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Examining Clinicians' Perspectives Screening for Depression in Patients with Type 2 Diabetes Mellitus

Vickie Lavette Bland
Walden University

Walden University

College of Social and Behavioral Sciences

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Vickie Lavette Bland

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Dr. Rachel Piferi, Committee Chairperson, Psychology Faculty
Dr. Jason Etchegaray, Committee Member, Psychology Faculty
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Abstract

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Dissertation Submitted in Partial Fulfillment

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Abstract

The United States has a significant diabetes problem. This chronic disease affects the body physically and mentally. One of the emotional effects of diabetes is depression. Depression is often present in individuals with diabetes, chiefly in those with type 2 diabetes mellitus (T2DM). While depression is common in T2DM and can interfere with treatment adherence, clinician screening for depression in T2DM patients is low. The purpose of this study was to examine clinicians' attitudes, behaviors, and perceptions concerning screening patients with T2DM for depression. Through a qualitative case study approach centered on reasoned action theory, 3 physicians and 5 nurse practitioners who treated T2DM patients were interviewed. The clinicians were interviewed regarding their screening experience for T2DM for depression. Interviews were recorded, transcribed and analyzed using thematic analysis. Three themes emerged from the data to explain clinicians' screening of T2DM patients for depression: 1) clinicians' focus on treating the physical disease of diabetes rather than comorbid depression, 2) T2DM depression screening is accepted as a standard of care or part of the clinical assessment process, and 3) there is favorable perception of peer approval for T2DM depression screening. Implications for social change relate to the need for those with T2DM to receive effective and efficient screening and treatment for depression. The role of diabetes clinicians could provide a consistent point of care for screening and referral for filling this need. Development of best practice guidelines and relevant education supporting this role could be pivotal in addressing the complication of depression in T2DM.

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Chapter 1: Introduction to the Study

Diabetes is a chronic disease that is a severe global health problem. In 2010, the International Diabetes Federation provided statistics showing that 330 million individuals have diabetes worldwide. (Centers for Disease Control and Prevention [CDC], 2014). The occurrence of diabetes in Western societies is rapidly rising, and global healthcare expenditures for diabetes are expected to total $490 billion by 2030 (CDC, 2014). In the United States, diabetes effects many people, and Type 2 diabetes in young adults is growing at an alarming rate (CDC, 2015). Diabetes affects an individual's physical and mental health, life expectancy, and can cause physical complications (CDC, 2014) that lead to depression. Depression is a comorbid disease with diabetes (Heckbert, Rutter, Oliver, Williams, Ciechanowski, Katon, & Von Korff, 2010), meaning that depression can present simultaneously in a patient living with diabetes.

This study focused on depression in adults with Type 2 Diabetic Mellitus (T2DM) and indicated how physicians screen patients with T2DM for depression. This chapter provides background information concerning T2DM and depression. The next section addresses the statement of the research problem, the purpose and nature of the study, and the research questions. I also discuss the research methodology, definitions, assumptions, scope, delimitations, limitations, and significance of the study, and end with a summary of the chapter.

Background

In the United States, 30.3 million people, or 9.4% of the population, have diabetes. T2DM accounts for 90% to 95% of those living with diabetes (CDC, 2017).

Diabetes is diagnosed in individuals of all ages each year. According to the CDC (2017), diabetes rates as the seventh leading cause of death in the United States. The financial cost of diabetes in the United States was assessed to be $176 billion in direct health costs, such as medical services, and $69 billion in indirect expenses from missing workdays, limited activity, disability, and early mortality (CDC, 2014).

Diabetes is a metabolic disorder caused by genetic and environmental factors that lead to an unusually high blood sugar level know as diabetes mellitus (DM), which indicates impaired insulin secretion. Insulin secretion is a process in the human body that primarily occurs in response to glucose levels becoming elevated in the blood. Insulin resistance increases the hepatic production of glucose, making insulin levels inadequate to normalize plasma glucose levels. Causes of diabetes include heredity, poor diet, lifestyle, gender, stress, and lack of exercise (CDC, 2014).

Individuals with parents who have diabetes are most likely to develop the disease, and the incidence of diabetes seems to increase with age (CDC, 2015). Dietary deficits in fiber, protein, and overall nutrition may contribute to diabetes. A lifestyle that does not include regular exercise and includes high stress may contribute to developing diabetes (CDC, 2015). Ethnic groups including African Americans, Hispanics/Latinos, Indians, Asians, and Native Hawaiians or Pacific Islanders are at a higher risk for developing T2DM than Whites (CDC, 2014).

Depression is one of the complications of T2DM and is two to three times more prevalent in persons with T2DM than in the general population (Carpenter, 2010). Individuals with T2DM have an increased likelihood of developing a major depressive

disorder, debility, health deterioration, high healthcare expenditures, and premature mortality (O'Connor, Crain, Rush, Hanson, Fischer, & Kluznik, 2009). Signs of individuals with T2DM depression involve a decline in sexual desire, alteration in appetite, and sleep alteration.

Feeling sad for more than two weeks is considered the onset of depression (Yim, Adelina, Tsang, & Leug, 2009). Antidepressants and counseling have shown to effectively reduce major depression and improve glycemic control in a person with T2DM (Yim et al., 2009). Individuals with depression may display anger and guilt; both are commonly seen in people with chronic diseases like diabetes (Ahlin & Billhult, 2012). Depression in the T2DM population is also related to poor health-behavior compliance, which can negatively affect disease management (Ducat, Philipson, & Anderson, 2014). The medical costs for treating individuals with T2DM in the United States is $10,016 annually (Bogner & de Vries McClintock, 2016). An individual diagnosed with T2DM depression may have medical costs of approximately $15,155 for annual medical treatments (Egede, Walker, Bishu, & Dismuke, 2016). Individuals with T2DM and unrecognized depression could result in medical cost of approximately $16,134 for annual treatments (Bogner & de Vries McClintock, 2016). Additionally, individuals with T2DM and asymptomatic depression incurred a medical cost of approximately $20,105 for annual treatments (Egede, Walker, Bishu, & Dismuke, 2016).

A comprehensive approach to treating individuals with T2DM might prove beneficial to treating the onset of disease complications; however, the American Diabetes Association's (ADA) national guidelines for treating individuals with T2DM currently do

not include screening patients for depression (National Diabetes Statistics, 2011). It is recommended that individuals with chronic diseases change their daily routines to manage their chronic illness. T2DM is a chronic disease that requires individuals to incorporate new methods to accommodate the complications of their illness, which can sometimes lead to depression (Mezuk, 2011). Recommendations to assist individuals diagnosed with T2DM are maintain a healthy lifestyle include exercise regimens, preparation of specialized meals, and following time schedules for medications; these requirements can cause high-stress levels as individuals with diabetes work to regulate their bodies' glucose (Heckbert et al., 2010).

Individuals with diabetes are more likely to experience depression and diminished health than those without diabetes (Egede & Ellis, 2010). Depression can emerge in individuals with T2DM due to the prolonged stress that can result from living with a chronic illness (Egede & Ellis, 2010). Adopting a comprehensive approach to treating individuals with T2DM may prove beneficial to treating the onset of disease complications that may result due to bouts of depression.

Problem Statement

Despite an abundance of research that examined the relationship between diabetes and depression in the general population (Yu, Y-Hua, & Hong, 2010), there is no research that examines managing depression in patients with T2DM. Additionally, there are no studies that have examined physicians' depression-screening behavior during routine medical examinations for diabetes. Due to this lack of research, there is still a

need to examine physicians' attitudes and behaviors concerning screening individuals with T2DM for depression.

Because physicians lack the practice of depression screening, individuals with T2DM are often undiagnosed during the early stages of depression onset (Culman, Guja, Mihai, & Serafinceanu, 2013), resulting in disease management being compromised for these patients (Culman, Guja, Mihai, & Serafinceanu, 2013). Researchers have demonstrated a connection between diabetes and depression; however, screening for depression in individuals with T2DM is unlikely to occur (Heckbert, Rutter, Oliver, Williams, Ciechanowski, Lin, Katon, & Von Korff, 2010). Therefore, it is essential to establish criteria for adequate treatment of individuals with T2DM who suffer from depression, which could lead to improving their quality of life (Pouwer, 2017). Based on Connor, Crain, Rush, Hanson, Fisher, and Kluznik (2009), research revealed that depression and diabetes have a bidirectional relationship, which shows the importance of managing T2DM depression. Many physicians fail to treat the psychosocial and emotional difficulties of T2DM (Beverly, Hultgren, Brooks, Ritholz, Abrahamson, & Weinger, 2011). There is an important need for physicians to recognize depression in patients with T2DM (Culman, Guja, Mihai, & Serafinceanu, 2013). Screening for depression and providing integrating psychosocial and behavioral healthcare to T2DM patients could ensure that physicians manage both diseases (Egede & Ellis, 2010).

According to Beverly et al. (2011), physicians reported limited patient-treatment choices, time limits of patient appointments, and a lack of mental disorder expertise, leading to feelings of frustration, inadequacy, and being overwhelmed. The development

of efficient psychological testing and short-term psychosocial interventions that doctors used were essential to individuals' health; however, they should not replace mental well-being referrals (Beverly et al., 2011). Medical preparation and training should address psychosomatic complications that frequently occur in patients with prolonged illnesses. Doctors and patients may benefit from a multidisciplinary team method in which team members supplement care by providing assessment and treatment for patients' psychosocial and emotional complications (Beverly et al., 2011).

From economic, public health, and humanitarian standpoints, identifying and treating mental health comorbidities among diabetes patients should be a priority (Ducat et al., 2014). Individuals with T2DM are particularly vulnerable to mental health comorbidities, as they experience challenges in their ability to maintain an average glucose level and risk a medical loss to follow-up on poor health outcomes. Creating an opportunity to integrate mental health screening and treatment into multidisciplinary team care for T2DM could improve patient and public health outcomes and help decrease healthcare expenditures (Ducat et al., 2014). According to ADA (2014) standards of care, people with T2DM should receive medical attention from a panel of healthcare professionals that includes physicians (medical practitioners, general practitioners, and internal medicine), nurse practitioners, physician's assistants, nurses, dietitians, endocrinologist, pharmacists, and psychiatrists with expertise in diabetes.

A limited number of diabetic clinics offer mental health screening or incorporate mental and behavioral health services for T2DM in diabetes clinical care (Garrusi, Baneshi & Moradi, 2013). According to Ducat et al. (2014), it is neither realistic nor

affordable to use standardized psychiatric diagnostic interviews to diagnose mental health comorbidities in individuals with T2DM. T2DM depression interferes with individuals' disease management, and there is a need to identify screening behaviors among physicians. Understanding the clinicians' viewpoints as to why physicians may or may not screen T2DM patients for depression could result in the development of a T2DM screening plan to treat both T2DM and depression.

Purpose of the Study

The purpose of the study was to examine clinician behaviors and attitudes towards screening for depression in patients with T2DM. In this qualitative study, I explored how doctors describe their perspectives and behaviors relating to depression screening in their patients with T2DM.

Research Questions

The investigation questions that guided this study were:

1. How do physicians and nurse practitioners describe their attitudes toward screening T2DM patients for depression?
2. How do physicians and nurse practitioners describe their T2DM depression-screening behaviors?
3. How do physicians and nurse practitioners describe their perceptions of whether their peers support screening T2DM patients for depression?

These open-ended questions align with tenets guiding on qualitative inquiry (Creswell, 2007). The questions served as a structure to engage the participants as explored by the

clinician's perspective and behavior when screening individuals with T2DM for depression.

Conceptual Framework

Scholars have used the theory of reasoned action (TRA) to explain a range of clinical practices among physicians and other healthcare professionals (Ajzen & Fishbein, 1980). TRA is a model used to explain behavior that emphasizes behavioral intention, attitudes, and subjective norms (Ajzen & Fishbein, 1980). Behavioral intention measures the probability that an individual would participate in a particular behavior or harbor the intent to implement or not implement a given behavior (Ajzen & Fishbein, 1980; Thrasher, Andrew, & Mahony, 2011).

The behavioral intention has two factors, one individual in nature and the other reflecting social impact. The personal influence is the individual's positive or negative assessment of executing the behavior or attitude regarding the behavior (Ajzen & Fishbein, 1980, p. 6). Attitude or viewpoint refers to the degree to which an individual has an encouraging or undesirable assessment or review of the behavior in question. Personal norms relate to an individual's beliefs about whether peers and individuals of importance believe they should engage in the behavior (Thrasher et al., 2011). An individual may evaluate viewpoint and personal norms directly or indirectly. The direct assessment of attitude is the overall evaluation of conduct. The indirect assessment rests on a person's beliefs that engaging in the behavior aligns with specific consequences (behavioral beliefs), weighed by evaluating that result (Ajzen & Fishbein, 1980, p. 6).

A behavioral view of screening people with T2DM for depression may result in the likelihood that screening would enhance patient health choices and may be weighed by the person's evaluation that the behavioral outcome of improving the health of individuals with T2DM is good (Ajzen & Fishbein, 1980). The direct assessment of attitude is the overall evaluation of the behavior (screening a T2DM patient for depression is right or wrong). An indirect assessment of a person's attitude is related to the individual's belief that engaging in the behavior is associated with specific consequences (behavioral beliefs), weighed by an evaluation of that result (Ajzen & Fishbein, 1980).

The direct measure is the individual's overall evaluation of whether social referents approve or disapprove of behavior (Ajzen & Fishbein, 1980). The secondary measure is the person's belief that each specific referent endorses or rejects behavior, weighed by the individual's motivation to comply with referents' perspectives. Clinicians' opinions of colleagues' endorsement or lack of endorsement of screening those with T2DM for depression are likely to influence their motivation to screen. I used TRA, which was the foundational theoretical model for this study. It is useful as an analysis of clinicians' intention to screen T2DM patients for depression. I explored how doctors and nurse practitioners describe their perspectives and behaviors relating to depression screening in their patients with T2DM.

Nature of the Study

This qualitative case study focused on how clinicians screen patients with T2DM depression. Purposive sampling, in-depth interviews, and semi-structured questions were

used in this research (Creswell, 2007). Focus groups were not considered in this study because I wanted the participants to discuss their experiences in a private setting and avoid the tendency of not being completely honest because of what others in a group setting might think.

Quantitative and mixed methods were not appropriate because this study was not about numbers and trend analysis (Creswell, 2014). I recorded the interviews, and the recordings were transcribed, using NVivo to develop categories (Creswell, 2014). NVivo software is an aid in manipulating the data, developing codes, and categorizing the data (Creswell, 2014).

This qualitative research used purposeful sampling; this means that the inquirer selects individuals and sites for the study to purposefully understand the research problem in the case study (Creswell, 2007). According to Creswell (2007), the recommendation for conducting a qualitative case study should contain no more than five to ten participants in a single study. This sample provided sufficient opportunity to identify themes of the cases and conduct cross-case theme analysis (Creswell, 2007).

Definitions

Definitions presented below include biological and medical terms and diagnostic tools used in this dissertation.

Blood cholesterol: This is a type of fat produced by the liver, found in the blood and some foods. The body uses cholesterol to make hormones and build cell walls (CDC, 2014).

Blood glucose: This is sugar in the blood that provides the body with the primary source of energy (CDC, 2014).

Comorbidity: This consists of two or more diseases or conditions in patients. Comorbidity sometimes refers to complications in the disease (CDC, 2014).

Depression: This is a mood disorder that causes a continuous feeling of anxiety, sadness, misery, withdrawal from society, and loss of interest (CDC, 2014).

Depression screening: This is a mental health tool used to determine if an individual is depressed. Depression screening is used to determine if individuals are feeling an overwhelming sadness (CDC, 2014).

Diabetes: This is a metabolic disorder that involves multiple organs, including the brain and central nervous systems. High blood glucose or hyperglycemia results from the body's inability to use blood glucose for energy (CDC, 2014).

Diabetes Mellitus (DM): Classified as impaired insulin secretion and peripheral insulin resistance, this increases hepatic production of glucose, making insulin levels insufficient to regulate plasma-glucose levels (CDC, 2014).

Diagnosing diabetes: This includes a diabetes atlas application. A person is considered to have been diagnosed with diabetes if a doctor or other medical health professional told an individual they had diabetes. Women who had diabetes during pregnancy are not considered to have diabetes (CDC, 2014).

Hypoglycemia: This is low blood glucose. It is a disorder that occurs when one's blood glucose is lower than usual or below 70mg/dl. Signs include hunger, nervousness,

tremors, sweat, faintness or dizziness, lethargy, and confusion. If left untreated, hypoglycemia may lead to unconsciousness (CDC, 2014).

Neuropathy: This is an ailment of the nervous system that causes muscle weakness, ache, and numbness. The most common form of neuropathy in people with diabetes is peripheral neuropathy, which affects the legs and feet (CDC, 2014).

Obesity: This is a disorder in which a person has a higher than average amount of fat in the body or has a body-mass index of 30 or more (CDC, 2014).

Type 2 Diabetes Mellitus (T2DM): This is an ailment categorized by high blood-glucose levels caused by the lack of insulin or the body's incapacity to use insulin efficiently. Individuals with T2DM often develop the illness during middle-age. T2DM can appear in children and teens, as well as adults (CDC, 2014).

Theory of Reason Action Model Constructs

Behavior: This is the transmission of intention or perceived behavioral control into action (Ajzen & Fishbein, 1980).

Behavioral Intention: This is an indication of how hard people are willing to try and how much effort they are planning to use to perform a behavior (Ajzen & Fishbein, 1980).

Attitude: This is the first determinant of behavioral intention. It is the degree to which the person has a favorable or unfavorable evaluation of the behavior in question (Ajzen & Fishbein, 1980).

Subjective Norm: This is considered the second predictor of behavioral intention, and it is influenced by social pressure to perform or not perform a specific behavior (Ajzen & Fishbein, 1980).

Perceived Behavioral Control: This is the third precursor of behavioral intention (Ajzen & Fishbein, 1980). This construct is defined as the person's belief concerning how easy or difficult performing the behavior will be (Ajzen & Fishbein, 1980).

Assumptions

The following assumptions relate to participant responses and the data used in the analysis portion of the research. The first assumption was that participants have an opinion about T2DM screening for depression. The second assumption was that clinicians were thoughtful and honest in their answers to the research questions. The third assumed that clinicians had experience treating patients with T2DM depression. The fourth assumption was that participants who agreed to participate met the study's criteria.

Scope and Delimitations

Physicians and nurse practitioners were invited to participate in this case study research. Participants were recruited from Saint Louis, Missouri, and the following cities in Mississippi: Charleston, Horn Lake, Calhoun City, Pora, Hernado, and Pope. Specialty areas of participants included medical practitioner, general practitioner, endocrinologist, family medicine, and internal medicine. The focus was on physicians' and nurse practitioners' treatment process for patients with T2DM accompanied by depression. Participants were provided information about their clinic processes for T2DM depression

treatment. There was no way to identify which participants made which statement. Study results were not generalized due to the limited number of five to seven participants.

Limitation

This research study is limited to a focus on clinicians' screening of patients with T2DM for depression. Another limitation was that if physicians and nurse practitioners understand T2DM depression exists and if they included screening of patients with T2DM for depression. A potential weakness of the study was not knowing if physicians integrated T2DM depression screening into their daily clinical practice. The final limitation of the study was that the data collected from a small group may not have yielded an accurate picture of the present population, and generalization of the results may have been ambiguous because of the limited number of interviews.

Significance

This study produced significant knowledge and additional insight into T2DM depression screenings. The study and research questions aimed to examine clinicians' attitudes and behaviors concerning screening patients with T2DM for depression. According to Ajzen and Fishbein (1980), the attitude was populated to be the primary factor of behavioral intention. The individual attitude towards behavior is the degree to which one has a positive or negative belief about performing a correct behavior. An individual is intended to implement a particular behavior when he or she assesses it to be positive or an individual does not intend to perform a particular behavior when he or she evaluates it to be negative (Ajzen & Fishbein, 1980).

According to Ajzen and Fishbein (1980), subjective norms or normative beliefs are considered the second predictor of behavioral intention. Subjective norms or normative beliefs are the peer pressures interpreted by the individual to exhibit or not exhibit a particular behavior (Ajzen & Fishbein, 1980). An individual is intended to perform a specific behavior when he or she perceives what others think they should (Ajzen & Fishbein, 1980). An individual not intending to implement a specific behavior once they perceive that it is not necessarily based on if others think (Ajzen & Fishbein, 1980). The behavioral intention was weighed by the individual's desire to comply with perceived expectations. Perceived behavioral control is the third precursor of behavioral intention (Ajzen & Fishbein, 1980).

Understanding behavioral control refers to the degree to which some individuals feel that accomplishing or not accomplishing the behavior in question is under their control (Ajzen & Fishbein, 1980). People are not likely to form an opinion to perform a behavior if they do not have resources or opportunities to do so, even if they hold positive attitudes toward the behavior and believe that others would approve of it (Ajzen & Fishbein, 1980). Understanding behavioral control can influence behavior directly or indirectly through behavioral intentions. A route from perceived behavioral control to behavior is likely to emerge when there is some agreement between the control's perceptions and the person's actual control over the behavior (Ajzen & Fishbein, 1980).

This study has information for medical professionals, improving their understanding of the level of T2DM depression, thereby allowing them to treat individuals with diabetic depression appropriately. This study's outcome provided the

medical community with additional knowledge on how to screen individuals with T2DM depression. Educating health professionals on types of depression is one approach to improving T2DM depression care. Continuing education programs would enhance providers' intentions, confidence, and skills to address depression in patients with T2DM. Healthcare professional training on depression scales for T2DM should be current, credible, focused, engaging, comfortable to use, and convenient for the doctors (Osborn et al., 2010). It is essential to providing the medical community with an understanding of the psychological, emotional, and social impact of T2DM depression (Speight, Browne, Holmes-Truscott, Hendrieckx, & Pouwer, 2012). Physicians need to support people living with T2DM depression, promote positive health habits, and enhance the health and well-being of the T2DM population (Nelson & Prilleltensky, 2005). This study could bring increased awareness regarding the doctors' current behaviors and practices treating the T2DM population.

Summary

A need exists to increase T2DM depression awareness by screening diabetic patients. This diabetic screening goal was attained by incorporating screening tools for depression as part of regular diabetes procedures (Schram, Baan, & Pouwer, 2009). Acknowledging depression in individuals with diabetes is suboptimal. A universal approach to launching comprehensive interventions to improve early detection of depression and early initiation of treatment for depression is required to reduce the world's depression burden among individuals with diabetes (Egede & Ellis, 2010). Medical professionals should consider periodic screening for depression and initiate

treatment. Understanding this complex co-occurring condition is essential, and healthcare personnel must strive to address diabetes depression adequately (Pirraglia & Gupta, 2007).

Chapter 2: Literature Review

Introduction

The research purpose of this study is to explore physicians' and nurse practitioners' perceptions and behaviors regarding screening patients with T2DM for depression. The emphasis of this research study was to examine clinicians' behavior and impact of peer influence on screening T2DM patients for depression. There are no research studies that examine how primary care physicians, endocrinologists, nurse practitioners, and internal medicine physicians screen individuals with T2DM for depression. This chapter reviews the literature on diabetes, T2DM, deficiency of depression screening, psycho-diagnostic, depression, cost of T2DM treatment, and the TRA.

Depression in diabetic patients is often unrecognized and untreated because of the similarity to somatic symptoms (Culman et al., 2013). Another reason for the deficiency of depression screening for diabetes patients includes clinicians improperly trained to perform psycho-diagnostic interviews (Culman et al., 2013). Healthy individuals who do not have a chronic disease such as diabetes may not experience an increase in their annual healthcare cost. However, for individuals who develop chronic diseases such as diabetes, healthcare costs may increase, resulting in feelings of depression. My qualitative research focus was on T2DM, depression, and clinicians' behavior toward T2DM depression screening.

Literature-Search Strategy

The literature search was conducted using an online questionnaire to identify peer-reviewed articles from January 1990 through June 2017 using Thoreau and Walden University's discovery service. Walden University's discovery services include several databases. The

following are resources from the databases: Thoreau, Biomed Central, CINAHL, EBSCOhost, Elsevier, JAMA, and Google Scholar. Additional databanks perused were Medline, Psych Articles, PsycINFO, Social Science, Sage, ProQuest, Web of Science, PubMed, and Science Direct peer-reviewed journal articles. The search consisted of retrieving full English text from published journal articles. Key terms were *diabetes, diabetic, non-insulin-dependent diabetes mellitus, depression,* and *comorbidity of T2DM*, combined with *depression* or *depressive, mood disorder, depressed mood, risk factors, complications, glycemic control, mortality*, and *healthcare costs.*

Conceptual Framework

Ajzen and Fishbein (1980) define TRA as a general theory explaining individual behaviors and identifying intention determinants. According to TRA, a person's intention is a function of two primary determinants, one person in nature and the other reflecting social influence (Ajzen & Fishbein, 1980). The particular factor is the individual's positive or negative evaluation of performing a behavior; this aspect is the behavior's attitude. The second determinant of the intention is the person's perception of the social pressures to perform or not perform the behavior in question (Ajzen & Fishbein, 1980). According to TRA, individuals plan to perform a behavior when they evaluate it positively and believe that significant others think they should perform it (Ajzen & Fishbein, 1980). TRA serves as the theoretical framework for this study. Examining physicians' behavior using the TRA as a theoretical lens, this study explored clinicians' depression-screening behaviors, attitudes toward screening, and perceptions of social peer approval toward screening patients with T2DM for depression.

TRA is a model explaining individual behaviors, emphasizing intention, attitudes, and perceptions of whether peers support a particular activity (National Institutes of Health [NIH], 2012). According to TRA, an individual who believes performing a given behavior would lead to a positive outcome would hold a favorable attitude toward performing that behavior and would be more likely to carry out the behavior. Similarly, if an individual believes others approve of the behavior, he or she would be more likely to hold a positive attitude toward it and be more likely to perform the behavior. In this study, I used TRA to identify why clinicians may or may not hold favorable attitudes toward screening for depression in T2DM patients. I further used TRA in this study to understand clinicians' attitudes toward screening for depression and how those attitudes are similar in intentions to monitor individuals with T2DM for depression.

Qualitative Case Studies

Creswell (2009) recommended that qualitative researchers choose from among the possibilities of narrative, phenomenological, ethnographic, case, and grounded-theory study. Currently, these methodologies are widespread across social and health sciences (Creswell, 2009). Case studies are a plan of inquiry in which the investigator explores in depth a program, event, activity, process, individual, or group (Creswell, 2009). A case study is limited to time, activity, and the researcher's ability to gather comprehensive information, exhausting an assortment of data collection procedures over a continued period (Creswell, 2009). This process encompasses using numerous points of data collection and the refinement and interrelationship of categories of information (Creswell, 2009).

Case studies are standard in the medical field to investigate or search for understanding of behavior and the psychosocial impact of a group of medical professionals. For example, the

nursing staff's confidence in their knowledge of prostate cancer's psychosocial influence was explored using a case study research approach (Williams, Hemphill, & Knowles, 2017). In one example of a case study on the practice of social work in health care in the Czech Republic, the researcher worked to understand social work practice in healthcare through exploration (Kuznikova, 2017). Another example of a case study was a UK education program affecting healthcare professionals to recommend exercise for their patients with T2DM, which enabled them to understand their processes (Matthews, Jones, Thomas, van den Berg, & Foster, 2017). Lastly, an example of a single-case cross sectional study was conducted to understand the dissemination of an accident, emergency, attendance, and hospital admissions for the case-managed population (Phillips, Jones, Runacres, Lintern, & Radford, 2016).

Qualitative Concerns and Procedures

Qualitative researchers usually do not test concepts or assumptions. It is essential to deliberate critical concepts from related information that contribute to current understanding and concepts that assist in data interpretation qualitative case study should be conducted to understand T2DM depression screening behaviors. In this project, I studied clinicians' current screening behaviors, attitudes, and perceptions of whether their peers support screening patients with T2DM for depression.

For this study, the interviewees consisted eight clinicians. This sample size achieved saturation of themes as suggested by Isaacs, 2014. A snowball sampling technique was used to identify potential interviewees for this study. Snowball sampling is where research participants recruit other participants for a study. The demographic data collected described the sample and includes specialty, age, gender, and years of practice.

This qualitative case study focused on the experience of clinicians treating individuals with T2DM. Questions pertained to clinicians' experience and processes, and attributes toward treating patients with T2DM. A qualitative case study design was employed because it permits clinicians to describe their process for screening patients with T2DM for depression.

Literature Review Related to Key Variables and/or Concepts

Type 2 Diabetic Mellitus and Depression

T2DM is a long-lasting metabolic disorder (Kolluru, Bir, & Kevil, 2012) that causes an individual to develop abnormal blood-glucose levels, carbohydrates, fat metabolism, and protein metabolism (Abbas et al., 2015). The human body converts food into glucose (sugar) for the body to consume as energy. The pancreas is an organ located between the stomach and spine that produces hormones commonly referenced as insulin. Insulin transfers glucose from the blood into muscle, fat, and liver cells to power the human body (CDC, 2014). Individuals with DM produce insufficient insulin. If individuals do not produce adequate amounts of insulin, sugar accumulates in the bloodstream (CDC, 2014). Individuals with DM are at a higher risk of developing a range of comorbidity complications due to the disease (CDC, 2014).

Diabetes generates serious health problems: chronic renal disease, cardiovascular disease, diabetic eye disease, lower extremity amputations, and comorbidities such as depression. Depression and diabetes are linked; therefore, better management of DM could reduce patients' likelihood of experiencing an episode of depression (Abbas et al., 2015; Alderson, Foy, Glidewell, & House, 2014).

Diabetes is the seventh leading cause of death in the United States (CDC, 2014). Individuals who develop T2DM contract non-insulin-dependent diabetes mellitus or adult-onset

diabetes. T2DM individuals account for roughly 90 to 95% of all identified cases of diabetes. Risk factors for developing T2DM are age, weight, family history, occurrence of gestational diabetes, physical activity, and race or ethnicity. Nearly 8.1 million individuals with diabetes do not realize they have the disease due to prediabetes and T2DM having limited physical symptoms. Therefore, some individuals might not realize the severity of the disease (CDC, 2014). In the United States, diabetes trends have nearly multiplied within 5 years, from 5.5 million to 21.3 million adult cases. Each year, healthcare personnel report 1.7 million new adult cases of diabetes. If this trend continues, one of every three adults in the U.S. might haveT2DM diabetes by 2050 (CDC, 2014).

Type 2 Diabetic Mellitus and Depression Symptoms

T2DM depression causes feelings of sadness, anxiety, and withdrawal from society (Auslander, Sterzing, Zayas, & White, 2010). Mental illness symptoms include depression, sad mood, reduced interest in activities, weight change, psychomotor tension, exhaustion, inappropriate remorse, and difficulties focusing (CDC, 2014). One of the diagnostic criteria established by the American Psychiatric Association suggested five or more characteristics or symptoms must be present for a continuous period of 2 weeks to be classifiable as depression (CDC, 2014). An individual with T2DM might suffer from one or more depressed mood symptoms, may develop insomnia from worries about uncontrollable glycemic levels, or have a negative self-concept (Yim et al., 2009). Depression is a condition that affects cognition, behavior, and the nervous system, leading to significant dysfunction in an individual's daily life and occupation.

Treatment for depression consists of psychotherapy, drugs, and individual counseling. Depressed patients have a high risk of suicidal ideation, and some depression treatment offers patients alternative therapy treatment. For example, aromatherapy is a useful tool to treat depression. According to Siddique et al. (2014), research showed that T2DM patients have a higher clinical depression rate than insulin-treated patients. The etiology of depression is unknown; however, genetic and environmental factors may contribute (Coryell, 2009). Depression also affects the immune system by reducing the protection response and intensifying the risk of cardiovascular disorders.

Depression in Type 2 Diabetic Mellitus

Wiltink, Michal, Wild, Schneider, König, Blettner, Beutel, (2014) identified a clear association between diabetes and depression. Individuals with T2DM risk developing depression, nervousness, or food-intake disorders (Ducat et al., 2014). Individuals with diabetes may experience specific emotional difficulties, such as feelings of shame or apprehension when they fail to persist in their diabetes management. This population may fail to receive treatment due to inadequate screening for mental health comorbidities such as depression. Clinicians should identify and treat mental health comorbidities of individuals with T2DM due to the risk that depression poses to adhering to medical-treatment plans (Alonso-Moran, Satylganova, Orueta, & Nuno-Solinis, 2014; Ducat et al., 2014). If depression remains untreated, patients with T2DM may not correctly manage their illness, leading to physical complications.

The connection between diabetes and depression is bidirectional (Heckbert et al., 2010). Individuals with diabetes have a higher degree of developing depressive illness, and depression increases diabetes onset and progression (Egede & Ellis, 2010). Symptoms of depression and

diabetes intensify one another, contributing to a catastrophic cycle of poor self-care, deteriorating diabetes control, and deepening depression (Culman et al., 2013). However, depression is considered an insignificant factor, frequently ignored and left untreated by medical professionals (Zhang, Ajilore, Zhan, GadElkarim, Korthauer, Yang, & Kumar, 2013).

Why Individuals with T2DM are Susceptible to Depression

Depression is a common problem with diabetes; recent meta-analysis acknowledged depression is two to three times more dominant in individuals with diabetes than in the general population (Carpenter, 2010). Depression, combined with DM, is a significant burden on patients' health (Abbas et al., 2015). Sweileh, Abu-Hadeed, Al-Jabi, and Zyoud (2014) recommended instituting a psychological assessment in the diabetic healthcare plan, reducing the number of unrecognized diabetic patients with depression. The researchers also recommended that routine clinical evaluations include psychosocial assessment conducted by patients' primary healthcare clinics to improve patients' quality of life.

For several years, researchers identified the relationship between depression and diabetes. Investigators argued that diabetes precede depression and leads to depression through a direct effect of hyperglycemia. Individuals with diabetes develop depression as a consequence of psychological tension that elevates the acknowledgment of the diagnosis. Diabetes treatment requires lifestyle modifications and medication that cause depression symptoms (Holt et al., 2009). Better management of DM would reduce the likelihood of a patient with diabetes experiencing an episode of depression (Abbas, Nasir, Zehra, Noor, Jabbar, & Siddqui, 2015, p. 208). Individuals with diabetes develop psychological distress resulting from disease diagnosis.

Psychosocial interventions for the T2DM population include treating diabetic distress and depression simultaneously (Carper et al., 2014).

Diabetes and depression mutually worsen the other with each ailment acting as a risk factor in the development of the other (Zhang et al., 2015). Individuals with T2DM depression symptoms may experience increased disability, a decline in health, increased medical expenses, and premature death (O'Connor et al., 2009). A diabetic's self-care management program requires balancing a complex set of behavioral tasks. The individual must adhere to prescribed medications 24 hours a day and maintain their self-care plan overall (Ducat et al., 2014). Diabetes suffering occurs because almost all diabetic care involves self-management. Self-management tasks for patients with T2DM consist of carefully testing blood glucose levels to regulate medication doses day and night (Aflakseir, & Malekpour, 2015). Patients with T2DM balance their insulin level by selecting specific foods to eat and monitoring their blood glucose levels to prevent hypoglycemia (Ducat et al., 2014). Individuals with T2DM experience specific emotional complications, such as feeling guilty or depressed when they fail to maintain their diabetes regimen (Lee, Chapa, Kao, Jones, Kapustin, Smith, & Friedmann, 2009).

A person with diabetes has emotional responses to the experience of having T2DM with a wide range of stressors, such as feeling overwhelmed with the diabetes regimen (Ducat et al., 2014). Patients with T2DM are concerned about the future and the possibility of severe complications and feel guilty when management is going poorly. The disease mandates self-management, causing emotional distress to individuals with T2DM. T2DM psychiatric diagnosis of depression aligns with poor compliance with treatment, glycemic control, higher percentages of diabetes complications, and diminished quality of life (Ducat et al., 2014).

Lifestyle alterations provide persisting inner struggles for the population with T2DM (Ahlin & Billhult, 2012). This population struggles to prepare healthy food for the family and lifestyle changes are overwhelming (Pera, 2011). Furthermore, women with T2DM often place family needs first, causing them to manage their disease inadequately (Pera, 2011). Individuals with DM feel a loss of independence. They also experience frustration during meticulous planning around diabetes that can interfere with freedom of choice, particularly in those who are new to the condition. Emotional distress is a core development for individuals with T2DM, and healthcare personnel must continuously measure underlying diabetes-related distress (Fisher, Gonzalez, & Polonsky, 2014). Continuous diabetes distress measurement can lead to suitable and targeted patient interventions (Fisher et al., 2014). Patients with diabetes should have regular screening for depression to reduce the number of depressed or misdiagnosed patients, offering them a healthier quality of life (Zhang et al., 2015).

Treatment for Type 2 Diabetic Mellitus

The American Diabetes Association has developed national guidelines for treating patients with T2DM. However, the guidelines do not include depression treatment, nor do they require annual depression screenings for patients with T2DM. Depression can be a severe problem for patients with diabetes (Gonzalez, Fisher, & Polonsky, 2011). Additionally, healthcare providers do not educate patients with T2DM about depression or the consequences of depression for disease management (National Diabetes Statistics, 2011). Consequently, a vast number of individuals with T2DM are unaware of the symptoms of depression and do not know to request medical treatment (Agbir, Audu, Adebowale, & Goar, 2010; Yu et al., 2010). Patients with T2DM have difficulty seeking treatment for depression due to the deficiency of diabetic-

depression screening in the medical community (De Groot, Kushnick, Doyle, Merrill, McGlynn, Shubrook & Schwartz, F. 2010).

Incorporating physical and emotional care for patients with T2DM enables treating clinicians to improve the management of their diseases (Egede & Ellis, 2010). Because depression and diabetes have a bidirectional relationship, proper T2DM depression screening and treatment are essential to improving the disease management of individuals with T2DM (O'Connor, Crain, Rush, Hanson, Fischer, & Kluznik, 2009). Due to the absence of depression screening by medical professionals treating individuals with T2DM, clinicians do not diagnose patients during the earlier stages of depression (Pouwer, 2017). Disease management is compromised for individuals with T2DM because of the lack of depression screening for these patients (Culman et al., 2013).

Clinicians and Comorbid Depression Screening

Chronic illness is a condition that lasts for years and usually cannot be cured entirely. Individuals with a chronic illness can develop depression feelings because of the life disruption the illness may cause. Some chronic illnesses are controllable through diet, exercise, and medication. For example, chronic illnesses include heart attacks, coronary artery disease, Parkinson's disease, multiple sclerosis, cancer, and diabetes. People with prolonged illness develop depression, which is one of the standard complications. Depression triggered by chronic illness often worsens the ailment, especially if the illness causes pain and fatigue, or limits a person's ability to interact with others (Simon, 2001).

Research on prolonged illnesses and depression suggests that depression frequencies are high among patients with chronic ailments (Simon, 2001). An individual who has had a heart

attack, who develops coronary artery disease without having a heart attack, develops Parkinson's disease or Multiple Sclerosis, or individuals with cancer and diabetes can exhibit signs of depression (Simon, 2001). Presently there are standards of care for treating a chronically ill individual for depression. Individuals with chronic disease rely on their clinicians to assist with maintaining their health. Clinicians recognize symptoms of depression; believing that anyone with a chronic illness could be depressed (Simon, 2001).

Clinician's Attitudes toward Screening T2DM Individuals for Depression

It is essential to understand clinicians' attitudes toward depression screening for individuals with T2DM and why clinicians may or may not screen for depression. This study could promote social change by providing an understanding of clinicians' attitudes and behaviors concerning screening patients with T2DM for depression. This study could lead to improving depression screening in this population by resulting in individuals with T2DM receiving the psychological care they may need while enduring this chronic illness.

In a study conducted by Yu et al. (2010), depressive tendencies were apparent in many T2DM patients, however, these tendencies were not acknowledged by healthcare workers. Due to the link between depression and T2DM, adequate testing would assist physicians in the management of patients with T2DM by managing concurrent depression (Acee, 2010). According to de Vries McClintock, Boyle, Rooney, and Bogner (2016), an integrated care intervention employing patient-prioritized planning that incorporates financial, social, and emotional needs of primary care patients with T2DM depression may be useful. Similarly, patients need unique and effective psychological treatment.

Healthcare teams should develop the ability to efficiently and accurately diagnose individuals with T2DM for depression instead of labeling them as non-compliant patients (Culman et al., 2013). Psychosocial and self-management barriers include depression, adherence to prescription regimens, and dramatic lifestyle changes (Raval, Dhanaraj, Bhansali, Grover, & Tiwari, 2010). Another barrier includes biological factors such as hormonal changes, lack of time, and insufficient social support (Bayliss, Ellis, & Steiner, 2007). Psychological attributes relate to significant barriers that patients with T2DM must address for this chronic disease. Diabetes presents a challenge for individuals with T2DM because they are overwhelmed by the time they are required to self-manage, which causes frustration (Chlebowy, Hood, & LaJoie, 2010). Difficulties in maintaining the diabetes health-behavior schedule is another challenge for individuals with T2DM (Chlebowy et al., 2010).

Healthcare workers often do not recognize depression among individuals with T2DM (Schram et al., 2009); therefore, patients with T2DM are not treated or screened for depression during routine medical checkups by their physicians. Clinician acknowledgment and depression management may be particularly crucial for older adults with T2DM (Kimbro et al., 2014). Using depression screening tools, such as a Patient Health Questionnaire (PHQ-8 or PHQ-2), can be an efficient way to recognize depression before it results in an unnecessary health risk that may lead to mortality (Kimbro et al., 2014). Undiagnosed depression reasons include physicians' lack of specific training to perform psycho diagnostic interviews (Culman et al., 2013).

Clinicians who lack knowledge of atypical depression symptoms lack psychological expertise and knowledge of proper depression screening tools for diagnosing T2DM depression (Beverly et al., 2011). Another barrier interfering with clinicians diagnosing T2DM depression is

a stigma related to mental illness; clinicians may believe that depression is a normal process in aging; furthermore, physicians and nurse practitioners may believe that antidepressants interfered with the treatment of other health conditions or interact with other medications. When clinicians believe that overlapping symptoms from other chronic diseases explain depression symptoms, other chronic health conditions take priority during a short medical visit, (Beverly et al., 2011).

Path analysis proposes a reciprocal relationship between depression and functioning (Schmitz, Gariépy, Smith, Malla, Boyer, Strychar, & Wang, 2013). An example of this is a decline in functional independence. Psychological and physical changes, along with life stressors can increase allosteric weight, which may support the development of depression. Patients with T2DM should obtain an accessible healthcare provider network that includes an endocrinologist, psychiatrist, and psychologist (Bensbaa, Agerd, Boujraf, Araab, Aaloiane, Rammouz, & Ajdi, 2014). Individuals with T2DM could benefit from meeting with a therapeutic staff aware of the possible psychological problems while providing diabetes treatment. Targeting diabetes distress and depression may improve the outcome of psychosocial intervention approaches in the T2DM population (Carper, Traeger, Gonzalez, Wexler, Psaros, & Safren, 2014).

Clinician Depression-Screening Behaviors

Clinicians recognize diabetes and depression, but do not relate to screening the population for mental health distress (Heckbert et al., 2010). Furthermore, clinicians who understand how to use an integrated approach to treating T2DM may offer patients support to control their chronic illness (Leone, Coast, Narayanan, & de-Graft Aikins, 2012). It is essential to establish criteria for adequate treatment for individuals with T2DM suffering from depression, which would improve their quality of life. It is unsafe for clinicians to fail to identify depression

in patients with T2DM (O'Connor et al., 2009). Despite the potential adverse effects of psychological health problems on diabetes outcomes and healthcare expenses, only about 1/3 of patients with these coexisting illnesses obtain a diagnosis and treatment.

Physicians and nurse practitioners face challenges when treating T2DM patients' psychological and emotional complications (Ducat et al., 2014). Some clinicians report trouble identifying patients' emotional complications. The absence of psychological expertise contributes to clinicians feeling frustrated, inadequate and overwhelmed during T2DM treatment. In the study conducted by Ducat et al. (2014), physicians remarked on the stress and anxiety of struggling to adhere to a typical medical visits time limitation. Clinicians may benefit from a multidisciplinary team approach because the physician's patient time per visit is limited. A multidisciplinary team approach would relieve clinicians of the emotional and social difficulties of assessing patients with T2DM (Ducat et al., 2014). The clinicians are challenged when treating the social and emotional difficulties of patients with T2DM in order to develop essential programmatic interventions (Beverly, Hultgren, Brooks, Ritholz, Abrahamson, & Weinger, 2011). The deficiency of psychological expertise contributes to doctors feeling frustrated, inadequate and overwhelmed. Understanding how clinicians perceive the severity and consequences of patients' psychosocial and mental illness is critical for developing solutions for these problems (Beverly et al., 2011).

It is critical to integrate psychological screening and treatment into a multidisciplinary diabetes care team's work to improve patient and public health outcomes and lessen healthcare costs. Depression scales that monitor depressive symptoms are practical in clinical diabetes settings; however, medical professionals do not use an available screening tool. Treatment

strategies include considering all possible aspects that may contribute to the deterioration of diabetes comorbidities (Prabhakar, Gupta, Kanade, & Radhakrishnan, 2015). Individuals with T2DM face the stress of long-term therapy associated with diabetes complications. T2DM complications include nephropathy, neuropathy, retinopathy, forced lifestyle modifications, and prolonged hospitalization periods, all of which may contribute to depression (Prabhakar et al., 2015). Depression is extremely high in patients with T2DM (Siddique, Dogar, Malik, Haider, Afzal, Cheema, & Azeem, 2014). Diabetes Mellitus (DM) increases among those who take oral hypoglycemic medications rather than insulin therapy alone. Risk factors for diabetes depression should be used to educate doctors treating patients with DM (Siddique et al., 2014).

Practical management of depression has improved individuals' quality of life with T2DM (Siddique et al., 2014). Treatment strategies for the T2DM population should include the physician providing a multifaceted approach, considering all possible elements that may add to the intensification of diabetes comorbidities (Prabhakar et al., 2015). Individuals with T2DM need continuous monitoring of depression, and once identified, should be required to maintain an excellent prognosis for diabetes and related complications, including mood disorders like depression.

The Effects of Peer-Influence Between Clinicians

According to Yang, Lien, and Chou (2014), research revealed that peer-influences are small between doctors, and stronger among physicians of similar age. Social learning can impact physician peer-influence as a process in which decision makers collect information by observing others in their social network (Yang et al., 2014). Through this process, individuals' behaviors may change the behaviors of others through exposed information. If social learning occurs, then

peer-effects can be detected and revealed by changes in an individual's behavior in response to that of his or her peers. The peer-effect study found that positive peer-effects are more likely to exist when peers are of similar age, presumably having similar, comparable experience and background (Yang et al., 2014). Peer-effects were stronger when physicians have direct interactions with their colleagues through observations or conversations. It implies that promoting medical innovations or new scientific findings beneficial to society can be most effective when the new drug, technology, device, or practice is first introduced (Yang et al., 2014).

Patient Health Questionnaire (PHQ-9) Scale

The Patient Health Questionnaire (PHQ-9) is a valuable instrument for screening Type 2 Diabetes Mellitus (T2DM) for depression in a primary care setting (Bogner & de Vries, 2010). The PHQ-9 is a questionnaire that scores each of the nine criteria listed in the Diagnostic and Statistical Manual of Mental Disorders for depression with scores ranging from 0 to 3 (Locke, Kirst, & Shultz, 2015). PHQ-9 scale scores indicate a sensitivity of 88% if the score is ≥ 10 and establishes significant depression. PHQ-9 scale scores of 5, 10, and 20 represent mild to severe depression (Arroll, B., Goodyear-Smith, F., Crengle, S., Gunn, J., Kerse, N., Fishman, T., … Hatcher, 2010). The U.S. Preventive Service Task Force supported using PHQ-9 scales for depression screening for individuals with T2DM in a primary-care setting (Egede & Ellis, 2010).

Patients can complete the PHQ-9 scale quickly during an office visit. Primary care physicians can educate ancillary health personnel, such as licensed practical nurses, to administer the test to T2DM patients (Bogner & de Vries, 2010). The PHQ-9 has a scoring scale to determine depression severity and assessment for initiating treatment. The PHQ-9 scale is a

source that can ascertain the effectiveness of depression treatment over time (Acee, 2010). Individuals with T2DM depression need identification as soon as possible.

Providing the medical community with an understanding of the psychosomatic, emotional, and social impact of diabetes depression would improve the prognosis for individuals with T2DM (Speight, Browne, Holmes-Truscott, Hendrieckx, & Pouwer, 2012). Diabetes promotion and prevention screening focus on reducing diabetes depression and promote positive health habits. Also, it enhances health and well-being in populations (Nelson & Prilleltensky, 2005). The study conducted by Gois, Dias, Carmo, Duarte, Ferro, Santo, Sousa and Barbosa (2014) revealed that interpersonal Psychotherapy is a useful tool to treat major depression in T2DM patients.

Summary

Social change is a continuing process of improving and introducing positive changes. Continually examining disease symptoms would help to improve the quality of life globally. Individuals with Type 2 Diabetes Mellitus risk depressive moods resulting in physicians prescribing a high percentage of antidepressant agents (Whittemore, Melkus, & Grey, 2004). Individuals with DM are unaware that they have developed depression and are unlikely to seek medical care for depression (Campayo, de Jonge, Roy, Saz, Camara, Quintanilla, & Lobo, 2010). Publicly, a need persists to increase depression awareness, depression screening, and initial identification of depression conditions in individuals with T2DM during healthcare treatment (Schram et al., 2009).

Currently, depression is unrecognized among individuals with diabetes. Beginning a universal approach to coordinate comprehensive interventions to advance early recognition of

depression and early initiation of treatment for depression could reduce the worldwide burden of depression among individuals with diabetes (Egede & Ellis, 2010). A psychosocial assessment should be part of the regular clinical evaluation of patients with T2DM (Sweileh et al., 2014; Thour, Das, Schrawat, & Gupta, 2015). Screening patients with T2DM should occur at primary healthcare clinics to improve patients' quality of life and decrease adverse outcomes. It is essential to understand clinicians' attitudes toward depression screening for individuals with T2DM and why they may or may not screen for depression.

Chapter 3 addresses the methodology and research design used in this research; Chapter 4 explains the results of this study; and Chapter 5 provides an interpretation of the findings and outlines implications for social change.

Chapter 3: Research Method

Introduction

This qualitative descriptive-design study used a case study approach to understand clinicians' perceptions of screening patients with T2DM for depression, as well as examine their behaviors regarding screening. In this chapter, the sample size and eligibility criterion for the case study is discussed. Also, a description of the significant components of the methodology used in this analysis includes (a) the research design and rationale, (b) the role of the examiner, (c) the method, (d) issues of reliability, and (e) a summary. This chapter also includes a description of the instrumentation and materials to be used.

Research Design and Rationale

A qualitative study is a means to explore and understand the meaning individuals or groups ascribe to human problems (Creswell, 2014). The inquiry process involves asking emerging questions and processes; assembling data in a relevant setting; analyzing the data inductively, building from particulars to general themes; and translating the data's meaning. Creswell (2009) recommended that qualitative researchers choose from among the possibilities, such as a case study. Case studies align with the qualitative design and are widespread across the health sciences for conducting research. A case study design can focus on a particular subject or individual case (Creswell, 2009). Case studies are the tactic of inquiry. In this case study, I comprehensively explored programs, events, activities, and processes of several individuals. Case studies are limited by time, activity, and the researcher's ability to collect detailed information using various data-collection procedures over a sustained period (Creswell, 2007). I used a case study design to examine the research questions.

The essential questions of this research were:

1. How do physicians and nurse practitioners describe their attitudes toward screening T2DM patients for depression?
2. How do physicians and nurse practitioners describe their T2DM depression – screening behaviors?
3. How do physicians and nurse practitioners describe their perceptions of whether their peers support screening the T2DM patient for depression?

The following are an example of research questions that were asked during the interview:

1. Do you talk to your Type 2 Diabetic patients about depression?
    a) If yes, please describe your process for talking with your patients.
    b) If no, please describe why you did not discuss depression with your patients.
2. Do you screen T2DM patients for depression?
    a) If yes, please describe your process for screening T2DM patients for depression.
    b) If no, please describe why you do not screen T2DM patients for depression.
3. What do you think are the advantages and disadvantages of screening T2DM patients for depression?
4. Do you think your peers would approve of screening T2DM patients for depression?
    a) Describe what you think your peers think about screening T2DM patients for depression.

The case study research uses a qualitative approach (Creswell, 2007). Researchers explore a limited system (a case) or multiple systems (cases) over time through detailed, in-depth data accruing from multiple sources and report a case description. Social scientists,

anthropologists, and sociologists use a case study approach, and it is a simplified methodology in psychology and medicine when analyzing specific problems (Creswell, 2007). The rationale for selecting this design relates to this study's purpose: understanding clinicians' perceptions of screening patients with T2DM for depression, as well as examining their behaviors regarding testing for depression (Ajzen & Fishbein, 1980).

Stake's (2006) most recent book on multiple case study analysis presents a step-by-step approach and illustrates numerous case studies in Ukraine, Slovakia, and Romania. A case study is a good plan when the inquirer has an identifiable question. The case study has boundaries and provides an in-depth understanding of the case or a comparison of several cases (Creswell, 2014). According to Creswell (2007), case study research should include no more than four or five case studies in a single study. This number has offered ample opportunity to recognize themes of the cases as well as to conduct cross-case theme analysis (Creswell, 2007). Case studies are standard in the medical field to investigate or search for understanding of a group of medical professionals' behavior and psychosocial impact.

Role of the Researcher

A qualitative study requires a small number of individuals or situations that preserve the individuality of each of these in their analyses, rather than collecting data from large samples and aggregating the data across individuals or situations. My role as a researcher was to understand and explore cases for T2DM depression. I was required to ensure that the interviews were conducted thoroughly. It was my responsibility to ensure that participants understood the investigation questions, felt comfortable discussing the study, and were encouraged to exhaust questions so that sufficient data emerged for meaningful analysis (Creswell, 2014). Further, my

role was to eliminate any situation of conflict of interest. Also, it was my responsibility to ensure that the interview process was unbiased. To the best of my ability, I conducted and analyzed the study without any prejudgment or preconception.

My role as the researcher was to determine if the participants were appropriate to participate in the study by reviewing the participant's medical practice history. The participant must have had a state medical license and specialty medical license, treat T2DM subjects, and had been in practice for 5 years. Also, all data were collected from the participants in their natural environment. In the researcher's role, I viewed myself as a human instrument, gathering data from participants through interviews, tape recordings, and field notes. Data were collected by asking participants interview questions about their clinic and patient population. I recorded participants' answers during the interview sessions, and after data collection, I analyzed participants' answers.

Methodology

The study participant recruitment took place in Saint Louis, Missouri, and the following cities in Mississippi: Charleston, Horn Lake, Calhoun City, Pora, Hernadoi, and Pope. Doctors and nurse practitioners had agreed to confidentiality prior to the study. Participants had ample time to address protocol questions. I obtained protocol approval from Walden University's Institutional Review Board (IRB) before the study began, and I maintained current documents and fulfilled all IRB requests during the study.

Recruitment began by contacting medical schools and the medical society, reviewing the phone book and the internet in Saint Louis, Missouri, Charleston, Horn Lake, Calhoun City, Pora, Hernado, and Pope, Mississippi to obtain a list of clinicians' contact information. I sent a

letter by email to introduce the study to physicians and nurse practitioners requesting their participation in the study. Advertising of the study did not occur, I recruited doctors and nurse practitioners through email and telephone contact. All physicians and nurse practitioners' legal qualifications were verified thoroughly by the Missouri and Mississippi Medical-License Board. The Missouri and Mississippi board of registration has a list of licensed clinicians, including their license number, license expiration date, primary business address, board certification, and professional school.

Recruited participants were expected to speak and read proficiently in English. Participants consisted of five to ten doctors or nurse practitioners with a medical license. According to Creswell (2007), case studies require five to ten cases for a single research study. Doctors and nurse practitioners were required to have at least 5 years of experience and actively be treating patients diagnosed with T2DM. I collected the doctors' and nurse practitioners' demographics and education level during the interviews for sample-description purposes only. All eligible clinicians who gave informed consent were the participants interviewed for this study. I explained the participants' rights during the informed-consent process. Doctors and nurse practitioners had the right to refuse participation without any penalty. Participants verbally consented prior to completing any study procedures or interviews. The Interview Questions Guide directed interviews so that participants discussed matters related to screening patients with T2DM for depression. I interviewed 8 clinicians for this T2DM study, and this sample size achieved saturation of themes. Saturation is achieved once the interviewer has no new data to collect (Creswell, 2014).

Instrumentation

The qualitative research instrumentation used in this study included interview questions and observations. The open-ended interview questions allow me to focus on the individual and provide the opportunity for a detailed investigation of participants' perspectives and an in-depth understanding of the personal context within which the investigation was conducted (Schensul, Schensul, & LeCompte, 1999). Interviews were conducted via telephone or privately online using email. I asked all participants for one hour of their time to answer open-ended questions. An Interview Guide (Appendix A) was used to manage the flow of the interview. The questions in the Interview Guide reflect the literature gap and focus on the objectives of the study. The Interview Guide helped me pursue the same primary lines of inquiry with each participant. Focus groups were not considered for this study because they do not focus on the individual, and they employ less opportunity for the generation of individual accounts.

Procedures

Study research questions were addressed through open-ended, and in-depth interview questions. Questions were administered to informants via telephone in the participant's office or the setting of choice. The primary data source was collecting a narrative recording of 8 participants. Before each interview, participants were requested to agree to a digital record of the conversation. I interviewed participants via telephone and used email for those participants who cannot meet with me in person. Through email, I communicated with participants in writing. The email allowed me to save written conversations to a new external drive.

I sent qualified and interested participants information about the study, participation criteria, the informed-consent form, and the Interview Question Guide. Participants provided

written consent during email or verbal consent during telephone interviews. I asked participants to provide compatible days and times for scheduling a 60 minutes telephone interview and gave basic instructions on how to access Skype if they did not have it installed on their computers. Participants could opt to have a Skype interview instead of a telephone interview.

To assist participants, I sent the interview questions prior to the interview. The interview (see Appendix A) began by asking, "Do you treat patients with T2DM in your practice?" Next, I asked participants about their treatment and screening behaviors. The complete interview protocol appears in Appendix A. I developed the interview questions after referencing work by Ajzen and Fishbein (1980). The interview questions were not pilot tested.

All study-related data and material will be maintained for a minimum of 5 years after completing the research. I identified each participant by their name and I randomly assigned each participant a number to conceal their identity. I recorded all participants' telephone conversations during the interview. The participants' information collected was summarized for the participant during the interview to agree or disagree with the information and I transcribed the interview summary afterward for analysis. I sent a $10.00 Starbucks gift card thanking respondents for participating approximately five to ten days after each interview. Member checking was used to check the accuracy of the transcriptions.

Data-Analysis

The data-analysis techniques included describing, interpreting, drawing conclusions, and determining significance. The emergence of findings through my interaction with and involvement in the data results in the form of patterns, themes, or categories that emerge from the data. The initial stages involve open coding, which means that I am open to what the data is

saying without bringing any preexisting codes. The participants' summary and digital record of the conversation was transcribed before the data were analyzed. Open coding emphasizes recognizing any patterns that emerge from the data. The coding process involves reviewing the data, applying short-hand labels to passages of data, or other items for more natural organization and recognition.

The next step in case study data analysis was comparing across various themes that have emerged from the data as well as making comparisons across cases; I compared themes as they emerge. I used the data to create detailed descriptions of clinicians' screening or not screening patients with T2DM for depression. I used NVivo to analyze the data for the case study. NVivo is software that supports qualitative and mixed-method research. NVivo is a computer program designed to help organize and discover a comprehension of unstructured or qualitative data like interviews and open-ended survey responses. NVivo analyzes small or large volumes of data and is available for Windows PCs. NVivo helps researchers analyze and manage qualitative data, allowing for the researchers to manipulate the data, codes, and categories in the data (Creswell, 2007).

Manually analyzing data could be time-consuming, challenging researchers to manage and navigate the process. Completing this kind of research without software can make it challenging to discover connections in the data and find new insights. I managed data analysis using NVivo software, identifying themes that describe if and why clinicians screen for depression with attention on how well the topics align with TRA.

Issues of Trustworthiness

The issues of trustworthiness were established by credibility, transferability, dependability, and confirmability (Rudestam & Newton, 2007). Researchers use this process to determine whether the participants report accurate information. Credibility in qualitative research corresponds with internal validity. The study findings' credibility requires sufficient time with the participants to check for distortions, explore the participants' experience, and lack details. The extended time was spent to help develop an in-depth understanding of the study, which can convey details about the site and the people that lend credibility to the narrative description.

Transferability in qualitative research corresponds with external validity (Morrow, 2005). External validity would allow the researcher to duplicate the original study design process and apply it to other studies. The qualitative study was a description of a relatively small number of participants within the context of a specific setting. The study participants' qualitative descriptions or settings were sufficient and can be applied in a similar setting. Generalization is the reader's task rather than the author of qualitative studies (Rudestam & Newton, 2007).

Dependability in qualitative research corresponds with reliability (Morrow, 2005). Surveys and interviews were part of the internal validity which obtains information from the participants (Rudestam & Newton, 2007). Internal validity includes scientific observations and measurements (Rudestam & Newton, 2007). Dependability would allow the results of the survey to be duplicated.

Confirmability in qualitative research corresponds with objectivity (Rudestam & Newton, 2007). Purposeful sampling has a means by which qualitative researchers increase credibility. I utilized purposeful sampling by requiring participants to meet specific criteria. Confirmability

was enhanced by using original data; making it available to interested readers, and keeping an ongoing journal of the experience. I provided questions, interpretive processes, document activities, and discussion with participants to interest readers (Rudestam & Newton, 2007).

Ethical

The ethical protection includes the participants' rights, risks, and confidential information about the subject's study results (Creswell, 2014). The rights, risks, and confidentiality of the participants were explained during the informed consent process. The participants were notified of their rights during the informed consent progress. The participants had ample time for questions and answers about the study. The participants' risks include social, economic, physical, and psychological harm, which could occur during or after the study. The social risk could include jeopardizing the individuals' reputation and social standing.

Summary

This section discussed data-collection and analysis protocols for the study. I presented a brief discussion of the qualitative methodology. My role as the researcher which was to interview participants, record answers, and analyze the data. The segment on participants contained the required criteria for participation and presented the advantages and disadvantages of internet use for data collection. Sections on data collection and analysis discussed how data were obtained and used, including activities to enhance rigor and legitimacy. Chapter 4 presents the research findings.

Chapter 4: Results

Introduction

This qualitative case study explored attitudes, behaviors, and perceptions of physicians and nurse practitioners treating individuals with T2DM. Specifically, the purpose of the study was to explore the physicians' and nurse practitioners' screening of patients with T2DM for depression, as well as their thoughts and behaviors regarding screening. Through a systematic sampling methodology, ten participants were interviewed. The following research questions guided this study:

Research Question 1: How do clinicians describe their attitudes toward screening T2DM patients for depression?

Research Question 2: How do clinicians describe their T2DM depression –screening behaviors?

Research Question 3: How do clinicians describe their perceptions of whether their peers support screening the T2DM patient for depression?

In this chapter, I discuss the setting, demographics, data collection, data analysis, and results. The data analysis subsection includes a description of the 10 codes that emerged from the data and contributed to the thematic analysis. I then discuss evidence of trustworthiness, which includes addressing credibility, transferability, dependability, and confirmability of the data. Last, I presented the themes that address each research question.

Setting

After obtaining IRB approval (#10-03-18-0071106), I contacted clinicians through their publicly available hospital email or telephone number to solicit their participation. Additional participants were obtained through the snowball method.

After ascertaining that each participant met the eligibility criteria, including that of specializing in treatment of T2DM, the study interview took place using the interview questions presented in Appendix A and discussed in Chapter 3. Follow-up questions were asked in interviews if necessary to better understand what the participant raised. The interviews took place in a quiet space with a closed door to allow for privacy and no interruptions. No personal or organizational conditions influenced participants during the interview at the time of the study.

Demographics

A total of 11 participants were recruited to the study; however, three of the participants recruited were not included due to insufficient years of experience treating individuals with T2DM and thus not meeting study eligibility. Three doctors and five nurse practitioners took part in the research. The participants all spoke English, had 5 or more years of experience treating individuals with T2DM, and had a medical license in the United States. Participants were between the ages of 30 to 70, with one being between the ages of 30 to 39; four were between the ages of 40 to 49, and three were between the ages of 60 to 69. Six of the participants were female. All participants were married, except one, who was widowed. Three participants were doctors of medicine, and five participants were nurse practitioners (see Table 1).

Table 1

Demographic Information on the Sample

Name	Age Range, in Years	Sex	Marital Status	Education	Years of Experience	Patients per Day
Participant 1	60-70	Male	Married	Endocrinologist	20+	Unknown
Participant 2	40-50	Female	Married	Internal Medicine	15+	41+
Participant 3	40-50	Female	Married	NP general medicine	20+	31-40
Participant 4	60-70	Male	Married	Endocrinologist	20+	Unknown
Participant 5	30-40	Female	Married	NP general medicine	10+	21-30
Participant 6	40-50	Female	Married	NP family medicine	10+	06-10
Participant 7	60-70	Female	Widowed	NP family medicine	05	21-30
Participant 8	40-50	Female	Married	NP general medicine	20+	21-30

Data Collection

I collected data from 8 medical professionals using the method described in Chapter 3 with some approved revision, explained below. Each participant consented and had ample time to ask questions if needed. I collected demographic and descriptive information during the interview from physicians and nurse practitioners. It included age range, education, marital status, type of physician or nurse practitioner, office setting, years of experience treating T2DM patients, and number of T2DM patients seen in a day (see Appendix D). I interviewed each participant 30-60 minutes one time and summarized their responses during the discussion. The interviews took place in a quiet space of the participant's choice with a closed door to ensure privacy for the data collected through telephone conversations or email correspondence.

Participants' interviews were recorded on a digital recording device, and hand-written notes were also taken during the interview. The digital recording and notes were checked after the transcribed data were analyzed to establish credibility. No unusual circumstances arose during data collection interviews.

The data collection differed from the original plan in Chapter 3 to include a nationwide search for participants, and the search was extended to include nurse practitioners. The original data collection plan only included Missouri physicians. However, due to the inability to recruit a sufficient number of physicians for the study in Missouri, I submitted a request form to the IRB for recruitment to be extended nationwide and to include nurse practitioners in addition to physicians. The original research questions were adjusted to include both physicians and nurse practitioners.

Data Analysis

In this study, I captured the perceptions and experiences of participants screening T2DM patients for depression. Once the interviews were complete, I read the transcribed data multiple times while listening to the digital recording to ensure accuracy and began the process of identifying codes and themes that emerged from the data. I put the information into NVivo, arranging the data to establish codes and themes. The data analysis strategy included the steps I outlined in Chapter 3.

First, I recorded and transcribed each interview. I highlighted significant statements of how participants described their experiences and entered the data information into NVivo. The next step included developing codes and themes. A written account of what participants experienced from their descriptions of treating individuals with T2DM depression was

composed. A written summary of the position or opinion of participants' experiences treating an individual with T2DM depression was developed into themes. The following are the codes that emerged, along with short definitions and examples of direct statements taken from the interviews with study participants that demonstrated each code meaning. Ten codes emerged from the data includes.

1. Sleep Deprivation supported by 10% of the participant.
2. Scale Patient Health Questionnaire 2 Item (PHQ-2) supported by 10% of the participant.
3. Scale Patient Health Questionnaire 9 Item (PHQ-9) supported by 20% of participants.
4. T2DM Depression Screening supported 20% of participants.
5. Diabetic Diet supported by 10% participants.
6. T2DM Depression Non-Screening supported by 20% participants.
7. Peer Approval supported by 50% of participants.
8. Advantage of Depression Screening supported by 20% of participants.
9. Focus supported by 40% of participants.
10. Standard of Care supported by 40% of the participants.

Three themes emerged from the codes to answer research questions.

Code 1: Sleep Deprivation

Sleep deprivation emerged in the data referring to any sleep deprivation or disruptions due to T2DM. The sleep deprivation was described as symptoms of sleep fragmentation and often came up in the conversation about depression. Participant 1 contributed the sleep deprivation code.

Code 2: Scale Patient Health Questionnaire 2 Item (PHQ-2)

The code PHQ-2 emerged when a participant described the screening process of individuals with T2DM. The PHQ-2 is a scale that measured the frequency of an individual's depressed mood over the past 2 weeks. The code PHQ-2 refers to tools used to evaluate T2DM patients for depression during a clinic visit. Participant 2 contributed the PHQ-2 code.

Code 3: Scale Patient Health Questionnaire 9 Item (PHQ-9)

The code PHQ-9 emerged when a participant described the screening process of individuals with T2DM. The PHQ-9 is a scale that screens, diagnoses, monitors, and measures the severity of an individual depressed mood. Participants 2 and 8 contributed to the PHQ-9 code.

Code 4: T2DM Depression Screening

The code T2DM Depression Screening emerged when a participant described any screening process of individuals with T2DM. The T2DM Depression Screening code was described as mood and mental changes causing depression in individuals with T2DM. Participants 2 and 8 contributed to the T2DM depression screening code.

Code 5: Diabetic Diet

The code Diabetic Diet emerged when a participant described the diet, eating, or anything related to a dietary plan in T2DM patients. Participant 3 contributed the T2DM diabetic diet code.

Code 6: T2DM Depression Non-Screening

The code T2DM Depression Non-Screening emerged when a participant described the non-screening process of individuals with T2DM. The code of T2DM Depression Non-Screening

was defined as deliberate non-screening of depression in patients with T2DM. Participants 2 and 8 contributed the T2DM depression non-screening code.

Code 7: Peer Approval

The code Peer Approval emerged when the participants talked about their perception of what their peers thought about screening or peers' behaviors regarding screening. It was a perceived positive appraisal of screening by their peers. Participants 2, 5, 6, 7, and 8 contributed to the T2DM peer approval code.

Code 8: Advantage of Depression Screening

The code advantage of depression screening emerged when participants described the benefits of screening for depression in their patients. Participants 2 and 8 contributed the advantage of the depression screening code.

Code 9: Focus

The code Focus emerged when participants described their emphasis on treating the patient's diabetes. Clinicians were not focusing on the comorbidity of patient diabetes disease. Participants 3 and 5 contributed the focus code.

Code 10: Standard of Care

The code Standard of Care emerged when the participants described a standard of care for T2DM patients. Participants 2 and 8 contributed the T2DM standard of care code.

The codes of Focus, Standard of Care, and Peer Approval, rolled over into the theme category to answer the research questions. Overall, three themes emerged from the data to explain physicians' and nurse practitioners' experiences of screening T2DM patients for depression. These themes included: 1) clinicians' focus on treating the physical disease of

diabetes and not the comorbidity of the disease, 2) T2DM depression screening standard practice or part of the clinical assessment process, and 3) peer's approval of T2DM depression screening. Each theme is discussed in conjunction with the relevant research question below.

Results for Research Question 1

Research Question 1 asked: How do physicians and nurse practitioners describe their attitudes toward screening T2DM patients for depression? One theme emerged to answer this question. The first and most dominant theme that emerged from interviews and the theme that provides data for this research question was that physicians and nurse practitioners believed their focus as a clinician was to treat the physical disease of diabetes, with little attention given to psychological or social conditions. Although clinicians acknowledged depression as comorbidity of diabetes, clinicians talked extensively about treating T2DM and their primary focus on the patient's physical disease.

It was evident from four clinicians' statements that the physical illness was the focus of most of their time with their patients. For example, when discussing what they focused on regarding treatment, clinicians often discussed diet. Participant 3 reported that "patients are encouraged to eat less rice, less bread, and encourage healthier foods (for example, green leafy food) and exercise." Furthermore, participant 5 stated, "patients are encouraged to lose weight and not to use food as a comfort." Some patients were prescribed diabetic medication because of weight gain and serum blood sugar increase. In discussing their attitudes towards screening T2DM patients for depression, it was clear that participants primarily focused on diabetes physical treatment with little attention to other conditions.

It should be noted that interviews revealed that clinicians were aware that depression was a comorbidity of individuals with T2DM. Most of the clinicians also reported that they had a standard care protocol for screening T2DM patients for depression as part of the routine visit. However, according to the clinicians' statement, depression was not a primary focus of treating patients with T2DM depression, but rather the clinicians focused on physically controlling T2DM patients' blood sugar.

Therefore, a dominant theme of the interviews was the focus on the physical treatment of depression, and while it should be noted that most of the physicians and nurse practitioners did screen for depression, they did not consider it a focus of their attention. They were aware of depression's comorbidity with T2DM and also acknowledged its importance. However, they did not perceive it to be their focus. The participants' screening behaviors are noted in the description of findings under Research Question 2.

Results for Research Question 2

Research Question 2 asked: How do physicians and nurse practitioners describe their T2DM depression –screening behaviors? A standard of care theme emerged to answer this question. The second and most dominant theme that emerged from interviews, and the theme that answered this research question, is that physicians and nurse practitioners believed their standard of care addresses depression screening of patients' T2DM during routine diabetes checkup. Although clinicians acknowledged depression as a comorbidity of diabetes and did have a screening protocol as part of routine visits, few clinicians talked about depression with their T2DM patients. For example, Participant 2 noted that the PHQ-2 is used to evaluate patient

mental health during the routine diabetic examination in their office. If [the participant] identifies a patient with depression, then the patient is treated with medication for the depression.

Additionally, participant 4 stated that they provide "a brief discussion with T2DM patients about depression". However, they went on to say that further details would be explored, if necessary, with little specificity of what that looks like. Participant 6 stated that "asking the T2DM patients if they are feeling unhappy is how patients are evaluated for depression." Participant 1 described that "the depression screening process for T2DM patients occurs during annual checkups by administering the PHQ-9 scale if the patients are over 65 years of age. If the T2DM patient has a depression diagnosis, then the primary care physician treats the patient for T2DM and depression."

From their discussion of depression screening behavior of T2DM patients for depression, it was clear that participants' standard of care technically addresses an individual's mental status with diabetes, but with little focus provided or developed. This reinforces the theme focus found in Research Question1 in which clinicians' focus is on physical disease management.

Results for Research Question 3

Research Question 3 asked: How do physicians and nurse practitioners describe their perceptions of whether their peers support screening the T2DM patient for depression? The third theme that emerged from interviews is that physicians believed their peers would support screening T2DM patients for depression. According to Participant 2, "[their] peers would support screening T2DM for depression and would say that treating the patient's mental health was essential." Participant 2 also stated that, "the American College of Medicine recommends screening patients for depression for chronic illness." Furthermore, Participant 3 stated, "if

[their] peers are screening T2DM for depression, [their] clinic would evaluate if that was something to incorporate into [their] clinic". In their discussion, Participants 2, 5, 6, 7, and 8 stated that they understood the benefit of screening T2DM for depression, believed it would be widely supported, and acknowledged that early detection of depression would allow for treatment of depression sooner rather than later. Despite a keen awareness of peer and professional organization support for screening for depression in T2DM, with ample evidence for its necessity, clinicians continued to focus on being responsible for managing the physical side of the disease.

Table 2

Theme Findings

Participants	Themes	Research questions
1, 3, 4, 5	Focus	How do physicians and nurse practitioners describe their attitudes toward screening T2DM patients for depression? Although clinicians acknowledged depression as a comorbidity of diabetes, clinicians talked extensively about their focus on treating T2DM being primarily the patient's physical disease.
2, 6, 7, 8	Standard of care	How do physicians and nurse practitioners describe their T2DM depression –screening behaviors? From their discussion of depression screening behavior of T2DM patients for depression, it was clear that participants' standard of care technically addresses an individual's mental status with diabetes, but with little focus provided or developed.
2, 5, 6, 7, 8	Peers approval	How do physicians and nurse practitioners describe their perceptions of whether their peers support screening the T2DM patient for depression? Despite a keen awareness of peer and professional organization support for screening for depression in T2DM, with ample evidence for its necessity, clinicians continued to focus on being responsible for managing the physical side of the disease.

Evidence of Trustworthiness

Credibility

As noted previously in the methods section of Chapter 3, quality research involves validation strategies. According to Creswell (2007), credibility, transferability, dependability, and confirmability, are essential to helping solidify the study's documentation accuracy. This qualitative case research study aimed to understand participants' attitudes, behaviors, and perceptions of screening patients with T2DM for depression. The participant is best able to determine credibility of the data that they have contributed. Thus, one of the best ways to establish credibility is to have participants check the data for accuracy. I provided a summation of the participant responses to the interview questions during the discussion, and the participants were allowed to agree or ensure correctness, which was the most significant method to verify credibility, according to Creswell (2007). This study further addressed reliability of the data through the saturation in the information received.

Transferability

Transferability was addressed in this study through purposeful sampling. It was further addressed through the detailed description of the population and setting. Purposeful sampling is a technique widely used in qualitative research to identify and select participants for the most effective use of limited resources. Although this study utilized purposeful sampling by requiring participants to meet specific criteria, the results may apply to other studies (Rudestam & Newton, 2007). This qualitative research presented detailed description of the participants, and the study background was sufficient to apply to a similar environment.

Dependability

Reliability in qualitative research can be seen as dependability in qualitative research (Rudestam & Newton, 2007). This research established dependability through the use of auditory taped interviews. I reviewed the transcribed audiotapes numerous times to maintain accuracy in conjunction with detailed notes of each interview.

Confirmability

Confirmability is the degree to which others can confirm the results. Confirmability was easily established by documenting the procedures for checking and rechecking the data. I summarized the participants' results during the interview to recheck accounts of their experience. Though inter coding reliability may be established through use of two or more coders, this study used intra coding with only me. I intra coded systematically to ensure all coding was consistent (Creswell, 2007).

Summary

This chapter provided the original study results that examined physicians' and nurse practitioners' attitudes, behaviors, and perceptions, regarding screening T2DM patients for depression through three research questions. The results led to 10 codes and 3 theme findings. The overall results indicated that participants' varied in treating T2DM patients. Peer influence on screening patients for T2DM, while reported to be positive, appeared to have little effect on clinicians. The medical office process appeared to regulate whether individuals with T2DM were screened for depression by the clinicians. The clinicians were aware that individuals with T2DM could develop depression; however, the majority of the clinicians' focus in treatment appeared to be on the patients' physical management of disease through diet regimen, medication, and

exercise. In Chapter 5, the findings, implications, and recommendations for practice and research are presented.

Chapter 5: Discussion, Conclusions and Recommendations

Introduction

This qualitative case study was conducted to examine clinicians' attitudes, behaviors, and perceptions in screening individuals with T2DM for depression. A qualitative case study design was employed, that allowed for physicians and nurse practitioners to describe their process for screening patients with T2DM for depression. While conducting a review of the literature, I found limited research that focused on individuals with T2DM and depression. This research study was driven by that lack of research and the need to examine attitudes and behaviors of clinicians towards screening T2DM patients for depression. Results from this study could add to the body of knowledge relating to clinicians and T2DM depression screening.

In this chapter, I discuss the analysis and interpretation of the findings. I also discuss study limitations, recommendations for future research, and implications for social change.

Clinicians were asked three research questions pertaining to their processes for screening T2DM patients for depression. The research questions were as follows: 1) How do clinicians describe their attitudes toward screening T2DM patients for depression? Based on participants' responses, I determined that three participants screened patients for T2DM depression as this was part of the clinic's health checkup process; however, the majority of clinicians did not screen T2DM patients for depression. 2) How do clinicians describe their T2DM depression screening behaviors? Most of the clinicians' treatment focus appeared to be on the patients' physical management of their disease through diet regimen, medication, and exercise. I also found that most participants did not screen T2DM patients for depression or speak with the patient about depression being a comorbidity of diabetes. Findings further showed that clinicians were aware

that individuals with T2DM could develop depression. 3) How do clinicians describe their perceptions of whether their peers support screening T2DM patient for depression? While peer influence on screening patients with T2DM for depression reported to be positive, it appeared to have little effect on clinician's behavior or attitudes towards screening T2DM patience's for depression.

This qualitative study included eight participants that I interviewed for approximately 30 to 60 minutes each. Based on the answers to the three research questions, four out of the eight participants felt they should start screening T2DM patients for depression. The four stated that perhaps depression screening should be added to their clinic screening process for T2DM patients. Results led to 10 codes and three theme findings; the overall results indicated that participants' experience varies when treating T2DM patients.

Interpretations of Finding

TRA was used as a theoretical lens to explore clinicians' behaviors related to screening T2DM individuals for depression. Three research questions were created to explore phenomenon experiences of clinicians' processes of screening T2DM patients for depression. From the interview data, 10 codes and three themes emerged. The overall results indicated that participants' attitudes varied toward T2DM depression screening.

TRA served as the theoretical framework for this study. Using TRA as a theoretical lens, this study explored clinicians' depression screening behaviors, attitudes toward screening, and perceptions of social peer approval toward screening patients with T2DM for depression. The study results led to 10 codes and three theme findings. The three themes emerged from the data to explain physicians' and nurse practitioners' experience as it relates to screening T2DM

patients for depression. The first theme included clinicians' focus on treating the physical disease of diabetes and not the comorbidity (depression) of the disease, the second theme was T2DM depression screening standards of care are part of the clinical assessment process, and the final theme was that peers approved of T2DM depression screening.

The medical office process appeared to regulate if individuals with T2DM were screened for depression by the clinicians. The clinicians are aware that individuals with T2DM could develop depression; however, most of the clinicians' focus on treatment appeared to be on the patients' physical management of disease through diet regimen, medication, and exercise. Results revealed that clinicians focus primarily on treating individuals with T2DM physical disease and ignore T2DM depression. The four clinicians lacking screening individuals for T2DM depression could result in clinicians not providing the patient with comprehensive care for T2DM diabetes. Providing patients with T2DM, a psychological evaluation for depression, and a physical treatment plan could improve this population's overall health.

I also used TRA as a theoretical lens to explore clinicians' attitudes toward screening T2DM patients for depression. Results revealed that some physicians and nurse practitioners have a T2DM standard of care procedure that includes screening individuals with diabetes for depression during routine diabetes checkups. Further, clinicians who acknowledged that depression is a comorbidity of diabetes have a screening protocol as part of routine visits and discuss depression with their T2DM patients during their routine checkups. By screening T2DM patients for depression, the physician and nurse practitioners provide the patient with a comprehensive care plan for managing T2DM.

TRA was also used as a theoretical lens to explored clinicians' perceptions of social peer approval toward screening patients with T2DM for depression. Results revealed that clinicians believe their peers would support screening T2DM patients for depression. Results indicated that clinicians' peers supported screening T2DM patients for depression and felt that treating the patient's mental health was essential. The benefit of screening T2DM patients for depression was widely supported, and it was acknowledged that early detection of depression would allow for depression treatment sooner. Despite a keen awareness of peer and professional organization support for screening for depression in T2DM patients and with strong evidence for its necessity, clinicians continued to focus on their responsibilities of managing the physical side of the disease. Even those clinicians are aware that individuals with T2DM could develop depression. Most clinicians focus on the patients' physical management of disease because that is the standard of care for diabetic patients.

Limitations of this Study

This research study was limited to a focus on clinicians screening of patients with T2DM for depression. This study results do not expand to other chronic diseases. Another limitation was that if clinicians understand T2DM depression exists and if they included screening patients with T2DM for depression. The completion of this study did not provide clear evident that clinicians integrated T2DM screening to evaluate depression for diabetic patients; thus, not knowing if screening T2DM patients was integrated into the daily clinical practice could present as a possible potential weakness of this study.

The study's final limitation was that data collected from a small group may not yield an accurate picture of the present population, and generalization of the results may be ambiguous

due to the limited number of interviewees. The original study included only eight participants recruited from the Saint Louis Missouri, Charleston Horn Lake, Calhoun City, Pora, Hernado, and Pope Mississippi of the United States. Due to the small sample, the data may not be generalized to other populations in other regions, possibly limiting transferability.

Recommendations for Research

One of the first recommendations for further study would be for researchers to design a study with various experience treating T2DM patients for depression. This study was designed to recruit participants with a level of experience treating T2DM patients for five years or greater. Conducting the same research with clinicians who are new to treating T2DM patients or who have only been treating T2DM patients for less than five years, may yield different results as new clinician may have a different view point or may have gain additional knowledge that may not have been provided to the participants who met the criteria for this present study.

A second recommendation for future research is to seek participants from different geographical areas throughout the United States. This present study recruited participants from Saint Louis, Missouri, Charleston, Horn Lake, Calhoun City, Pora, Hernado, and Pope, Mississippi. Conducting this study over different geographical areas across the United States may results in different results as different states may have different guidelines and attitudes as it relates to screening forT2DM depression.

Implications

Based on the findings from this study, there are several implications for social change. A potential implication for social change could be the benefit to individuals living with T2DM being diagnosed earlier and receiving treatment that could result in limiting the effects of

depression. An individual living with T2DM would be diagnosed with depression, and treatment would begin earlier than later in the disease progression. Another implication clinician focusing on T2DM depression would be an enormous potential impact for positive social change for the individual and the medical community level. If clinicians emphasized screening individuals with T2DM for depression, the result could lead to early depression treatment. An additional implementation for social change could be the implementation of T2DM depression screening instruction for future clinicians seeking to serve this population.

Conclusion

This research study revealed that every participant believed it is beneficial to create a standard practice of screening T2DM parents for depression. Results showed that four of the participants screen their T2DM patients for depression and provide treatment when necessary. Results further revealed that peers approved of depression screening and saw this as an important additional to treatment planning for T2DM patients. This study extended the body of knowledge concerning clinicians' phenomenon experience and lends insight into the process of depression screening perspective on the role of clinicians. The potential implication for social change on the individual and medical community level is that clinicians will more rapidly provide information to patients around T2DM depression and develop a process to provide treatment plans that address depression during the treatment of patient's living with diabetes in an effort to provide overall mental and physical health success.

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Appendix A: Interview Questions

1. Do you talk to your Type 2 Diabetic patients about depression?
    a) If yes, please describe your process for talking with your patients.
    b) If no, please describe why you did not discuss depression with your patients.
2. Do you screen T2DM patients for depression?
    a) If yes, please describe your process for screening T2DM patients for depression.
    b) If no, please describe why you do not screen T2DM patients for depression.
3. What do you think the advantage and disadvantage of screening T2DM patients for depression?
4. Do you think your peers would approve of screening T2DM patients for depression?
    a) Describe what you think your peers think about screening T2DM patients for depression.

Appendix B: Confidentiality Agreement

Name of Signer:

During the course of my activity in collecting data for this research: Vickie Bland will have access to information, which is confidential and should not be disclosed. I acknowledge that the information must remain confidential, and that improper disclosure of confidential information can be damaging to the participant.

By signing this Confidentiality Agreement, I acknowledge and agree that:

1. I will not disclose or discuss any confidential information with others, including friends or family.
2. I will not in any way divulge, copy, release, sell, loan, alter or destroy any confidential information except as properly authorized.
3. I will not discuss confidential information where others can overhear the conversation. I understand that it is not acceptable to discuss confidential information even if the participant's name is not used.
4. I will not make any unauthorized transmissions, inquiries, modification or purging of confidential information.
5. I agree that my obligations under this agreement will continue after termination of the job that I will perform.
6. I understand that violation of this agreement will have legal implications.
7. I will only access or use systems or devices I am officially authorized to access, and I will not demonstrate the operation or function of systems or devices to unauthorized individuals.

Signing this document, I acknowledge that I have read the agreement and I agree to comply with all the terms and conditions stated above.

Signature: Date:

Appendix C: Inclusion and Exclusion

Inclusion Criteria:

- Practice in Family Medical, Internal Medicine or Endocrinologist
- Treat T2DM patients
- English speaking
- Medical License in the United States
- Five Years of Experience in the field

Exclusion Criteria:

- Do not have a medical license in the United States

Appendix D: Demographic Information

1. Demographics
    a. Age (Date of Birth)
    b. Gender
        i. Male
        ii. Female
    c. Marital status
        i. Married
        ii. Widowed
        iii. Divorced
        iv. Single
    d. Education
        i. Bachelor Degree,
        ii. Doctor of Medicine (MD)
        iii. Doctor of Osteopathic Medicine (DO)
    e. Type of Doctor
        i. Medical practitioner
        ii. General practitioner
        iii. Internists
        iv. Endocrinologist
        v. Family Physicians
    f. Office setting

i. Private Clinic

ii. Hospital Medical center

g. Length of time treating T2DM patients

i. 5 years

ii. 6-10 years

iii. 11-15 years

iv. 16-20 years

v. 20 or more years

h. Number of T2DM patients seen in a day

i. 1-10

ii. 11-20

iii. 21-30

iv. 31-40

v. 41 or more

Appendix E: Recruitment Letter to Participants

Dear Sir or Madam:

My name is Vickie Bland, and I am a doctoral student at Walden University. I am currently seeking participants for my doctoral dissertation study and am writing to see if you would like to participate in my study. . I am studying physicians' or nurse practitioners' perspectives on depression screening within diabetic patients and am currently seeking physicians or nurse practitioners to participate in this study.

Participation in this research is voluntary and involves participating in one 60-minute interview. I plan to interview a select number of medical professionals' face to face or a telephone call in this study.

All of your responses to the interview questions will be kept anonymous. . The interview will take 60 minutes, and the interview will be scheduled convenient to you and your workplace. If you would like to participate, please respond to this email indicating you are interested in participating. A follow-up email will then be sent to confirm participation and to schedule an interview time.

Sincerely yours,

Vickie Bland