position on the surgical unit before conducting the necessary research and data analysis. This QI project was reviewed by the University of New Hampshire Department of Nursing Quality Review Committee to attest that it is exempt from Full Institutional Review Board Approval.

Results

Results

Survey Distribution and Data Collection

Data effectively showed the highest rates of difficulty relating to education and treatment measures, which will assist in creating one educational component to address with nurses who will ultimately implement patient education. This intervention addressed the nurse's ability to verbalize important management of type two diabetes, in addition to understanding the risk factors that can occur with poor adherence to interventions. Lastly, this intervention created a dialogue as to what factors contributed to the nurses' inability to incorporate simple and effective diabetic education to their patients. It is intended to be adaptive based on staff responses and results after the initial implementation of diabetic information.

Results were based on the understanding that diabetic education and enforcement of self-care management needed improvement when providing patient-centered care. The DMAIC model was further initiated after the change of intervention, which incorporated nursing education, evaluation of patient health literacy levels, and the opportunity for registered nurses to discuss basic diabetic care and treatment/interventions with individual patients. A new seven-question survey was initiated, and directed to twenty-five nurses evaluating their understanding of diabetic education processes, and was implemented and prioritized within nursing care.

After the completion of the data, an individual discussion with each nurse was conducted. This method allowed nurses to individually discuss questions and comments, without feeling targeted or singled out in a group. While more detailed and organized improvement initiatives should follow, the intention was to initially create a dialogue emphasizing the lack of diabetic care and educational processes for patients with type two diabetes mellitus. Additionally, there was a high patient to nurse ratio and lack of collaboration from the interdisciplinary team (no

diabetic educator) and nurses expressed a “what’s the point” mentality regarding their desire to offer thorough education to patients.

Demographics

Thirty-one full-time registered nurses work in this microsystem including contracted travel nurses, and fifteen of those nurses completed the survey. The amount of time that each nurse has had their license ranges anywhere from one year to thirty-two years, and represents ages from twenty-three to fifty-seven years old. The type of nursing degree held by the nurses on the unit is either an associate’s degree or a bachelor’s degree, and each registered nurse has approximately six patients each day. Out of the twenty-five nurses who participated in answering the survey questions, sixteen hold associate degrees in nursing and nine nurses have bachelor’s degrees.

Note in Table 1, 71% of registered nurses fall within the specific population labeled, millennials, which can affect how patient education is delivered. For example, this age-range has utilized more social media platforms versus older demographics that may revert more to printed education and textbook understanding.

Table 1.
Demographic Data

Category	Sub-Category	Frequency (N)	Percent (%)
Sex	Male	6	19
	Female	25	81
Age	Less than 25	3	10
	Between 25-34	22	71
	35-45	3	10
	45-60	2	9
Education	Associate’s degree	20	65
	Bachelor’s degree	11	35

Table 2 shows that nurses answered yes to more direct questions relating to self-care measures, but answered no to questions more related to a patient's mental and emotional feelings regarding their diagnosis.

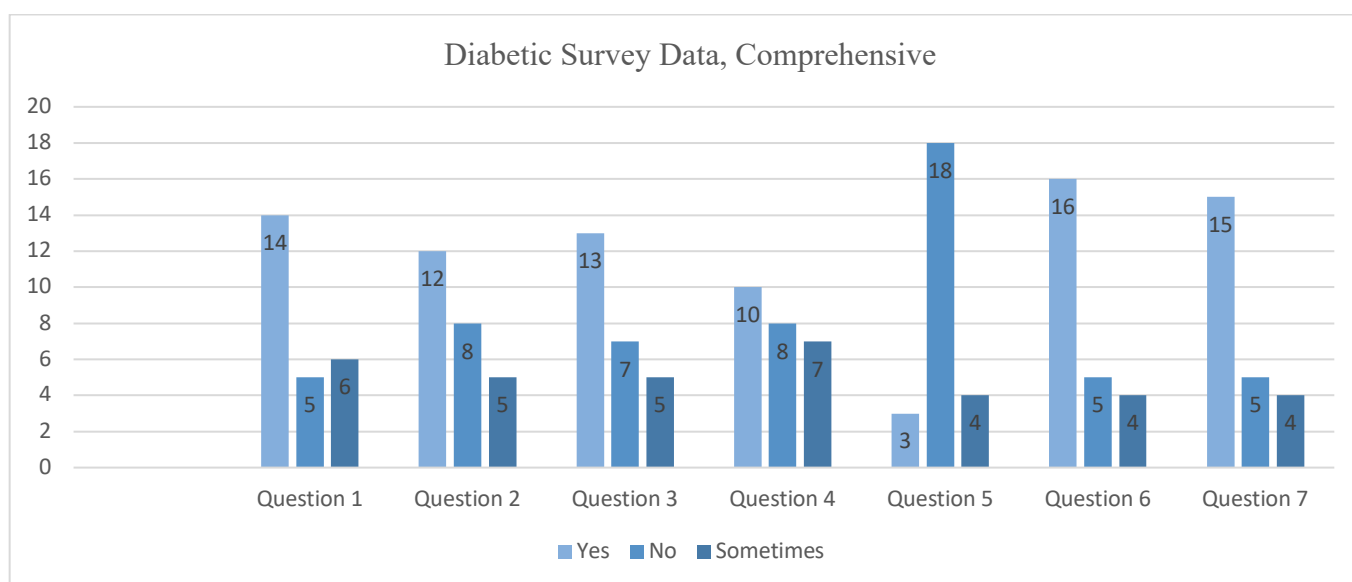
Table 2.
Qualitative Data, Measures, and Outcomes

Survey Questions	Total Sample (N=25) n (%)
1. Do you utilize the T2DM discharge information/fact sheets when offering discharge education?	
Yes	14 (58)
No	5 (20)
Sometimes	6 (24)
2. Do you discuss self-care management and measures of T2DM with patients?	
Yes	12 (43)
No	8 (32)
Sometimes	5 (20)
3. Do you ask patients how often they check their blood sugar levels?	
Yes	13 (52)
No	7 (28)
Sometimes	5 (20)
4. Do you discuss additional educational resources that patients can utilize regarding their T2DM?	
Yes	10 (40)
No	8 (32)
Sometimes	7 (28)
5. Do you feel comfortable emphasizing and discussing the serious complications of not managing T2DM?	
Yes	3 (12)
No	18 (72)
Sometimes	4 (16)
6. Do you discuss how the patient's diagnosis of T2DM has changed their life since their diagnosis?	
Yes	16 (64)
No	5 (20)
Sometimes	4 (16)

7. Do you inquire about self-compliance of the patient's diabetic medication regimen?	
Yes	15 (60)
No	5 (20)
Sometimes	4 (16)

Figure 1 shows that 72% of the participants do not feel comfortable when discussing the serious consequences of T2DM with their patients.

Figure 1.
Bar Graph: Nurse Ratings of Survey Distribution

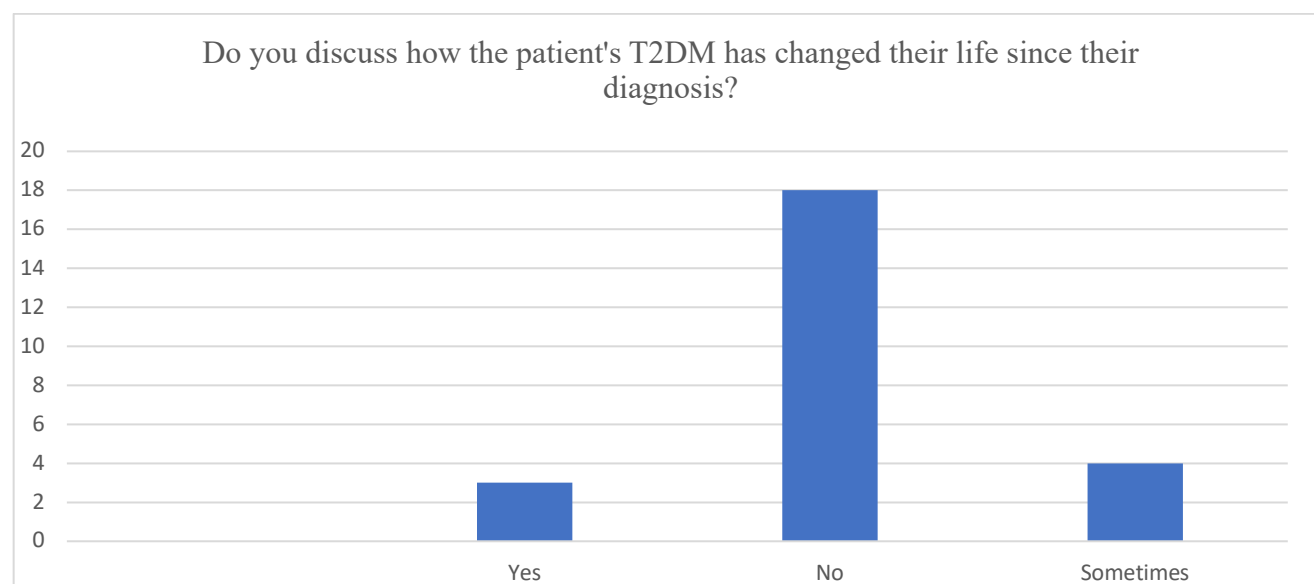


As previously noted, the area with the question number five, “Do you feel comfortable emphasizing and discussing the serious complications of not managing T2DM?” resulted in a significant response of “no’s” (72%), indicating that nursing confidence levels need to be evaluated and addressed. According to a post-survey discussion, registered nurses expressed that to further implement education on T2DM management and to properly evaluate patient health literacy levels, they expressed a need for more time for patient education methods during their shift. Nurses repeatedly expressed their concerns regarding the unrealistic patient-to-nurse ratio, which creates major time restrictions and does not allow for any patient education.

Complications

Figure 2 identifies that 72% of nurses do not feel confident in their ability to discuss the patient's life changes, consequences and feelings towards their diagnosis.

Figure 2.
Survey Question Five, Patient Education and Seriousness of T2DM



Unintended Benefits

One common unexpected benefit was the shared belief that more assistance and resources for diabetic management should be implemented. This project highlighted the need to implement this kind of education into everyday care, which could ultimately decrease patient readmissions, additional co-morbidities, and patient expenses. Additionally, a narrative-based delivery of data allowed for greater rapport, trust, and relationship-building among individual team members within the microsystem. Point-of-care education can be effective. It gives more meaning to the issue at hand because it provides context and is often a kind of education used within the quality improvement process (*Point-of-Care Specialist* | *myADLM.Org*, n.d.).

Unexpected Consequences

On the contrary, a narrative-based delivery in the nurse's station environment was often distracting without the ability to stay focused. This time is often spent charting, participating in practitioner rounds, and completing additional tasks specifically related to that day's patient care. While one-on-one conversation between two co-workers can be effective, it often takes away focus from the initiative and may leave room for discussion errors and mismanaged information. Narrative-based delivery processes also give data that may not be defined definitively.

Discussion

Summary

Key Findings

Key findings indicate that a more focused, and thorough educational protocol regarding self-care interventions of T2DM must be implemented. The original specific aim of this project was to create data showing specific areas of health illiteracy and low treatment adherence of patients using the Self Care of Diabetes Inventory (SCODI) tool. Due to time constraints and the inability to avoid ethical conflict among patients, a new specific aim was created. The modified specific aim of this quality improvement project was to identify the most commonly neglected interventions and education topics in nursing education and to provide an educational component to nurses on how to more effectively implement this change into their patient care. This was achieved through distribution of a seven-question survey to better understand ways in which nurses were not incorporating important educational components within daily patient care. The quality improvement project stated the specific aim was to identify the most commonly neglected interventions relating to self-management of patients diagnosed with type 2 diabetes mellitus and to provide an educational intervention on how to implement this change into their daily lives. Nursing staff on both morning and evening rotations were educated on the

importance of implementing diabetic education into patient care, and what key components were missed throughout treatment. Discussion with registered nurses also included key diabetic teaching materials based on patient findings, and relevant materials within the medical record system. Ways to find material were further discussed and explored, emphasizing the importance of providing education and instructions to patients dependent upon their health literacy level. The most significant data indicated that registered nurses need more time with each patient to discuss important treatments and interventions. Additionally, a stronger collaboration between the interdisciplinary care team members (diabetic educator, physician, physical and occupational therapist) will create better healthcare outcomes and finally, a greater emphasis on proactivity and prevention of diabetic education is necessary. The global aim of the quality improvement project was to ensure registered nurses implement an educational component for all patients diagnosed with T2DM. In order to identify whether this was implemented, further initiatives with a more structured and specific framework needs to be created. Point-of-care discussion does not produce sufficient data as to whether educational components were addressed with individual patients.

A seven-question survey was distributed to twenty-five nurses, both morning and night shift, which highlighted important T2DM self-care management tools, and various themes regarding why education of T2DM is not a priority within this microsystem. Additional items such as acceptance of one's T2DM diagnosis and serious complications as a result of untreated T2DM were areas that nurses may or may not prioritize related to patient emotional and mental well-being. A major barrier to implementing thorough and consistent diabetic treatment education was the lack of time nurses had due to high patient ratios and increased levels of acuity. Registered nurses discussed their inability to make connections with patients because

they are more task-focused instead of taking time to start a dialogue on the serious consequences of T2DM. Another barrier to offering quality education is the shared tasks between nurses and licensed nursing assistants (LNAs). For example, LNAs are in charge of getting patient blood sugars, which leaves a gap in care between registered nurses and patients. A blood sugar check and potential dose of insulin based on sliding scale values simply becomes a number and a task as opposed to addressing reasons for the hyperglycemia. Finally, the number of patients admitted with a diagnosis of T2DM is so substantial, that registered nurses expressed their burnout and discouragement regarding patient education. The “what’s the point” mentality is a common theme assessed within the unit, and may continue to arise without a diabetic educator and increase patient-to-nurse ratios. By contrast, the majority of nurses answered no or sometimes to the question, which prompted patients to discuss their self-care treatment regimen.

The survey data shows that each diverse area of diabetic management needs to be further addressed and implemented more among nursing staff. Individual interventions need to be re-established during discharge teaching, and incorporated into all areas of patient care. As previously mentioned within the problem description, without a diabetic educator on staff within the microsystem, patients get little to no education regarding the management of their type two diabetes diagnosis.

The seven-question survey responses highlighted a variety of important variables regarding treatment methods that are often missed during patient teaching and care. Findings show that emotional, mental, and procedural education topics all need to be further implemented when directly educating patients. This project and information discovered during the DMAIC model show key areas in which nurses can prioritize. To implement a more focused plan regarding diabetic education, a simple and structured system needs to be incorporated. Creating

a standardized list of one to two interventions during care and discharge teaching established greater confidence levels among nurses, which ultimately led to greater treatment methods discussed with patients.

The nurse-patient ratio is six patients to one registered nurse, which does not allow for important education and intervention methods among patients diagnosed with T2DM. Data and discussion with nurses showed that instead of taking time to discuss how this diagnosis has impacted a patient's life and what treatment methods individuals are practicing outside of the hospital environment, time is focused more on medication administration and following numbers on the glucose monitoring device. More time could result in more effective care, which ultimately leads to fewer hospital readmissions.

Treatment of any chronic disease requires an interdisciplinary approach from various healthcare professionals. Each member of the team has a unique specialty that assists patients in their stabilization. As previously stated, the macrosystem does not have a diabetic educator on staff, which removes a significant part of the patient education experience and negatively impacts an individual's understanding of their disease progression. Registered nurses do not want to carry all of the responsibility of diabetic education and rely on other specialties to assist in patient care.

The varying ages of nurses can lead to a significant difference in how education is disseminated. For example, older nurses are more apt to learn and educate others using books, and written documents, whereas younger nurses who acquired degrees during the more recent digital age rely on online methods such as applications and research methods. Age differences may also affect degrees of confidence levels when teaching and the quality of education delivered.

The most significant key finding of this quality improvement project was that nurses focus more on disease treatment versus proactivity and prevention of further disease progression. This finding is directly related to the discomfort that registered nurses expressed regarding discussing a diagnosis of T2DM with patients and the seriousness of disease complications. As noted in the results section, the data showed that 72% of registered nurses said they were not comfortable talking about self-care interventions with patients diagnosed with T2DM. This data discussed nurses' discomfort with emphasizing the serious complications of not managing T2DM. Due to this significant quantitative data, results indicated important next steps of quality improvement processes to ensure nurses gain confidence and begin discussion of treatment measures with individual patients. The assistance and collaboration of all members of the interdisciplinary care team members will also need to be addressed.

Relevance to the Rationale

The DMAIC model was useful in confirming and identifying barriers in the discharge process. The planning phase involved the unit clinical nursing leader in addition to identifying needed areas of improvement regarding education on T2DM interventions. Research and evaluation of health literacy among patients better identified the current needs for education materials during the discharge process and how the nursing staff could better incorporate this knowledge into patient-centered care. The action phase included a survey given to all staff members involved in educating patients and starting a deeper dialogue with those diagnosed with T2DM. When evaluating survey findings and discussion, it was determined that a more precise way of finding educational materials within the EMAR would be helpful and utilized more frequently if there was more of a focus and understanding of individual interventions needed for patients.

Project Strengths

A major strength of this quality improvement initiative was highlighting the need for increased initiation of treatment and intervention management for patients diagnosed with T2DM. Nurses are often focused on other acute needs of patients, therefore missing the importance and significance of addressing daily self-care measures that can create greater health outcomes for those diagnosed with T2DM. There is a new understanding and confidence regarding how to implement educational methods and conversations with patients, in addition to locating additional resources within the EMAR system that can provide simple, structured education to patients of varying health literacy levels. Further quality improvement initiatives and goals would be a continuation of more detailed teaching, and to implement tracking systems within the medical record system in patient charts. This could establish reminders and higher levels of compliance among nurses, which ensures they enforce diabetic interventions and management with individual patients diagnosed with T2DM.

Additionally, nurses were educated on the various approaches to diabetes management, which include a holistic approach, in-depth understanding of self-care, education comprehension, and an effective relationship between healthcare professionals and the individual patient. Cultural competencies and social determinants of health were additional components of health literacy that healthcare professionals can incorporate into care and discharge education.

Interpretation

This quality improvement project evaluated nurses' confidence levels regarding patient education for those diagnosed with T2DM. A variety of treatment interventions were discussed to initiate more thorough education methods that address a patient's mental, physical, and emotional well-being. While data showed that nurses do not feel confident in discussing the

severities of a T2DM diagnosis, further initiatives need to be developed to make any significant change in patient education and self-care measures.

Project Limitations

Multiple limitations were noted when analyzing this quality improvement initiative. First, there was a limited structure of how the data was disseminated to each nurse, which also included a small sample size of participants. Second, the delivery of data was not structured or concrete, and learning materials would have been more efficient and streamlined. Finally, a point-of-care survey distribution limits the completeness and factual components of the findings.

Conclusion

As previously stated, there is no diabetic educator within the microsystem, which gives limited time for registered nurses to incorporate this topic into their care. Additionally, the majority of patients are admitted for other diseases and acute diagnoses, and T2DM is a previous diagnosis that often goes unnoticed or is not the primary focus. The limited resources and lack of care initiated for a disease that results in serious healthcare issues (limb amputation, necrosis, and increased funding for both organization and funding) shows an opportunity for improvement in the care of persons with T2DM. The intention and goal of this quality improvement initiative was to create a starting point for a more efficient and direct model of education relating to T2DM management. Registered nurses are at the beginning and endpoint during patient care; therefore, it is imperative to begin additional initiatives that encourage nurses to have more time, and comfort to discuss T2DM self-care management in addition to the mental health issues that arise with such a serious diagnosis.

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