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Levels of Income and Quality of Care for Adults with Type 2 Diabetes

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Abstract

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by

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MA, Bellevue University, 2005

BS, College of New Rochelle, 1999

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Type 2 diabetes impacts the lives of adults in the low-income, middle-income, and high-income brackets in the United States and globally. More research was needed on how adults 45 years and older in Marion County managed their diabetes and the care they received based on their income. This case study involved investigating how adults 45 years and older in Marion County self-managed their diabetes and the quality of care they received based on their income. The health belief model supported the conceptual framework for the study. Data were collected through face-to-face and telephone interviews with 15 purposefully selected participants. Data were analyzed using the open-coding technique to reveal categories and themes. Results of the study indicated that adults in Marion County engaged in diabetes self-care practices but lacked the collective knowledge of the importance of self-care measures. Results also revealed that individuals had access to quality care including medication therapy, diet, exercise, and blood glucose monitoring. However, results indicated that within the 3 income groups (low, middle, and high), low-income individuals saw a doctor less frequently due to cost and out-of-pocket expense. Also, social support played an important role in access to health care and self-care management. The study results could provide educators and health care providers with insight on how people in Marion County are self-managing their diabetes and empower them to implement more programs to provide the needed education to these adults with Type 2 diabetes mellitus. The positive social change because of this study includes bringing more awareness about the importance of diabetes self-care management to individuals, families, and communities.

Levels of Income and Quality of Care: A Case Study for Adults with Type 2 Diabetes

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Dedication

I dedicate this dissertation to my siblings, my children, my nieces, nephews, and my grandson Jayden. To my best friend for over 40 years Dr. Vivienne Cornell-Hall and to my parents the late Aston and Mavis Bowen.

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I would like to thank Almighty God for the love and strength that He bestowed upon me through this journey. Thanks to my amazing chair Dr. Magdeline Aagard for the guidance and support you provided. You are truly awesome. Thanks to my committee members Dr. Suzanne Richins and Dr. Daniel Okenu for your role in my dissertation. Your constructive feedbacks remedied my dissertation and for that I am grateful. Thanks to my daughter Brandy, my son MJ, and my grandson Jayden for your encouragement and confidence in me. For accompanying me to my residencies and making sure I had everything I needed to succeed, I am truly grateful. To my nephew Matthew, thank you for fixing all my computer issues. To all my other family members and friends thank you for your encouragement and for being there when I needed you most.

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Chapter 1: Introduction to the Study

Introduction

Diabetes mellitus (DM) poses a global public health problem (Szabo et al., 2015; Zimmer, 2016). Commonly referred to as *diabetes*, DM is a chronic metabolic disease, affecting more than 29 million people in the United States (Centers for Disease Control and Prevention [CDC], 2014a). The number of individuals with DM in the United States increased from 26 million in 2010 to over 29 million in 2014 (Bajwa, Sehgal, Kalra, & Baruah, 2014; CDC, 2014a). Other researchers have reported that, by the year 2050, more than 26 million individuals aged 65 years and older will have the disease (Caspersen, Thomas, Boseman, Beckles, & Albright, 2012; Fonesca, Kirkman, Darsow, & Ratner, 2012). The growth of this disease in an aging population may lead to increased financial burdens for individuals and their families (CDC, 2014b; Kirkman et al. 2012; Menke, Casagrande, Geiss, & Cowie, 2015). For this study, I conducted a literature search and found very little information on income or personal finances related to diabetes management. This lack of research on the impact of personal finances on diabetes management and treatment goals has led to a gap in the literature on diabetes care for adults. Therefore, a sound understanding of patients' perceptions and experience of diabetes care in relation to their finances could improve self-management and health outcomes.

I conducted this study in Marion County, Florida, and found that there were many aging adults with Type 2 diabetes mellitus (T2DM) in the county. The growing number of people with T2DM posed an economic burden on the U.S. health care system

(American Diabetes Association [ADA], 2013b). Untreated T2DM may lead to a health catastrophe for patients and therefore warrants management interventions to delay the onset of and decrease complications associated with the disease (Rich, Shaefer, Parkin, & Edelman, 2013). It is thus essential to understand how adults with T2DM manage the disease and to have sound knowledge of how they perceived the effect of finance on the care provided. Such information may prompt the development of comprehensive health care policies and interventions to better manage care adults with T2DM.

Researchers have argued that with the unprecedented aging of the population, the demand for medical care for diabetes and its complications will increase (Liao, Chang, & Sun, 2012). The ADA, (2015) further noted that cost affects diabetes care, primarily because adult individuals tend to require several medications to control diabetes and decrease the accompanying complications. Consistent with this finding, Liao et al. (2012) posited that adults without health insurance coverage are expected to pay for medical expenses out of pocket. In general, people with T2DM have more medical expenses than their counterparts without the disease (ADA, 2013b). Thus, the high medical cost could present a financial burden for the adult diabetic population based on their income status. This induced financial burden could escalate and lead to further inaccessibility to care.

In this chapter, I describe the background of the study, offered the problem statement, discussed the purpose of the study, and presented the research questions. I also introduced the health belief model (HBM) that I used as the conceptual framework along with Banduras self-efficacy model. Other areas covered in this chapter include the nature

of the study, definitions, assumptions, scope and delimitations, limitations, significance of the study, and summary.

Background of the Study

DM forms a group of metabolic diseases that prevents the body from producing and using insulin effectively (Healthy People 2020, 2014c; Shrivastava, Shrivastava, & Ramasamy, 2013). The oldest chronic diseases known to man (Olokoba, Obateru, & Olokoba, 2012), diabetes is characterized by high levels of blood glucose (Caspersen et al., 2012; Meetoo, 2014). The CDC (2012) considered blood glucose over 140 mg/dl to be high (hyperglycemia) and below 70 mg/dl to be low (hypoglycemia). According to the ADA, 2013c), a blood glucose ≥126 mg/dl is an indication for a diagnosis of diabetes. The two main types of diabetes are Type 1 DM (T1DM) and T2DM. Other types of DM include gestational diabetes and prediabetes (Atkins, Vernon, & Eberstein, 2004; CDC, 2012; Colberg et al. 2016). T1DM commonly occurs in childhood and is also known as *juvenile diabetes* (Brill, 2008; CDC, 2012). This form of diabetes occurs because of the inability of the beta cells in the pancreas to produce insulin; individuals with this type of diabetes will require life-long insulin replacement (Atkins et al., 2004; Dall et al., 2014).

T2DM occurs as a result of the body's inability to use insulin effectively (CDC, 2012; Colberg et al. 2016; Olokoba et al., 2012). Adults aged 65 years and older have the highest incidence of T2DM (CDC, 2014a; Moghissi, 2013) when compared to any other age groups (Kirkman et al., 2012). T2DM accounts for 90%-95% of all cases of diabetes (CDC, 2015; Moghissi, 2013; Okoloba et al., 2012). Gestational diabetes occurs during the later months of pregnancy when the placenta produces a hormone that causes

increased insulin resistance by the body cells (Atkins et al., 2004; Dall et al., 2014). Gestational diabetes can cause pregnancy complications (high blood pressure) or birth traumas or defects and is a preexisting condition for T2DM (CDC, 2015).

Prediabetes occurs when blood sugar levels are elevated but are not high enough to be classified as diabetes (CDC, 2012). The CDC (2014a) reported that 86 million adults aged 20 years and older had prediabetes and that 15% to 30% of these individuals would develop T2DM within 5 years of being diagnosed with the preexisting condition. Kirkman et al. (2012) conducted a study on diabetes in older adults and determined that the occurrence of diabetes varied according to the individual diagnostic criteria used for the survey. For instance, diagnostic tests to diagnose or determine T2DM include postprandial hyperglycemia screening and HgbA1C measurement; both hyperglycemia and HgbA1C are prominent characteristics of the disease (Kirkman et al., 2012).

DM is a health concern for the aging population (ADA, 2015). The rapid increase in the number of individuals with diabetes has triggered a linear growth in expenditure on health care in the United States (CDC, 2012). The ADA (2012) and the CDC (2014a) estimated that the annual spending on direct and indirect diabetes care in the United States is $245 billion, which represented a 41% increase from the $174 billion spent on care in 2007. The exponential growth in health care cost is largely attributed to diabetes care and in 2014 included a direct medical expenditure of $176 billion and indirect (disability, work loss, and premature death) cost of $69 billion (CDC, 2014a). Thus, the disease, which is ranked as the seventh leading cause of death in the United States, has

had an adverse impact on the country's health care system and economy (CDC, 2012, 2014a).

The complications of diabetes can be severe and life-threatening. When compared to nondiabetic individuals, people with diabetes have a higher rate of premature death, more pronounced functional disability, and more coexisting conditions, such as hypertension, coronary heart disease, stroke, and kidney disease (ADA, 2015). Researchers have examined the high cost of prescription drugs (Munshi et al., 2013) and the importance of self-management in controlling diabetes (ADA, 2014). Yet there have been few studies exploring the quality of attentive care among individuals with T2DM at various income levels. In the context of patient-centered care, diabetes self-management includes lifestyle changes such as diet and exercise plans, pharmacotherapy, blood glucose self-monitoring, diabetes education, foot care, and management of psychosocial changes (Ofori & Unachukwu, 2014). Thus, the holistic approach is appropriate to be considered during the provision of care for people with T2DM.

Patterson (1998) noted that holism affect changes in different aspects of individuals' lives and within their environment. The holistic approach views and treats the patient as a whole and allows for the implementation of care to self-renew, self-transcend, and move forward to better health outcomes (Patterson, 1998). Patterson further stated that the holistic approach dominates the interconnection of the physical and psychosocial aspects of individual well-being.

Although holism is not concisely defined, practitioners have agreed that it involves comprehensive care of the whole individual (Patterson, 1998). The holistic

approach holds that behavioral and lifestyle changes are necessary to effect better diabetes outcomes (Ofori & Unachukwu, 2014). Previous researchers conducted decades of intensive work on different segments of diabetes; their work resulted in improved understanding of the pathophysiology of the disease, as well as improved therapies that could control the disease and delay complications (Fonesca et al., 2012).

A holistic approach for investigating the care of adult individuals with T2DM in Marion County, Florida includes a focus on self-efficacy, social aspects, socioeconomic factors, including income and self-management. Thus, in this case study I addressed socioeconomic, psychosocial, and environmental factors that influence the clinical outcomes and self-care behaviors of adults with T2DM (Shrivastava et al., 2013; Walker, Smalls, & Egede 2015). The possible social change implications of this study include increased awareness to individuals, families, health care educators, and health care providers about the challenges of diabetes care and self-management. Dissemination of the study results may help policy makers implement programs and interventions to further investigate and address the challenges experienced by people with T2DM.

Problem Statement

DM comprises an urgent chronic health condition caused by insufficient production of insulin in the body or by the inability of the body to effectively utilize insulin (CDC, 2014a). T2DM is one of the most common health conditions worldwide and is a global public health concern (Asif, 2014; Siddique, Islam, Banik, & Rawal, 2017). T2DM presents a serious public health catastrophe for the aging American population CDC, (Kirman et al. (2012); and accounts for 90% of all diabetes cases in the

United States (CDC, 2015; Moghissi, 2013). DM is the health hazard of the century, according to the World Health Organization (WHO, as cited in McKinlay, Piccolo, & Marceau, 2012) and represents a global crisis affecting human development, especially in low- to middle-income countries (LMIC; Ku & Kegis, 2015). T2DM affects 291 million people in LMIC (Ku & Kegis, 2015). The growing global societal and economic burden of T2DM presented the urgent need to implement interventions to manage the disease (Herman, 2013) and to decrease escalating expenditures caused by reduced labor productivity (Ku & Kegis, 2015).

The specific problem is that adults with T2DM are at risk for premature retirement and limited immediate income (Schofield et al., 2015). Thus, having a low income could affect the quality of care for individuals with T2DM in Marion County, Florida. The significance of the problem is that public health strategies have recognized DM as an epidemic and as an economic burden on the U.S. health care system (Comino et al., 2015; Herman, 2013). The total annual estimated cost of DM, direct and indirect, in the United States is $245 billion (ADA, 2012; CDC, 2014a). DM is a costly public health concern and warrants a multidisciplinary approach, including pharmacotherapy, to manage the disease effectively and to reduce the economic and clinical burden (Szabo et al., 2015). In a recent literature review, I did not find any extant study of how people in Marion County, Florida experience and manage their diabetes based on their finances. This lack of scientific evidence regarding the impact of income levels on the quality of care of adults with T2DM constitutes a gap in the literature.

Purpose of the Study

In this case study, I investigated how adults living with T2DM in Marion County, Florida managed their disease based on their finances, focusing on their individual experiences of different financial statuses and the quality of care they received. By providing a robust understanding of how adults living in Marion County, Florida with T2DM perceive their care and self-management, specifically relating to income and access to care, I was able to identify areas for resource improvement and define strategies to provide better and more positive outcomes (Cheng & Kindig, 2012). The use of case studies allows for in-depth investigations in real-world contexts (Creswell, 2013; Yin, 2014). For this study I specifically used the case study design to gain a more diverse and comprehensive picture of the income-based self-management practices of adults with T2DM in Marion County, Florida. The aging U.S. population and the increasing number of people with DM make it important to understand diabetes self-management among adults at different income levels.

In this case study, I also used holism to understand participants' experiences in managing their disease. I focused on diabetes self-management, prevalence, complications of the disease, mortality, health care costs stemming from the disease income, social support, and the quality of care for individuals with the disease. DM care is costly, and the need for monetary support is a concern for everyone; therefore, this study involved the social and economic activities of the individuals with T2DM. The increase in the incidence of T2DM among individuals aged 45 years and older triggered the need for a complete understanding of patients' experience of their care and self-

management from an income perspective. The information obtained from this study may be used by policy makers to develop new policies that may contribute to better health outcomes among this specific population.

Research Questions

I intended the research questions to give a broad understanding of the economic barriers and challenges of diabetes management experienced by adults with T2DM in Marion County. I derived the research questions for this study from the systematic review of existing literature to provide a better understanding of individuals' perception of the quality of care among adult with diabetes in high-, middle-, and low-income brackets in Marion County. The research questions developed for this study are the following:

RQ 1: What are the experiences of adults with T2DM living in Marion County, Florida with the quality of health care provided and how does it affect their self-management of their disease?

RQ 2: What are the experiences of adults with T2DM in different income brackets living in Marion County, Florida with access to and quality of care?

RQ 3: What is the perceived self-efficacy for adults with T2DM in Marion County, Florida?

Conceptual Model

I used the health belief model (HBM) to support the conceptual framework for this study. The model was developed in the 1950's to investigate why people defer from participating in preventative health measures (Orji, Vassileva & Mandryk, 2012). The model is guided by several constructs to credit its purpose, however self-efficacy was the

focus of this study based on the HBM. Nassar Al-Dossary and Panagiota (2014) stated that self-efficacy is applied to influence treatments and self-management.

The devastating effects of diabetes and its complications interfere with the quality of life among adult individuals as well as affecting health care industries worldwide (Kazemi-Galougahi, Ghaziani, Ardebili, & Mahmoudi, 2012). Therefore, a sense of self-efficacy could heighten and sustain efforts to modify patients' behaviors (Nassar Al-Dossary & Panagiota, 2014) and promote better health outcomes among individuals with T2DM. According to Bandura, 1994 perceived self-efficacy is buried in people's beliefs about their ability to override and control influences or events that affect their lives. Bandura further determined that self-efficacy affects individuals' thinking, beliefs, and motivation; and increases the belief that they can overcome challenges in any task or situation (Nassar Al-Dossary & Panagiota, 2014). In this study I used the HBM to understand health beliefs and self-care behaviors in adults with T2DM in Marion County, Florida.

Nature of the Study

I used a qualitative research methodology for this study to investigate how adults with T2DM in Marion County, Florida self-managed their diabetes, as well as the quality of care that they receive based on their income. By using the qualitative method, I was able to find out what people do, think, and know about the research problem (Patton, 2002). In a qualitative study, the researcher's aim is to gather rich, exhaustive information to gain an understanding of peoples' beliefs, experiences, attitudes, and behaviors on the topic of inquiry (Pathak, Jena & Kalra, 2013). Policy makers and health

care professionals must understand the relative importance of income in the care of patients with T2DM. For this reason, I used the qualitative method of inquiry to uncover and explore conditions that existed in an ongoing situation (Pathak et al., 2013; Singleton & Straits, 2005; Teherani, Martimianakis, Stenfors-Hayes, Wadhwa, & Varpio, 2015). The qualitative method allowed me to explore the phenomenon and gain a better understanding of the quality of care for adults with T2DM in Marion County.

In a research study, a researcher must align the research approach with the research question to achieve rigorous results (Teherani et al., 2015). The quantitative method is based on the belief that reality can be discovered with experimental methods (Newman & Benz, 1998; Teherani et al., 2015). This methodology involves generalizability from the sample to the population (Newman & Benz, 1998). Hence, I did not use the quantitative method because it would not have provided sufficient understanding of the care and self-management experiences of individuals with T2DM.

Although I considered other research designs for this study, the case study design seemed most appropriate to examine the research problem. Yin (2014) proposed that a case study relates to a detailed inquiry into a problem, in which researchers explore the possible interaction between the case and its context. I used the case study approach to gain an understanding of the ongoing real-life perceptions and care of adults with T2DM. Furthermore, Yin stated that researchers can gain sound understanding of the case when they examine the interaction between the case and its context. Thus, using the case study design helped me define the complexity of the problem under study (Patton, 2002).

I also considered phenomenology, ethnography, and grounded theory qualitative designs for this study, but I chose not to use these methodologies because they did not align with the research question. In phenomenology, the research question is focused on a detailed understanding of the participants' lived experiences of the phenomenon under study (Hageman & Frederick, 2013). Researchers use phenomenology to uncover a deep understanding of the lived experiences, meanings, and perception of the phenomenon (Klinke, Thorsteinsson, & Jónsdóttir, 2014). I determined that a phenomenological approach would not have been an appropriate method with which to gain an understanding of the experiences of adult individuals with T2DM in regard to income level and quality of care. I needed to examine 3 income levels as separate situations or cases and phenomenology is primarily concerned with a single phenomenon.

Grounded theory involves building theories from structures and processes derived from data collected for a study (Creswell, 2014). Conversely, an ethnographic inquiry examines the activities of a group of people (Rudestam & Newton, 2015). The ethnographic researcher seeks an understanding based on cultures and beliefs within the group (Rudestam & Newton, 2015). I did not focus on cultures, beliefs, structures, or processes in this case study, but rather on individuals' experiences and perceptions of T2DM care and self-management from an income perspective, I determined then, that grounded theory and ethnography would not be appropriate.

An appropriate data collection process enhances the quality of the data collected and adds credibility to the study (Elo et al., 2014). I used face-to-face and telephone interviews as the major data collection methods for this study. In addition, I used

audio/voice recording, with the participants' permission, and took notes to enhance data collection. I did not use NVivo11, as I had originally proposed, but instead I employed the manual coding method.

Operational Definitions

Adult: Adults have ability to be responsible for their own decision making and are considered self-directed (Palis & Quiros, 2014). For this study, I used the term *adult* to refer to individuals aged 45 years and older capable of making their own decision to participate in the study.

Health care access: Access to health services comprises the timely use of personal health services to achieve the best health outcome (Healthy People 2020, 2014b). Furthermore, detection and treatment of health conditions require access to a health care location for needed services. Thus, access to health care includes coverage, services, timeliness, and workforce (Healthy People 2020, 2014b).

Hypoglycemia: Hypoglycemia occurs when blood sugar levels fall below normal due to an overreaction to high insulin levels in the body. According to the ADA (2015), hypoglycemia occurs when the blood glucose level is 70mg/dl or below.

Hyperglycemia: Hyperglycemia is technical term for high amounts of glucose (sugar) in the blood. Hyperglycemia occurs when the body has too little insulin or cannot use insulin properly in the body (ADA, 2014).

Income levels: Experts and a large body of researchers have determined that many Americans do not know into which income category they fall (Francis, 2012). For the benefit of this study, I used the term *income levels* to refer to the fluctuation of earned

revenue, using high-, middle-, and low-income categories. As documented in *U.S. News and World Report* (Francis, 2012), low-income consists of $23,050 per year for a family of 4, middle-income consists of earnings of $32,500 per year, and high-income consists of $60, 000 per year.

Self-efficacy: According to Al-Khawaldeh, Al-Hassan, and Froelicher (2012), self-efficacy means a person's confidence in his or her ability to perform health behaviors to achieve good health outcomes.

Socioeconomic status: Socioeconomic status constitutes a composite measure that includes economic, social, and work conditions (CDC, 2014a). The CDC (2015) discussed socioeconomic concerns, areas of income, education, and occupation. For this study, I used income as the primary factor for socioeconomic status.

Pharmacotherapy: In this study, I used *pharmacotherapy* to refer to the treatment and management of diabetes with medication therapy.

Quality of care: Quality of care is the extent to which health care services provided to individuals is safe, effective, timely, efficient, and people centered (WHO, n.d.). Furthermore, quality of care for individuals with T2DM focuses on targeted areas such as medication adherence, diet, exercise, self-monitoring practices, and access to health care services (Ricci-Cabello et al., 2013).

Assumptions

I identified 4 assumptions in this study. First, I assumed that a case study method would be the most suitable choice for this study. Second, I assumed that it would be appropriate to conduct interviews using open-ended questions and that such interviews

would provide valuable information. Third, I assumed that the participants were knowledgeable about the phenomenon under study and would voluntarily provide rich, in-depth information to incorporate into the study (Creswell, 2014; Patton, 2002). Finally, I assumed that this study would contribute to social change for participants, families, and communities.

Scope of the Study

I limited the scope of this study to the views and experiences of 15 adult participants diagnosed with T2DM. In this qualitative case study, I aimed to enhance the understanding of how different income levels influence the way people with T2DM in Marion County, Florida self-managed their diabetes, as well as to understand the quality of care they received. I conducted the study in Marion County, Florida and explored the quality of care received by adults with T2DM. I used purposeful sampling, face-to-face and telephone interviews, and open-ended questions to collect the data. The participants consisted of a diverse population of males and females aged 45 years and older who had resided in Marion County, Florida for more than 1 year. The participants had also had T2DM for more than 1 year and had no complications from the disease. The participants read, write, and understood English and participated in the study voluntarily. I developed this case study after learning about the high incidence of T2DM among adults in the United States. I explored the opinions of adults in Marion County with T2DM about the management of their illness from an income perspective and self-management of their disease.

Delimitations of the Study

Delimitations in the study included boundaries that indicated the narrowing of the research problem. T2DM is a common public health concern and is more prevalent in adults (Kirkman et al., 2012). Several researchers have examined various elements of diabetes care including nutrition, exercise, and spirituality (Abolghasem & Sedaghat, 2015); however, I found no literature that described the quality of care for people with T2DM based on their income levels. I specifically examined the levels of attentive care received by persons with T2DM in Marion County, Florida from different income levels. Although the CDC (2014a) reported an increase in the prevalence of T2DM among young adults and children, the prevalence of the disease has remained highest among adults (Kirkman et al., 2012). Due to this high prevalence of T2DM among adults, I was able to recruit a suitable number of participants aged 45 years and older for the study. I included participants who had had T2DM for more than 1 year, because they had more experience with the disease process and were better able to share their experiences. In addition, I included persons with T2DM who had lived in Marion County for more than 1 year, as they were able to provide pertinent information regarding available resources, access to health care, and their self-management practices. The participants were diverse, willing to participate in the study, and understood the English language. Because of this diverse participant pool, I was able to obtain valuable information from different perspectives. Since I speak English language only, I ensured that all the participants could read, write, and speak English.

Limitations

I identified several limitations in this study. First, as discussed, the participants needed to be able to read and write English. Second, I limited the study to participants living in Marion County, rather than including neighboring Sumter County, Citrus County, and Alachua County. Third, I specified that participants needed to have lived in Marion County for at least 1 year. This criterion may have disqualified individuals who had moved into Marion County more recently than I year.

Significance

The significance of this qualitative case study was to bring to the forefront a comprehensive view of adults with T2DM in Marion County, Florida, focusing on their opinions regarding their experiences of diabetes care and self-management based on different income levels. The results of this qualitative study could be used to fill the literature gap regarding patients' perceptions of quality of care at different income levels. In this study, I focused on self-care and management of T2DM among adult individuals; therefore, information obtained in this study could be used to increase understanding of the experiences of this population in Marion County, Florida. Gaining such an understanding may prompt health care providers, diabetes educators, policy makers, and community health leaders to implement evidence-based policies and program interventions to accommodate the needs of adults with T2DM in Marion County.

The positive social change implications of this study included increased understanding of the care and self-management of T2DM among adults in Marion County, Florida. By using this knowledge, lawmakers may be able to create new policies,

implement effective intervention programs, and increase the allocation of resources for those living with the T2DM. The findings from this qualitative case study may also be used to enhance positive social change by improving health care access and promoting better health outcomes among adults with T2DM in Marion County, Florida. Furthermore, individuals with T2DM may be able to use the results from this study to improve their self-efficacy and engage in more effective self-management programs.

Summary

Diabetes poses a major health concern and represents a significant cause of increased morbidity and mortality in the United States (Menke et al., 2015). Diabetes occurs as a result of the body's inability to produce enough insulin or to effectively use the insulin produced, and it is the seventh leading cause of death in the United States (CDC, 2014a). T2DM affects an increasing number of adults and can be complicated by coexisting chronic conditions (Munshi et al., 2013) such as obesity and hypertension (CDC, 2014a).

In Chapter 1, I described several segments of the study including the research questions, the problem statement, the nature of the study, and the significance of the study. In this qualitative case study, I aimed to gain an understanding how adults with T2DM manage their disease and how their income affects the quality of care they receive. Based on nature of the study, I used perceived self-efficacy from the HBM to build the conceptual foundation. According to Bandura (1994), perceived self-efficacy is the way people perceive themselves, and their beliefs about their capabilities to perform activities that affect their lives.

In Chapter 2, I focus on the literature search that I conducted to gain insight into relevant information for the study. I discuss the literature search strategy, theoretical foundation, and an extensive literature review. Finally, I provide a description of the research gap that I identified, as well as a summary of the research summary.

Chapter 2: Literature Review

Introduction

DM poses a global public health problem (Huckfeldt et al., 2012; Meetoo, 2014; Szabo et al. 2015), and there has been a steady increase in the prevalence of the disease worldwide (Meetoo, 2014; Olokoba et al., 2012). Most of the worldwide growth in diabetes cases occurred in countries and areas where people are between 45 and 64 years of age (Olokoba et al., 2012). The risk of DM and its complications stirred a growing concern for the aging U.S. population (ADA, 2015; Fisher-Hock, Vatcheva, Rahbar, & McCormic, 2015). In this qualitative exploratory multiple case study, I explored the individual experiences of persons with T2DM living in Marion County, Florida, specifically how they managed their disease from an income perspective and what their experiences are with quality of care at their different income levels.

Various researchers have examined the significant cost of DM care for adult individuals in the United States (Candrilli, Meyers, Boye, & Baye, 2014). DM accounts for 11% of overall health care costs in the United States (Brown, Wilson, Pagan, Arcari, & Martinez, 2012). In 2012, the estimated cost of diabetes care in the United States was $245 billion, a 41% increase from 2007 (ADA, 2012; CDC, 2014a; Clarke & Utz, 2014). Direct medical expenditure attributed to diabetes was $176 billion, while indirect costs, including disability, work loss, and premature death, reached $69 billion (CDC, 2014a). In Florida in 2014, the National Institute of Diabetes and Digestive and Kidney Disease (NIDDKD) allotted $82,735,168 to diabetes research, while the CDC invested $1,116,458 in diabetes prevention education (ADA, 2015).

Adults are at increased risk of developing chronic diseases, including DM (Healthy People 2020, 2014a). According to the ADA (2012) and the CDC (2012), 1 in every 3 individuals will develop diabetes by the year 2050. DM affects individuals, families, industries, communities, and overall productivity (Comino et al., 2015) and requires targeted intervention to prevent and manage the disease and its accompanying complications (Hill, Nielsen, & Fox, 2013). To better understand and treat the disease, Agardh, Allbeck, Hallqvist, Moradi, and Sidorchuk (2011) posited that it is crucial to investigate the pattern of the illness through socioeconomic positions, including education, occupation, and income. Fisher-Hock et al. (2015) noted that it is important to investigate the influence of income status (low-income, middle-income, and high-income) on the care and management of adults with the disease.

DM is life-threatening. The associated complications, high mortality rate, and high human and economic cost affected health care industries around the world, with a significant impact on the U.S. health care system (Beckles, Zhu, & Moonesinghe, 2011). Although diabetes poses a public health concern, from a system perspective, there are also nonmedical, social, and environmental challenges involved (Hill et al., 2013). Kazemi-Galougahi et al. (2012) found a direct correlation between family income levels and diabetes incidence and care. However, in a recent literature search, I did not find any significant results regarding the quality of care for adult diabetic patients from a comparative income perspective.

In the following section, I discussed my literature search strategy and provided a description of the databases and search engines I used, as well as the search terms and

publication dates and types. I also described the theoretical foundation I used, which included the holistic medical model, as well as my rationale for adopting the HBM for this study. I also presented a discussion of the chronic disease model and of the conceptual framework that dictated several perspectives of the quality of care for adult individuals with T2DM in Marion County, Florida. Finally, I provided an extensive review of the literature regarding relevant areas of diabetes research.

Literature Search Strategy

I used peer-reviewed literature from various sources for this study. I relied mainly on the Walden University Library and the Elton B. Stephens Company (EBSCO host) search engine. The databases that I searched included the Psych INFO, CINAHL, and MEDLINE. I used the EBSCO host to access a broad range of full texts and bibliographic databases specific to my research purpose and to bridge the gap between search engines. Also, I accessed and enabled database searches using the PUBMED search engine. I used the Science Direct websites operated by Elsevier, Google Scholar, and other websites to access scholarly academic journal articles. I used multiple government agencies websites, including the CDC, Healthy People 2020, ADA, American Medical Association (AMA), National Institute of Health (NIH), and the WHO. I also accessed SAGE Journal articles. I narrowed the literature search by using keywords to locate pertinent literature for this study; the keywords I used included *diabetes, income, prevalence, comorbidities, complications, social support, self-management,* and *self-efficacy*. I tried to collect articles that were published in the last 5 years; however, I found it necessary to obtain older items for historical reasons and to make comparisons.

Theoretical Foundation

Traditional reductionist medical management treats individuals and their social contexts as separate entities; the holistic medical model, on the other hand, includes mind, body, and spirit (Patterson, 1998). I therefore found it plausible to employ the holistic medical model to build the theoretical aspect of this study. Within the context of family, culture, and ecology, the holistic approach involves multiple individualistic interventions (Patterson, 1998) while maintaining close harmonization with health care (Rigby, Hill, Koch, & Keeling, 2011). Ahn, Tewari, Poon, and Phillips (2006) stated that the creation of the holistic approach altered the perspective of the traditional reductionist model of disease management by allowing health care professionals to treat the individual as a whole. There is a disconnection between the traditional reductionist model of disease management and the holistic medical model (Ahn et al., 2006; Sydney Holistic Dental Center, 2015). The disconnection is rooted in the different assumptions of both models (Ahn et al., 2006; Sydney Holistic Dental Center, 2015). The principles of the holistic medical model aligned with the views of Rigby et al. (2011), who assessed the model's effectiveness by treating the patient's illness and social context as a whole. Rigby et al. further noted that traditional medical management neglected the complex interplay between disease and treatment by addressing each problem individually. The holistic model appeared to be best suited for the care of individuals with T2DM due to the disease's multiple accompanying complications and its social and economic developments. For example, Patterson found that users of the holistic approach acknowledged the change in different aspects of individual patients' lives and

environments and implemented care to self-renew, self-transcend, and move forward toward better health outcomes.

Conceptual Framework

Nonadherence and inadequate adherence to treatment therapy remain perhaps the most devastating obstacles to achieving positive health outcomes among individuals with T2DM (Blackburn, Swidrovich, & Lemstra, 2013; Janz & Becker, 1984). According to the HBM successful DM management required a belief and an understanding to motivate or prevent health behaviors (Hallgren, McElfish, & Rubon-Chutaro, 2014). While there exist significant barriers to the improvement of care among adults with DM, there also exist opportunities to implement new management interventions Hallgren et al., (2014) to promote better health outcome. DM affects individuals' mind and body and interferes with personal and social functioning (Kazemi-Galougahi et al., 2012). The underlying concept of HBM indicated that health behavior remained consistent with the patient's personal belief about or perception of the disease (Hallgren et al., 2014). For example, individuals who adopt healthy lifestyles and adhere to management plans for weight loss can delay or prevent the onset of T2DM. The HBM consists of several constructs to understand why people fail to adopt strategies to prevent diseases or to comply with necessary screening tests for the early detection and treatment of illnesses (Janz & Becker, 1994). Considering the constructs of this model, I determined that perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cues to action, and self-efficacy were the factors best suited to be employed in this study (Janz & Becker, 1994). However self-efficacy will represent the common focus of this study.

HBM Perceived Barriers

There has been a global increase in lifestyle-related health problem, which has triggered a shift from reactive behaviors to proactive ones (Orji, Vassileva, & Mandryk, 2012). My rationale for employing the HBM allowed me to understand how perceived barriers impede health behaviors. For example, people with diabetes experience medical expenditures up to 3 times higher than individuals without diabetes (ADA, 2013b); and may find it more challenging to adhere to recommended management plans. An analysis of the HBM indicated that when a person takes a positive attitude towards a recommended health action, they avoid an adverse health outcome (Janz & Becker, 1984). For example, obesity constitutes a predominant risk factor for diabetes; in a research study conducted in Pennsylvania, Garcia-Dominic et al. (2014) found the prevalence of obesity increased from 1.5% in 1995 to 29.0% in 2010. They also found a significant increase in the incidence of diabetes, from 5.6% in 1995 to 10.6% in 2010 (Garcia-Dominic et al., 2014). The HBM involves guidelines to understand individuals' adherence and nonadherence to health practices (Janz & Becker, 1984; Orji et al., 2012). Based on the integrity of the model, adults with T2DM appear to be at risk for perceived barriers to health care and may lack the self-efficacy or confidence needed to act to improve health behavior practices (Janz & Becker, 1984).

Life Course Approach

Individuals' perspectives on life and health outcomes can play an important role in setting and achieving goals. Older adults have a long lifespan; this long lifespan guides the life course approach model to account for life's trajectories and changes as time goes

by (Niedzwiedz, Katikireddi, Pell & Mitchell, 2012). The dynamics of goal pursuit and goal achievement can help individuals achieve a stable pursuit of goals while adjusting to events that may affect the attainability of those goals (Brandtstädter & Rothermund, 2002). The life course approach model is used to explore issues and to address challenges that may arise among adults with diabetes (WHO, 2000). Kuth, Karunananthan, Bergman, and Cooper (2014) stated that, throughout the course of an individual's life, social and biological factors from earlier in life can affect health. For instance, the high prevalence of DM among adults, along with a high rate of poor glycemic control, reflect a sedentary lifestyle (overweight and cigarette smoking; Selvin, Coresh, & Brancati, 2006). There is relationship between overweight or obesity and diabetes which has not been clearly defined. However, this relationship requires multifaceted interventions incorporated into an individual's socioeconomic context to promote health literacy (Hanson, Gluckman, Ma, Matzen, & Biesma, 2012).

Literature Review Related to Key Concepts

In the following section, I presented an extensive literature review that served as the background and foundation for the study. I used an integrated analysis of theory and recent research to build the basis for this section. The content included an overview of diabetes, diabetes prevalence, comorbidities, complications, risk factors, and self-care-management. I also discussed recent studies on the association between levels of income and diabetes care, as well as the social support, cultural beliefs, and practices of adults with T2DM. Finally, I discussed the gap in research and presented a summary and conclusion.

Overview of the Meaning and Etiology of T2DM

DM is a metabolic disease characterized by high blood glucose level (ADA, 2014; CDC, 2012). Diabetes occurs when the body cannot produce or use insulin effectively (ADA, 2014; Atkins et al., 2004). A combination of factors contribute to diabetes, including genetic factors and sedentary lifestyles (Brill, 2008). The exponential effects of diabetes and its related complications have a far-reaching impact on health care and lead to increased mortality (Baumann, Schroder, & Fink, 2015). Diabetes is the seventh leading cause of death in the United States (ADA, 2014; CDC, 2014a) and is classified according to the specific cause of the disease (Atkins et al., 2004; Brill, 2008). Atkins et al., (2004) and the CDC (2012) noted 3 main classification types of diabetes. T1DM usually presents in childhood (ADA, 2016; Brill, 2008). Five percent of diagnosed diabetes falls into the T1DM category (ADA, 2014; CDC, 2012). T1DM occurs as a result of the inability of the beta cells in the pancreas to produce insulin (ADA, 2016; Atkins et al., 2004). Individuals with T1DM will need life-long insulin administration and proper management strategies to control the disease and prevent complications (Atkins et al., 2004).

T2DM occurs when the cells in the body respond slowly to the release of insulin (Atkins et al., 2004); T2DM account for 95% of diagnosed diabetes in adults (ADA, 2014; CDC, 2012). In patients with T2DM, the pancreas continues to produce insulin, but the body's muscles and fat cells do not recognize the insulin produced (Atkins et al., 2004; Brill, 2008). Like T1DM, T2DM can result in multiple complications and requires quality care to control blood sugar levels, improve diabetes management, and decrease

episodic complications (Atkins et al., 2004; Brill, 2008). Gestational diabetes is pregnancy-related (CDC, 2012) and occurs during the later months of pregnancy (ADA, 2016; Atkins et al., 2004; Dall et al., 2014). In patients with gestational diabetes, the placenta produces a hormone that causes the body's cells to reject insulin (Atkins et al., 2004). The developing placenta then produces more hormones, which causes increased resistance by the cells (Atkins et al., 2004). Gestational diabetes usually subsides at the end of pregnancy and is considered hereditary (Atkins et al., 2004). However, according to the CDC (2012) individuals with gestational diabetes have a 35% to 60% chance of developing T2DM.

The etiologic classification of diabetes includes (a) genetic defects in β cell function, (b) genetic defects in insulin action, (c) disease of the endocrine pancreas, (d) drug- or chemical-induced, (e) infections, and (f) immune-mediated conditions (CDC, 2012). Due to the chronic nature of diabetes, individuals with diabetes can develop hyperglycemia, body dysfunction, multi-organ failure, eye disease, kidney disease, heart disease, and nerve and blood vessel damage (ADA, 2014). The multiple causes of hyperglycemia include complex genetic susceptibility, obesity and physical inactivity, insulin resistance, abnormal insulin production by the liver, metabolic syndrome, and beta cells dysfunction (NIDDKD, 2014). Even though there are 3 types of diabetes, all 3 types of diabetes (T1DM, T2DM, and gestational DM) are characterized by the standard feature of high blood glucose levels (Fonesca et al., 2012. I focused on T2DM in this study.

Prevalence of T2DM

Researchers found an increased incidence of DM among adults in the United States (Garcia-Dominic et al., 2014; Menke et al., 2015; Weinger, Beverly, & Smaldone, 2014). DM presents a significant public health problem and a grave concern for the U.S. health care industry (Menke et al., 2015). DM is one of the leading causes of morbidity and mortality and costs an estimated $245 billion in health care expenditure (CDC, 2014a; Menke et al., 2015). Researchers found that aging populations are associated with the worldwide epidemic of chronic diseases (Prince et al., 2015; Whiting, Guariguata, Weil, & Shaw, 2011). In the United States, diabetes prevalence plateaued between 2008 and 2012, following an increase from 3.5% in 1990 to 7.9% in 2008 (Menke et al., 2015). Approximately 29.1 million individuals were diagnosed with diabetes in 2014, an increase from 5.5 million in 1980 (CDC, 2015). Researchers have projected that approximately 21% of the U.S. adult population will have DM by the year 2050 (Kirtland, Zack, & Caspersen, 2012).

Risk Factors Associated with T2DM

According to the CDC (2015) the associated risks for developing diabetes involve older age, obesity, hereditary, history of gestational diabetes, impaired glucose metabolism, physical inactivity, race, ethnicity, and high blood pressure. Some of these risk factors are inevitable, while others are controllable (Brill, 2008). For example, family history, age, ethnicity, and history of gestational diabetes are unavoidable, while obesity and sedentary lifestyles are controllable (Brill, 2008). The American Heart Association (2017) stated that blood pressure higher than 140/90 is above the normal average; more

specifically, a systolic pressure (top number) of 140 and above and a diastolic pressure (bottom number) of 90 and above is considered high blood pressure (hypertension). The correlation between diabetes and high blood pressure has not been defined; however, researchers found that reducing blood pressure can help lower the risk of cardiovascular disease (Evert et al., 2014). Lifestyle behaviors and factors such as cigarette smoking and alcohol consumption can trigger the risk of developing diabetes (Menke et al., 2015) and constitute barriers between poor glycemic control and diabetes management.

Complications and Comorbidities

The coexisting conditions of T2DM can cause many long-term, severe complications, including heart disease and stroke resulting from a lack of blood supply to areas of the brain (ischemic stroke Asif, 2014; CDC, 2015). Other complications include retinopathy, blindness and other eye problems, kidney disease, amputations, hypoglycemia, and hyperglycemia (CDC, 2014a). In addition, researchers have also found that nerve disease, nonalcoholic liver disease, periodontal (gum) disease, hearing loss, erectile dysfunction, depression, and pregnancy complications are also associated with T2DM (ADA, 2014; CDC, 2014a). Foot and leg amputation are among the most devastating complications of T2DM (ADA, 2013a; Mayo Clinic, 2015).

DM forms a group of metabolic diseases characterized by high blood glucose levels (Dall et al., 2014). DM occurs when the body does not produce or use insulin efficiently (Asif, 2014; Healthy People 2020, 2012; Shrivastava et al., 2013). Older adults (> 65 years) are at high risk of developing T2DM (Healthy People 2020, 2012; Kirtland et al., 2012; Selvin et al., 2014). The devastating long-term complications of T2DM

require sustained management efforts to improve the quality of life of individuals diagnosed with the disease (Fisher-Hock et al., 2015). Complications from T2DM can affect many parts of the body (CDC, 2014a). High blood pressure and high blood LDL cholesterol constitute two preexisting conditions associated with the diagnosis of T2DM (CDC, 2014a). These complications, as well as the aggravated comorbidities of diabetes, such as depression and obesity or overweight, and low socioeconomic factors associated with the disease have created a severe economic burden on the U.S. health care industry. Individuals can delay or prevent the complications of T2DM with early detection and effective management, lifestyle, and treatment therapy (Sherwin & Jastreboff, 2012). According to the WHO (2000), a practical management lifestyle include a healthy diet, daily physical activity, maintenance of an appropriate weight, and avoidance of smoking.

Researchers have indicated that with the implementation of evidence-based guidelines to manage DM, people can reduce the risk of complications from the disease (Bell et al., 2005). Further, Beckles et al., (2011) noted a decrease in diabetes risks when interventions increased among individuals with T2DM. Brown et al. (2012) documented a 1% decrease in hemoglobin A1C levels, which correlates with a 21% decrease in vascular complications, resulting in an overall decline in the risk of limb amputation. The effect of DM on individuals' bodies, minds, and social functioning makes it necessary for health care providers and policy makers to understand the quality of life and care for individuals with T2DM (Kazemi-Galougahi et al., 2012).

Management of T2DM

Diabetes is a devastating disease that requires a comprehensive management approach (Arredondo & Reyes, 2013; WHO, 2000). However, health care providers can challenge the continued health care needs of adult diabetic individuals (Shrivastava et al., 2013). Furthermore, people with DM often find it challenging to manage the disease. The advancing age and changes in health status of adults with T2DM set the criteria for appropriate treatment goals and plans to improve glycemic control and to reduce the number of diabetes-related complications (Wallace, 1999). Researchers consider diabetes to be controlled when blood glucose levels are consistently or frequently between 80 -130 (ADA, 2015), when HgA1c is ≤7 % (Huckfeldt et al., 2012), and when low-density lipoprotein is <100 milligrams per deciliter (ADA, 2012). Quite often, people with diabetes experience out-of-control blood glucose levels (either too high or too low); however, with appropriate management strategies, such as diet, exercise, weight loss, medication therapy, and frequent blood glucose monitoring, they can correct abnormal blood glucose levels (Brill, 2008). Currently, there is no cure for T2DM but patients can combine conventional treatment therapies and behavioral modifications to manage the condition (Hill et al., 2013). Behavioral modifications include dietary improvements, increased physical activity, and increased self-care compliance with the DM management plan. With nearly 2 million new cases of T2DM being diagnosed annually, DM poses a soaring public health challenge and requires a comprehensive, systemic patient-level response toward the management of the disease (Atkins et al., 2004; Hill et al., 2013).

Diabetes Care Measures and Self-Care Management

DM care measures include monitoring glycated hemoglobin tests (HgbA1C), ophthalmology examinations and, lipid measurements (McCall et al., 2004). Since the 1970s, HgbA1C has been used as an index of glycemic control (Brick & Saudek, 2009). HgbA1C is crucial in tracking blood glucose over time and has become referred to as the memory test (Atkins et al., 2004; Florkowski, 2013). The HgbA1C test monitors the amount of sugar bound to a hemoglobin molecule over a 3-month period (Atkins et al., 2004; Huckfeldt et al., 2012). ADA (2015) noted that an HgbA1C level of ≤7% is considered a therapeutic level, while Brick and Saudek (2009) and Moghissi (2013) suggested that an HgbA1C of 6.5% -7% is within normal range. Although glucose self-monitoring is critical to the control of DM, only a small percentage of individuals with diabetes (39%) self-monitor their blood glucose daily or consistently (CDC, 2015). DM sometimes affects eyes and vision (Ofori & Unachukwu, 2014 If not corrected, abnormal lipids can cause severe cardiovascular effects (World Heart Federation [WHF], 2016). Regular blood tests help monitor the level of cholesterol in the blood.

Medication Management

The discovery of insulin in the 1920s brought about a significant breakthrough in the treatment of DM (National Service Framework for Diabetes: Standards [NSF], 2001). Although the majority of adults with T2DM manage their disease with oral hypoglycemic agents, a small percentage rely on insulin therapy to stabilize blood glucose. Inadequate use of prescribed medication can hinder the progress of stabilization and prevent positive health outcomes in adults with chronic diseases (Ryan, Fedders, Jennings, Vittoria, &

Yanes, 2014). Insulin has no maximum dose and can be very useful in glycemic control in individuals with T2DM (Nathan et al., 2008). However, a growing number of researchers have found that strict blood sugar control may not always constitute the appropriate treatment goal for adults with T2DM (Swinnen, Mullins, Miller, Hoekstra, & Holleman, 2009; Turner, Cull, Frighi, & Holman, 2012; Wallace, 1999). However, ADA (2015) and Wallace (1999) suggested that, in addition to diabetes management, aggressive management of risk factors could benefit adults with T2DM. Researchers have found that daily insulin therapy along with oral hyperglycemic agents yielded the expected benefit of increased glycemic control, fewer hypoglycemic episodes, and decreased weight gain (Ryan et al., 2014; Swinnen et al., 2009). However, many individuals do not adhere to pharmacotherapy and thus endure periods of hyperglycemia or hypoglycemia.

Dietary Management

Dietary styles have a profound effect on human health (Perez-Escammilla & Putnik, 2007). Healthy eating habits can contribute to blood sugar control and diabetes management in people with T2DM (Breland, McAndrew, Gross, Leventhal, & Horowitz, 2013). Individuals with diabetes and comorbid conditions tend to have differences in adherence to dietary recommendations based on their level of income (Menke et al., 2015). Researchers have found that everyday costs, transportation, communication, frustration, lack of knowledge, lack of insurance, and low income impede dietary practices among individuals with T2DM (Breland et al. 2013; Mallow, Theeke, Whetsel, & Barnes, 2013). For example, in a study conducted in East Harlem New York,

researchers found that East Harlem has a significant number of cases of obesity and diabetes, primarily due to people's inability to afford healthy food or to access stores that sell healthy foods (Breland, et al., 2013). Some individuals may not have the ability to shop or to cook healthfully and may acquire excessive weight gain as a result (Breland et al., 2013). For example, a diet consistently high in carbohydrates contributes actively to obesity and eventually to diabetes; however, Atkins et al., (2004) found that carbohydrates make up the largest segment of the diet for some individuals.

Researchers have shown that improving diabetes control can reduce complications and health care costs (Willens, Cripp, Wilson, Wolff, & Rothman, 2011). By monitoring their blood glucose, individuals can provide a guide for their treatment plans and for decisions regarding medication, diet, and exercise to eventually lessen the burden of diabetes (Brill, 2008). A blood glucose level less than or equal to 80-110 is considered within reasonable limits (Huckfeldt et al. 2012). To properly control glucose, however, individuals need antidiabetic agents that favorably address cardiovascular risk, as well as diabetes supplies and prescription medication (Stoler, 2010).

Exercise and Physical Activity

Older adults with diabetes can benefit from training programs or physical activity (Kirtland et al., 2012). Obesity is a precursor for T2DM; thus, with the current epidemic of obesity, the prevalence and cost of diabetes continue to increase (Garcia-Dominic et al., 2014). Physical inactivity constitutes a dominant risk factor for obesity and for overall poor health (Colberg et al. 2016; Perez-Escammilla & Putnik, 2007). While exercise and physical activity contribute to the control of diabetes, some older adults may be at a

disadvantage due to inactivity (Kirtland et al., 2012). Inactivity and a lack of exercise align with a sedentary lifestyle (alcohol consumption, cigarette smoking, and poor dietary practices) for some older adults, who therefore do not set or meet nutritional or physical activity goals (Colberg et al., 2016; Perez-Escammilla & Putnik, 2007). In a diabetes self-management survey of more than 2,000 adults with T2DM, Nelson, Reiber, and Boyko (2002) found that diet and exercise formed the most common barriers to self-management of the disease.

Foot Care

The amputation of lower extremities forms one of the most common complications of T2DM. By engaging in proper foot care, individuals can reduce their risk of lower extremity amputation (ADA, 2014). The ADA (2014) has provided substantial preventative measures for foot care, including a) conducting daily inspection of feet for spots, blisters, swelling, or bleeding, b) engaging in physical activity to enhance circulation (c) washing and moisturizing feet daily to keep skin clean, smooth, and soft to prevent cracking, (d) protecting feet from temperature extremes, (e) elevating feet when sitting to improve blood flow, and (f) refraining from crossing feet for extended periods when sitting. Engaging in good and consistent foot care can help individuals prevent damage to the veins in their legs and feet (peripheral neuropathy), thus preventing the devastating complication of limb amputation (Mayo Clinic, 2015; NIDDKD, 2014).

Factors Influencing Health Behavior

The CDC (2016) has researched and implemented education and behavior modification programs to ensure sustainable improvement in the quality of life of adults with diabetes. For instance, the National Diabetes Education Program focuses on decreasing the burden of diabetes on individuals and families by introducing ways to cope with the emotional impacts of individuals living with the disease (CDC, 2016). Furthermore, researchers have found evidence that self-management education influences good health behavior among individuals with diabetes (Haas et al., 2013). Although diabetes education is not guaranteed to prevent noncompliance with plan of care, Mishra, Gioia, Childress, Barnet, and Webster (2011) and Janz and Becker (1984) posited that by understanding an illness from the patient's perspective, health care providers can promote medication adherence. Good health behavior practices include diabetes self-management skills, disciplined glycemic control, prevention of complications, and improvement of clinical outcomes (Hu, Amirehsani, Wallace, & Letvak, 2013). To demonstrate proper health behavior practices, Stellefson, Dipnarine, and Stopka (2013) highlighted the importance of identifying and combining components that contribute to optimal patient care and satisfaction among adults with T2DM.

Several factors influence health behavior. For example, Hu et al. (2013) reported that low income, low education, low acculturation, language, literacy issues, different cultural beliefs and values, limited social support, and health comorbidities form barriers to effective self-management and thus negatively impact health behavior. Additionally, Janz and Becker (1984) found that within the realms of the HBM construct, perceived

seriousness engendered an individual's belief about the importance or severity of a disease. Thus, adult persons with T2DM in Marion County need to develop an in-depth understanding of the intensity of the disease process and of the importance of their management plan to improve their health behaviors and health outcomes. Janz and Becker (1984) also found that self-efficacy is a perceived barrier to understanding health behavior and health promotion. Individuals with T2DM and their families may benefit from the knowledge of the disease and may have a better approach towards diabetes self-management and adherence to a planned treatment regimen (Grzywacz et al., 2013).

Influence of Income on Diabetes Health Care

Bird, Lemstra, Rogers, & Moraros (2015) found income to be strongly and independently associated with the onset of T2DM and its accompanying complications. Rabi et al. (2006) noted that the association between income and diabetes is complicated and that low income is associated with higher prevalence of diabetes and related complications (Rabi et al. 2006). Moreover, researchers investigating T2DM frequently overlook income; this factor thus needs to be further explored and involved in public debates and policy interventions (Bird et al., 2015). About 40% of the health care costs in the United States stem from inpatient care for individuals with diabetes (Fukunaga, Uehara, & Tom, 2011). In the United States, low-income individuals struggle to meet basic needs (Ryan, Fedders, Jennings, Vittoria, & Yanes, 2014; US DOH, 2015). Researchers have also found that family income level directly relates to the level of awareness about the risk factors of T2DM (Beckles et al., 2011; Kazemi-Galougahi et al., 2012).

Diabetes takes a significant economic toll on individuals, families, health care institutions, and overall productivity. Researchers found that the behavior of persons and their environments contribute to the risk factors for diabetes (Garcia-Dominic et al., 2014). Older adults with low income, including some Medicare/Medicaid recipients, are prone to T2DM, significant morbidity, mortality, and increases in health care costs (Mcall, Sauaida, Hamman, Reusch, & Barton, 2004). These individuals require access to diabetes health care; however, few researchers have described how people with different income levels access health care in the United States (Rabi et al., 2006). Researchers found evidence that individuals with lower incomes have impaired access to care, worse health outcomes, and increased rates of acute diabetes complications (McCall et al., 2004). Further, McCall et al. (2004) found that Medicare patients who also receive Medicaid due low income often do not receive adequate health care. However, it remains unknown how other variations in income can influence access to diabetes care (Rabi et al., 2006).

Statistics on Income Levels in the United States

According to *U.S. News and World Report* (Francis, 2012), the U.S. median household income has decreased by 1.5% since 2010. According to the same source, more than 46 million (15%) working individuals in the United States receive a yearly income of $23,058 for a family of 4 (Francis, 2012). This amount of earning remains far less than the income level needed to maintain the bare essentials needed by a household (Francis, 2012). Francis (2012) also found that 2 out of 10 adult individuals in the United States struggle to get or pay for medical services and that Americans aged 65 years and

older are particularly likely to agree that the decline in household incomes affect medical care.

The U.S. middle class represents the vast majority of working-class individuals earning an annual income of $32,000-$60,000 (Francis, 2012). The upper-middle class generates an earning of > $100,000 annually, while high-income citizens make between $150,000 -$250,000 per annum (Francis, 2012). Adult individuals with diabetes may fall into any income bracket, but they all require professional medical management, self-care compliance, and adequate income to achieve glycemic control. There have been an unprecedented number of advances in recent decades in medical technologies that can provide a better quality of care for many older Americans with chronic diseases (The National Bureau of Economic Research [NBER], 2001). For example, individuals can self-monitor blood sugar levels several times daily in their homes and have the ability and knowledge to correct the hypoglycemia or hyperglycemia. However, self-monitoring of blood sugar requires money with which to purchase the needed supplies. Many individuals face lower incomes and increases in medical care expenditure (NBER, 2001). As a result, many individuals wait to fill needed prescriptions and skip doses of medication to make medications last longer (Alvarez, Dilla, Gil-Guilleen, & Orozco-Bertran, 2013).

Aging and T2DM

The effect of advancing age and changes in health status for adults with T2DM is of concern to everyone. Aging forms one of the most common factors behind the prevalence of T2DM in the United States (CDC, 2012). T2DM presents with multiple

comorbidities complications, as well as with increased mortality. In the United States, 10.1 billion adults aged 65 years and older have T2DM (Caspersen et al., 2012). Consistent with this finding, Chiniwala and Jabbour (2011) and Wallace, (1999) posited that in the United States, the prevalence of diabetes increases with age and peaks at 60 to 74 years. Older adults are prone to coexisting illnesses and more likely to take multiple medications (Ounnapiruk, Wirojratana, Meehatchai, & Turale, 2014). Ounnapiruk et al. (2014) also stated that glucose metabolism is abnormal and glucose control tends to fluctuate among older diabetic individuals. In addition, hyperglycemia develops slowly in the early phase but intensifies as the disease silently progresses in older people (ADA, 2014).

Social Support for Adults with T2DM

Individuals with T2DM need to have social support, primarily because of the devastating complications involved with the disease and the potential that they may not take the prescribed medications or comply with recommended care. Social support is a positive predictor for adherence to diabetes self-care management in areas like diet, foot care, and physical activity (Rosland et al., 2014). T2DM poses a major global public health problem (Dalsgaard, Skriver, Sandbaek, & Vestgaard, 2015). The incidence of T2DM continues to rise in the United States, driving an increase in complications and mortality (Dalsgaard et al., 2015). With the provision of optimal health care, the risk of diabetes complications can be drastically reduced (WHO, 2000).

Cultural Practices and Beliefs

Culture plays an important role in the prevention and management of diabetes. In some instances, religion presents a barrier to health care delivery. Both diabetes prevention and diabetes control require the active involvement of individuals and families to engage in healthy habits, including diet, exercise (Heisler, 2007). Ethnic diversity also continues to increase in the United States. America is one of the most culturally diverse countries in the world (Zimmerman, 2015), and more than 13% of the population of the United States was born outside of the country (World Bank, 2014). In addition, 26.4% of the U.S. population is between 45 and 64 years old (World Bank, 2014). Adults aged 45 years and older with distinct cultural practices are at risk for poor compliance with diabetes treatment regimens, poor glycemic control, diabetes complications, and poor health outcomes. The United States culture encompasses religion, food, language, marriage, and belief (Zimmerman, 2015) and plays a role in the ethnic disparities seen in diabetes care and complications (Grzywacz et al., 2013).

According to Heisler (2007), the increase in ethnic diversity in the United States has created a challenge for health care providers in diabetes prevention and the improvement of diabetes outcomes. In a recent study of Chinese-American individuals' belief in treatment for T2DM, Kwan, Chun, Huang, and Chesla (2013) found that Chinese medicine is widely used to treat diabetes and other diseases. The researchers used semi-structured interviews to examine the use of Chinese medicine for the treatment of T2DM and noted that there exists a preference for Chinese herbal medicine as opposed to Western medicine (Kwan et al., 2013). Chinese-Americans believed that Chinese

medicine treats the underlying cause of the disease and has fewer adverse effects when compared to western medicine (Kwan et al., 2013). The combination of cultural diversity, aging populations, and increased prevalence of diabetes has triggered an incremental threat for the world health, adversely affecting the U.S. health care industry and health care industries worldwide (Tol, Sharifirad, Shojaezadeh, Tavasoli, & Azadbakht, 2013). Understanding cultural beliefs and dynamics is thus crucial to the management of T2DM. DM symptoms can pose cultural and family challenges to disease management, alter family harmony, affect dietary beliefs and practices, and increase family role responsibilities (Agency for Healthcare Research and Quality [AHRQ], 2012; Chesla, Chun, & Kwan, 2009).

Socioeconomic Factors

Socioeconomic status can be a determinants of health and has been recognized for its relationship with the increased incidence of T2DM in the United States (Clarke & Utz, 2014; Hill et al., 2013; Rabi et al., 2006). Examples of socioeconomic factors that contribute to the rise in T2DM include education level, employment, family income, healthy food, neighborhood safety, transportation, and access to health care (Clarke & Utz, 2014). Individuals are born, grow up, live, work, and age within the realms of their social determinant factors (Hill et al., 2013). Researchers have posited a direct relationship between socioeconomic factors and health outcomes (Clarke & Utz, 2014). Recent health reform efforts include opportunities for improved and coordinated medical care for many segments of the U.S. population at risk of developing chronic diseases (Hill et al., 2013). To support the potential for better health outcomes, the Affordable

Care Act of 2010 reduced cost as a barrier to care by expanding access to health plans without copayments or deductibles (CDC, 2014b). This gesture was intended to create an open avenue for access to health care among socioeconomically disadvantaged individuals with chronic diseases, such as diabetes. Socioeconomic conditions can change diabetes outcome and play a role a higher prevalence of diabetes and diabetes-related complications among certain populations (Clarke & Utz, 2014).

Summary and Conclusions

Diabetes is an urgent international health concern and impacts both health and economic resources (ADA, 2013). The incidence of T2DM has increased among adults in the United States (CDC, 2012, 2014a). The staggering increase in obesity in the United States in recent years has contributed heavily to this increasing prevalence of diabetes (Selvin et al., 2014). Diabetes presents with increased or decreased blood glucose levels and with HbA1c levels of >7 (ADA, 2014). Diabetes self-management plays an integral part in the obtaining and maintaining good glycemic control. By monitoring HbA1C and blood glucose levels, individuals with diabetes can engage in good glycemic control (CDC, 2016; Dall et al., 2014). Due to rapidly aging populations, increased incidence of obesity, and sedentary lifestyles, the impact of diabetes continues and has produced a worrisome fiscal crisis for federal and state governments (McKinlay et al., 2012). The complications of diabetes include adult blindness, kidney disease, heart disease and stroke, and limb amputations (ADA, 2012). DM and its complications consume 27.6% of US Medicare annual budget (McKinlay et al., 2012).

Due to the chronic nature of the disease, individuals with DM can develop hyperglycemia, body dysfunction, multi-organ failure, eye disease, kidney disease, heart disease, and nerve and blood vessel damage (ADA, 2014). DM is the seventh leading cause of death in the United States and poses a considerable health and economic burden to society (CDC 2014a). Although income plays a vital role in the management of diabetes, it remains unclear how individuals at different income levels manage their diabetes. To effectively self-manage diabetes and prevent complications, individuals need access to medical care, glucometers, test strips, prescribed medications, and transportation. Thus, researchers and policy makers could further explore how adults with T2DM self-manage their diabetes and the quality of care they receive based on their different income levels.

In Chapter 3, I addressed the methodology used for this research, including the instrument used for the study, the study population, the sites used to conduct the investigation, and the sampling methods. In addition, I addressed ethical concerns and trustworthiness and provided a summary.

Chapter 3: Research Method

Introduction

In this qualitative case study, I aimed to understand the experiences that adults with T2DM in Marion County, Florida have had in managing their disease and how finance influenced their ability to control their disease and their care. DM is a chronic metabolic disease affecting more than 29 million people in the United States and poses a public health problem globally (CDC, 2014a; Munshi et al., 2013). There exists a lack of research investigating the impact of income on the management of diabetes and on unmet treatment goals, creating a gap in the care of adult diabetic individuals in Marion County, Florida. It also remains unknown whether a holistic approach could be used to investigate how people participate in the management of their diabetes. Researchers have determined that patients with diabetes face challenges in adhering to self-care management; this management includes weight loss, increased physical activity, healthy diet, foot care, glucose monitoring, and adherence to medical treatment plans (Beverly et al., 2012). In this study, I included various elements of diabetes management, including self-management social support and self-efficacy. I explored the influence of income on diabetes care and self-management based on the perspective and opinions of adults with diabetes in Marion County, Florida with regards to their different income levels.

In this chapter, I discussed the research methodology, along with a description of the research design and rationale. I also outlined the sample size and its justification, as well as my criteria for selecting participants. I presented the recruitment and data

collection process, as well as a full description of the instrumentation, the analysis process, and the manual coding option I used.

Research Design and Rationale

In this section, I highlight the research design used for the study and the rationale for its choice. In a research study, the overarching research questions and subquestions drive the methodology (Creswell, 2013). As a result, to aid in a better explanation and justification for the choice of a case study as the method of inquiry, I generated 3 research questions.

RQ 1: What are the experiences of adults with T2DM living in Marion County, Florida with the quality of health care provided and how does it affect their self-management of their disease?

RQ 2: What are the experiences of adults with T2DM in different income brackets living in Marion County, Florida with access to and quality of care?

RQ 3: What is the perceived self-efficacy for adults with T2DM in Marion County, Florida?

Central Phenomenon

In this study, I identified the quality of care among adults with T2DM and how they self-manage their illness based on their finances. The core goal of the U.S. health care system is to provide quality health care to help people live happy and productive lives (The Commonwealth Fund, 2013; Healthy People 2020, 2013). Many states have experienced a gap in access to and quality of care between individuals with below-average income and the rest of society (The Commonwealth Fund, 2013). Researchers

have found that the state of Florida has a high prevalence of T2DM compared to some other states (Logan, Guo, Dodd, Muller, & Riley, 2013). Logan et al. (2013) concluded that the pattern of the frequency of T2DM was consistent with lower financial security among individuals in lower income geographic communities. These findings prompted me to examine the impact of different levels of income on diabetes care and self-management among adults with T2DM in Marion County, Florida.

Justification for Qualitative Case Study

In a qualitative study, researchers must be inquisitive to obtain answers to questions, examine institutional and social practices, identify barriers, and facilitate change (Starks & Trinidad, 2007). Several approaches existed that I could have used to guide this qualitative study. However, I determined that the case study approach was the most appropriate method. Case study research involves exploring a situation within a limited system dictated by time and place (Creswell, 2013). Hence, I determined that a case study was appropriate for this study, in which I sought to understand the experiences of adults in Marion County, Florida regarding the care and self-management of their diabetes within different income groups. A case study constituted a viable choice because it allowed me to explore the complex and contextual experiences of adults with T2DM in Marion County, Florida. Other models of inquiry such as ethnography, grounded theory, phenomenology, or narrative can also be applied in qualitative studies, depending on the research question(s) and the purpose of the investigation. Nevertheless, I determined that a case study approach was appropriate to answer the research questions based on the intent of this research study.

An ethnographic inquiry is concerned with the activities of a particular group of people (Creswell, 2013; Rudestam & Newton, 2015). The ethnographic researcher seeks an understanding based on cultures and beliefs within the organization (Rudestam & Newton, 2015). I did not focus on customs or ideas in this study, but rather on individuals' experiences and perceptions of diabetes care and self-management. Thus, the ethnographic approach did not align with this study. Furthermore, a case study seeks a full understanding of the situation by using multiple forms of data collection to provide rich, in-depth knowledge of the circumstance under study (Creswell, 2013; Patton, 2002).

In grounded theory, researchers investigate how social structures and processes influence things accomplished (Starks & Trinidad, 2007); grounded theory also explains a process or activity experienced by a large number of people (Creswell, 2013). Patton (2002) pointed out that "grounded theory focuses on the process of generating theory rather than a particular theoretical content" (p. 125). The grounded theory researcher develops actions or processes that occur in phases over time and seeks to develop theories or explanations for these operations (Creswell, 2013). For those reasons, I deemed that grounded theory was not an appropriate application for examining diabetes care and self-management among adults with T2DM in Marion County, Florida. Furthermore, I could not have used social structures and processes to understand the research phenomenon or to answer the research questions in this study. I decided to use the qualitative case study to explore the research problem, assess the thoughts and experiences of the participants, and gain an understanding of the meaning that participants ascribe to their different views and opinions of the phenomenon under study (Sutton & Austin, 2015).

I also determined that phenomenology would not be a suitable approach to understanding how adults in Marion County manage their diabetes and the level of care they receive based on their income. I explored each level of income and the effect on diabetes care and self-management. Yin (2009) stated that case study inquirers examine situations in a real-life setting. By so doing, they can explore and gain a deep understanding of the experiences, meanings, and perceptions of the particular phenomenon (Lee et al., 2014). Creswell (2013) also stated that case studies can be used to obtain a better understanding of a circumstance. In social science, on the other hand, researchers conduct phenomenological studies to examine participants' lived experiences of study phenomenon (Klinke et al., 2014; Lee et al., 2014). In this study, I aimed to explore the care of adults with T2DM at different income levels (low, middle, and high), extending the investigation over all 3 income brackets. Once more, although phenomenology may have seemed like a plausible approach for this study, I determined that it would not be a suitable method to follow the pattern of development in this inquiry.

Finally, in narrative research, researchers examine individuals' life events and amass stories from several sources, reiterating them in narrative form (Creswell, 2013). I determined that the narrative method of inquiry would not be an appropriate way to examine the lived experiences of individuals in the situation under study because the situation did not constitute a life story. Instead, again I believed the case study was the most appropriate method of choice to investigate the quality of care and self-management of individuals with T2DM in regards to different income levels.

Although I considered other research designs for this study, I determined that they would not have enabled me to identify the necessary insights into the income-based experiences of adults with T2DM in Marion County, Florida. I chose to use the case study inquiry to understand the explanation of the human reality of the situation under study (Rudestam & Newton, 2015). I used case study method which allowed me to examine each income bracket as a separate case.

Role of the Researcher

The qualitative researcher has been recognized as being the primary data collection instrument of the study (Pezalla, Pettigrew, & Miller-Day, 2012). Qualitative researchers collect data by interviewing participants, examining documents, and observing behaviors during interviews. According to Creswell (2013), the ethical responsibility of the researcher includes completing a self-assessment and evaluation, identifying any preconceived ideas, and interacting with relevant individuals to resolve any issues by disclosing the intent of the research. In this study, I transformed participants' lived experiences into words, put meanings to the words, and categorized them into themes (Sanjari, Bahramnezhad, Fomani, Shoghi, & Cheraghi, 2014). In addition, I reviewed the needs of the potential participants, ensured that participants were knowledgeable about the study and had voluntarily agreed to participate, and I answered questions that they had (Creswell, 2014).

Researcher Bias

Researcher bias can potentially harm a study; therefore, I was mindful of this risk. Specifically, I aimed to understand prejudice and was ready to stop treatments that

were suboptimal or potentially harmful to the study (Pannucci & Wilkins, 2011). I am a resident of Marion County and have encountered several individuals with T2DM; therefore, there existed the potential for bias due to my prior experience and affiliation with patients with T2DM. For this reason, I did not include any participants who were known personally to me. Moreover, I incorporated bracketing to filter and dismiss previous thoughts, experiences, and opinions that could affect the study. Tufford and Newman (2010) and Creswell (2013) suggested that researchers engage in the process of bracketing to decrease any personal biases. I was mindful of situations and was honest about personal perspectives, preexisting thoughts, and beliefs regarding T2DM (Starks & Trinidad, 2007). I had no prior knowledge of a research process, but I did not experience any emotional challenges that affected the study. The findings from this qualitative study stemmed from the views, opinions, and experiences of the participants and not from my prior knowledge.

Whereas quantitative research is concerned with objectivity, Sanjari et al. (2014) argued that the qualitative method is used to explain, clarify, and elaborate the meanings of human life experiences. Following that notion, I expended much time working with the data, observing participants during the interview, and taking notes. According to Pannucci and Wilkins (2011), the researcher encounters bias when there is a tendency to present prejudiced consideration of a research question. Bias may occur as a result of error introduced into a study or as a result of merely favoring one outcome over another (Pannucci & Wilkins, 2011). During the interviews, I took notes of participants'

observable expressions and movements and included these notes in the analysis of the participant data.

Methodology

In this section, I gave a brief overview of the method I used to analyze the collected data. I also identified the study population and the sample size and explained the procedure for collecting data. Finally, I highlighted the methods used to facilitate this study and the process used to gain access to the participants.

Participant Selection Logic

I chose the participants in this study based on specific attributes and firsthand experience of the situation (Creswell, 2013). The target population for this study was adults aged 45 years and older who had been diagnosed with T2DM for at least 1 year. The study's participants had no evidence of diabetes complications, had differing income brackets (low-income, middle-income, and high-income), and had resided in Marion County, Florida for at least 1 year. Additionally, the participants were cognitively and physically able to participate in the study and demonstrated a willingness to do so. I established these stringent criteria for selecting the participants to ensure that the individuals had the necessary knowledge and experience to give accurate information to the study. In qualitative research, participant selection must show congruency with the conceptual framework of the study and should include only those participants who have experienced the phenomenon (Cleary, Horsfall, & Hayter, 2014; Coates, 2011; Creswell, 2013). Furthermore, Cleary et al. (2014) proposed that participants in the qualitative study must be able to give rich, dense, focused information to support the research

question and to enable researchers to present a convincing argument about the phenomenon.

Sampling Procedure

The soundness of a qualitative study lies in the selection of information-rich cases to provide valuable information about the central purpose of the inquiry (Creswell, 2013; Patton, 2002). For instance, in this study, I selected participants who were capable of offering valuable insights and increased understanding of the study's phenomenon rather than empirical generalization (Patton, 2002). Creswell (2013) and Patton (2002) stated that information-rich participants are crucial to the success and credibility of a case study because such studies are used to explore participants' experiences of the study phenomenon. Hence, I employed a purposive sampling approach to select participants for this study. My choice of purposive sampling was justified because the study population included only those individuals who had experienced the problem in the inquiry (Cleary et al., 2014).

Researchers commonly use purposeful sampling in qualitative research to select participants and sites that can purposefully inform an understanding of the research question in the study (Creswell, 2013). In purposeful sampling, researchers establish who and what is sampled, the form of the sampling, and how many people and sites are sampled (Creswell, 2013). Purposeful sampling can involve several sampling strategies, including maximum variation sampling, critical case, theory, criterion, and convenience or snowball sampling (Creswell, 2013). In this study, I employed maximum variation, critical case, and snowball samplings to investigate the research problem. My use of the

maximum variation allowed me to select a diverse sample of individuals with T2DM to share their experiences, opinions, and perspectives regarding the quality of care and their self-management of the disease. In addition, by using the maximum variation, I ensured that each of the 3 income brackets (low-, middle-, and high-income) were represented and included in the study. Thus, the aggregated answers may give a better representation of the population and the topic (Patton, 2002). I used snowball sampling as a strategy to recruit information-rich participants for the study (Patton, 2002). The snowball sampling method allowed individuals to recommend interested participants for the study (Creswell, 2013; Patton, 2002).

Sample Size

The sample size is crucial to the sampling strategy used for data collection (Creswell, 2013). In case studies, researchers portray a narrow range of sampling strategies and seek to recruit participants with shared knowledge and experience of the study phenomenon (Creswell, 2013, 2014). Determining the appropriate sample size for the study design was one of the most critical aspects of the sampling strategy used in this study (Creswell, 2013). Mahon and Taylor-Powell (2015) conducted a case study to examine smoke-free ordinances in restaurants in Wisconsin; the sample size for that case study was 15 participants. Quillen and Kuritzky (2015) investigated the more common challenges faced in the management of T2DM; those authors presented 5 hypothetical case studies. According to Palinkas et al. (2015) and Creswell (2013), the sample size of the study is based on the situation under investigation. In this study, I used a sample size of 15 participants to investigate the quality of care based on income level among adults

with T2DM in Marion County. I also recruited an additional 3 participants to participate in a pilot study to test the instruments before conducting the primary study.

Although the sample size is based on the problem being studied, one critical determining factor of sample size for this study was the saturation point (Abolghasem & Sedaghat, 2015). Saturation means that I continued to collect data until there was overlapping information and no new information and evidence were forth coming that could contribute to the study (Abolghasem & Sedaghat, 2015). I reached saturation with the information from 11 participants; however, I continued data collection with the remaining participants to obtain information from 5 participants in each income bracket. The intent of the study played a large role in how I chose the sample size. I believed that a sample size of 15 ($n = 15$) would be adequate to adapt the participants' views, ideas, and experiences and sufficient to establish reliability and feasibility of the study problem within the 3 income brackets.

Gaining Access to Participants

Creswell (2013) posited that researchers must identify and work with gatekeepers who may assist in identifying information-rich participants and act as the mediator between participants and researcher. I considered several methods to gain access to participants, including acquiring community partners, posting flyers, and snowball sampling. I intended to conduct this qualitative study at the Marion County Health Department or its affiliate Heart of Florida Community Center, as well as at two doctors' offices. I also contacted a home care company for partnership. However, I was not successful in engaging these entities in the inquiry. I then resorted to posting flyers

(Appendix A) in buildings like churches, group homes, apartment complexes, doctor's offices, public libraries, and the Marion County YMCA. I also gained participants through the snowball sampling method.

I contacted potential participants primarily by telephone and then by e-mail and/or postal mail. I screened participants for inclusion using a simple eligibility questionnaire (Appendix B) given in the initial phone call to potential participants. As I hold a National Institute of Health Certification #1344841 04-24-170473486 (Appendix C), I was able to schedule face-to-face interviews with the participants at a place mutually agreed upon where privacy would be maintained. Before conducting the initial face-to-face interview, I asked the participants to read and sign the informed consent, which I also explained to them in detail.

Data Collection

Data collection forms one of the most decisive aspects of qualitative research. Creswell (2013) pointed out that the data collection process involved several steps. In this study, I took an interactive approach to data collection to obtain a holistic interpretation of the situation under study (Creswell, 2013). I used flyers (Appendix A) with my contact information to recruit participants and to promote data collection. I posted these flyers with permission in buildings and offices in Marion County. I used snowball sampling as an essential part of the recruitment and data collection process.

I used several methods in the data collection process. I conducted interviews in a conducive environment where the participants felt comfortable to describe their feelings, perceptions, and experiences regarding the quality of their care and how they self-manage

their diabetes based on their income. For example, I conducted interviews in participants' homes, in a private room in a doctor's office, in a church office, and via telephone. I considered conducting interviews in a conference room in the Marion County public library, but I did not utilize this option. Participants had a choice of the venue as deemed appropriate; this choice provided an advantage to both participants and myself. Participants could choose a meaningful place that gave them privacy and more courage to describe their experiences. In this way, I was able to gather more information with which to build the data.

For this study, I conducted the data collection process. Creswell (2013) proposed that a significant characteristic of qualitative research is the ability of the inquirer to gather data from the study participant in an up-close manner. In this study, I collected data through face-to-face interviews and telephone interviews. Furthermore, I conducted the interviews in a natural, relaxed setting that allowed the study participants to focus on the issue and to freely describe their feelings, expressions, thoughts, and actions about the problem (Creswell, 2013).

Pilot Study

I also conducted a pilot study to test the data collection instruments (Appendix D) and procedures for the study before conducting the main study (Doody & Doody, 2015; Lagassea, 2013). Doody and Doody (2015) further stated that the pilot study constitutes a small-scale version of a larger study and can provide valuable information to help the researcher more proficiently conduct the larger study. Yin (2014) proposed that a pilot

study is a valuable assessment tool and can be used to develop tests or to refine research questions.

I conducted the pilot study with the first 3 participants who had gone through the same type of screening that I used for participants in the formal study. I also administered the 13-question interview protocol in the same manner and using the same language. I intended the pilot study to test the research protocol, including the data collection process, and to assess the viability of the instrument (Doody & Doody, 2015). I reported the pilot study and documented the basic research component and the viability and reason for the study (Doody & Doody, 2015); I present these results in Chapter 4.

Interviews

Interviews form prominent tools for data collection in qualitative work and can provide rich, substantive data pertinent to the study (Creswell, 2013; Janesick, 2011). Janesick (2011) described interviews as "a meeting of two persons to exchange information and ideas through questions and responses, resulting in communication and joint construction of meaning about a particular topic" (p. 100). Furthermore, Janesick proposed that interviewing can be the most rewarding component of the qualitative study. For this qualitative case study, I used face-to-face and telephone interviews as the main data collection methods. Frankfort-Nachimas and Nachimas (2008) stated that during face-to- face interviews, participants tend to respond more freely and more accurately, yielding an overall good response rate. I conducted face-to-face interviews, interacted with participants, combined situations logically at different levels, perceived situations holistically, and finally processed findings and gave comprehensive feedback in writing

(Sanjari et al., 2014). By employing this method, I obtained information regarding the opinions, perspectives, views and experiences of adult with T2DM in Marion County, Florida.

After meeting the inclusion criteria, willingly agreeing to participate in the study, and signing the informed consent, the participants were interviewed face-to-face and via telephone in a quiet, relaxing, and private environment. The single face-to-face interview process enabled me to capture nonverbal cues, to explore thoughts, ideas, and feelings, and to gain a better understanding of the phenomenon under study. Through face-to-face interviews, I was able to observe participants' reactions to the questions and clarify ambiguous statements. The interview questions represented "tools to draw out the participants to reflect on the experience and its implications for his or her life" (Rudestam & Newton, 2015, p. 127). I intended the 13-question interview guide (Appendix D) to be administered over a 45-minute period. Although telephone interviews provided a standard medium for interviews, they did not allow me to directly observe the participants. According to (Creswell, 2013), the telephone method of interview allows the interview to be conducted when a face-to-face session is not possible. Both face-to-face and telephone interviews included the use of open-ended questions. The open-ended questions played an integral part in my ability to explore the described experiences of the care and self-management of adult with DM in Marion County, Florida.

Method of Data Analysis

This section gives a brief overview of the method I used to analyze the collected data. Qualitative data requires scrupulous scrutiny to organize the material into

understandable text. The ultimate goal in analyzing qualitative data is to gain a better understanding of and provide more meaning to the quality of information provided in the data.

Data Analysis and Representation

Qualitative data collection yields a large volume of information that warrants the implementation of the data analysis. This information would be of little value to the project if not accurately and appropriately managed through a data management strategy system. I needed to understand the type of information obtained in in the data; therefore, data management was important to the research study. The data management strategies that I used in this study included developing themes, patterns, and categories. Creswell (2013) posited that several factors are involved in data analysis: preparing and organizing the data for analysis, examining the data, creating themes from the data, producing and reporting the findings, and validating the findings.

Emmel (2013) proposed that configuring collected data into understandable terms constitutes data analysis. I established themes and patterns from the data and used interpretations and representations to organize and analyze the collected data. I created specific file folders for the data to allow for easy and quick access to the information. Several themes emerged from the participants' narratives about the quality of care they received based on their income level.

In this qualitative study, I employed an open coding method as a part of the data analysis process. Open coding involved identifying specific parts of the data, naming these specific parts, and categorizing and describing the phenomenon found in the

themes. I carefully and thoroughly probed through each word, line, sentence, and paragraph to find repeated words and similarities and dissimilarities in the texts. I then used these findings to identify constructs which were grouped into themes and then into classes, patterns, and sequences. I then coded the common properties into categories and concepts. As more codes emerged, I used memoing or code notes to identify and discuss the codes. To enhance the data analysis process, I planned to use NVivo 11 to store and organize the data, as well as to identify connections and new insights. However, I intended to use NVivo only if it were absolutely necessary; in the end, I did not use NVivo 11 in the analysis of this project.

Issues of Trustworthiness

The quality of a study is upheld when there is clear evidence of trustworthiness (Shosha, 2012). Qualitative researchers examine a qualitative study for trustworthiness at every phase of development, including preparation, organization, and reporting of results (Elo et al., 2014). Credibility, dependability, confirmability, and transferability can be used to measure trustworthiness in qualitative research (Elo et al., 2014; Sosha, 2012).

Credibility

Researchers' credibility is gained through training, experience, and proper presentation of themselves and their status (Patton, 2002). I was mindful of credibility issues that could arise during the study. As is common in qualitative studies, I used triangulation in this study. Triangulation involves the use of several methods to examine the research phenomenon (Creswell, 2013; Elo et al., 2014; Houghton, Casey, Shaw, & Murphy, 2013). I employed the use of multiple data sources to provide corroborating

evidence to the study (Creswell, 2013; Elo et al., 2014). I spent approximately 45 minutes with each participant during the interview process. This study did not involve long-term follow-up or member checks. Emmel (2013) stated that member checks involve the opportunity for participants to view the final result of their interviews; however, member checks can present some sensitivity issues for participants (Emmel, 2013).

My aim was to interview a total of 15 participants for the main study. After I interviewed the 11th participant, I found overlapping information and obtained no new information and evidence that could advance or enrich the study (Abolghasem & Sedaghat, 2015). However, I continued the interview process to ensure that each income level were represented by 5 participants. My self-awareness through reflexivity also added credibility to the study (Houghton et al., 2013). Specifically, I used reflexivity to highlight my history and the personal interests, instincts, and challenges that I experienced during the research (Houghton et al., 2013).

Transferability

The process of transferability allows researchers to transfer the result of one study to another with other participants (Anney, 2014; Houghton et al., 2013). I provided details of the study which will enable others to transfer the findings of this study to other specific contexts (Houghton et al., 2013). I provided sufficiently detailed descriptions of the data to ensure the ability to transfer findings to those other studies.

Dependability

Dependability refers to findings that are generated over time and involves participants' evaluation and interpretation of those findings, as well as any

recommendations from the study (Anney, 2014). One method that can be used to establish dependability is an audit trail, which ensures that all findings, interpretations, and recommendations are supported by the data collected (Anney, 2014). An audit trail is used to track the progress of a research study (Palinkas et al., 2015) and to follow the process and steps of the research for the life of the study (Rossman & Marshall, 2010). Audit trails include the hard copies of all data, notes, audio/visual materials, and any other system used to obtain the information (Creswell, 2013; Emmel, 2013). In this qualitative case study, I used an audit trail to justify and support the interpretation of the data.

Confirmability

Confirmability constitutes an important quality issue in qualitative research. I incorporated confirmability in this study to validate one research finding with another. According to Creswell (2013), information is likely to be skewed by the researcher if the conclusion is based on one source only. Creswell further mentioned that many researchers used triangulation to provide corroborating evidence in a research study. However, for this study, I did not confirm reliability of the findings with any other data source.

Ethical Issues

Researchers can encounter ethical challenges at any stage of a research study that involves human subjects. Thus, a qualitative researcher must acknowledge any potential ethical issues, while fostering an environment of close interaction between researcher and participants (Creswell, 2013; Sanjari et al., 2014). Due to the ethically challenging nature

of the interaction between participant and researcher, ethical guidelines must be established to enhance privacy and honest and open communication and to avoid any misrepresentations or exploitation (Sanjari et al., 2014).

To avoid or overcome ethical challenges, I first secured informed consent from all study participants. I discussed the purpose of the study with participants and initiated contact with the participants. I used informed consent to obtain participants' permission to conduct the study (Creswell, 2013). Specifically, after the participants willingly agreed to take part in the study, I obtained written consent (Sanjari et al., 2014). I gave individuals a thorough understanding of the consent, including the knowledge that the study was voluntary and that participants could withdraw at any time (Creswell, 2014). To maintain ethical the rights of all participants, I kept all information collected, including demographics, secured and confidential. As a disciplined precautionary measure against ethical issues, I used the Walden University Institutional Review Board (IRB), which ensures that all research is in compliance with the university's ethical standards and also satisfies U.S. federal regulations. Before conducting the research, I was awarded IRB approval # 04-24-170473486, with an expiration date of 1 year from the issue date which is 4/23/2018.

Summary

In this chapter, I described the essential components of qualitative research methodology and exemplified justification for the inquiry. I chose the case study approach for this study after considering other methods. Holistically, a case study approach forms the most suitable vehicle with which to investigate the phenomenon of

quality of care and levels of income among adults with T2DM in Marion County, Florida. In a qualitative study, individuals give meaning to their experiences. These experiences are filtered into their perception of the phenomenon and drive their beliefs, attitudes, and behaviors (Coates, 2011). As stated earlier in this chapter, qualitative studies focus on the shared experience of individuals regarding a common phenomenon (Creswell, 2013).

As discussed, the study's population was diverse in nature. The participants lived in Marion County, Florida for at least 1 year and were 45 years or age and older. I discussed the research design and justification for using the qualitative case study approach, as well as the sampling procedures and sample size used, my methods of gaining access to participants, and my methods of data collection and analysis. Finally, I highlighted the method of data analysis and the potential ethical issues, as well as the measures that guarded against biases and adverse outcomes.

In the context of a review of the research problem and question, in Chapter 4, I discussed the pilot study, research setting, participants' demographics, and data collection. I highlighted the process employed for data analysis and discussed the evidence of trustworthiness. The chapter also included the results of the study and finally a conclusion.

Chapter 4: Results

Introduction

In this qualitative exploratory multiple case study, I aimed to investigate how adults living with T2DM in Marion County, Florida manage their disease from an income perspective, as well as their individual experiences of the quality of care received. I posted invitation flyers to recruit participants for this research project. Fifteen people with T2DM in Marion County, Florida participated in the data collection process for the study. I conducted 5 telephone interviews and 10 face-to-face interviews using open-ended questions. I developed 3 research questions to allow me to gain a better understanding of how individuals manage their diabetes and how their income levels influence the quality of care they received. The following research questions guided the study:

RQ 1: What are the experiences of adults with T2DM living in Marion County, Florida with the quality of health care provided and how does it affect their self-management of their disease?

RQ 2: What are the experiences of adults with T2DM in different income brackets living in Marion County, Florida with access to and quality of care?

RQ 3: What is the perceived self-efficacy for adults with T2DM in Marion County, Florida?

In this chapter, I provide information regarding the pilot study that preceded the main study, as well as the data collection process, data management, and data analysis.

This chapter also includes information regarding the participants' demographics, as well as the elements of trustworthiness, the results of the study, and a summary.

Pilot Study

After receiving IRB approval and being assigned an IRB number (# 04-24-17 0473486), I updated the flyers, interview protocols, and consent forms to reflect the assigned IRB number. I placed the flyers in libraries, doctors' offices, shelters, and local churches, as outlined in Chapter 3. I conducted a pilot study with the first 3 participants, whom I screened and interviewed in the same manner as the participants in the main study. Researchers have argued that a pilot study provides the ability to test the feasibility of a proposed methodology for a particular study (Whitehead, Sully, & Campbell, 2014). Other researchers have found that feasibility trials help to determine the effectiveness and appropriateness of a data collection tool and thus strengthen the foundation of the research (Learmonth & Motl, 2017). The pilot study provided insight into the use of the study methodology, the data collection protocol (Appendix D), and the data analysis method.

Participants for the pilot study met the same screening criteria as those individuals in the main study. The eligibility screening protocol (Appendix B) helped me determine which participants met the inclusion criteria to participate in the study. Each participant had to read, understand, and sign the informed consent form before being interviewed. I used probing questions to allow the participants to answer all the interview questions, providing sufficient information to confirm that the study materials were adequately developed to answer the research questions.

Research Setting

I interviewed 15 participants for the study. Ten individuals participated in face-to-face interviews; I interviewed an additional 5 via telephone. I recruited 7 participants through the posted research flyers and 5 participants through the snowballing method; I recruited the remaining 3 individuals through a doctor who is an ex coworker but not a community partner. Prior to conducting the interviews, I had the opportunity to physically visit the interview sites (Faith Outreach Ministry Church and the doctor's office). I did not need to conduct site visits for those participants who desired to be interviewed in their homes. I received an open invitation from the doctor's office staff to conduct the interviews on any weekday during office hours because this activity would not interfere with the office routine. In addition, the church was open to accommodating the interviews except on Sundays. I informed the secretary of the church ahead of time about the scheduled interviews to ensure access to the interview room.

Participants Demographics

Relevant demographic information is pertinent to the findings of a research study. Prior to the start of this study, I collected demographics on all participants, including name, age, and place of residence, household income, health insurance status, and spoken language. All 15 participants (100%) resided in the geographic study area of Marion County, Florida; ages ranged from 47 to 71 years. Nine participants (60%) were employed, 4 (27%) were retired, and 2 (13%) were self-employed. Of the 15 individuals selected for the study, 12 (80%) were women and 3 (20%) were men. Eleven (73%)

participants were African American, 3 (20%) were White, and 1 (6%) was Hispanic. Table 1 provides a summary of the individual demographics for this study.

Table 1

Demographics of Study Participants (N = 15)

Participants	Age (y)	Sex	County of Residence	Marital Status	Employment Status	Race
L-1	56	F	Marion	Separated	Self-employed	AA
M-1	70	F	Marion	Widowed	Retired	White
L-2	71	M	Marion	Divorced	Retired	AA
H-1	68	F	Marion	Widowed	Retired	AA
L-3	48	F	Marion	Single	Employed	AA
H-2	46	F	Marion	Separated	Employed	AA
L-4	49	F	Marion	Separated	Employed	White
M-2	67	F	Marion	Married	Employed	AA
M-3	64	F	Marion	Divorced	Employed	AA
H-3	66	M	Marion	Married	Employed	White
M-4	47	M	Marion	Single	Employed	AA
L-5	60	F	Marion	Married	Self-employed	AA
M-5	65	F	Marion	Married	Retired	AA
H-4	47	F	Marion	Married	Employed	AA
H-5	52	F	Marion	Single	Self-employed	H

Note. AA = African American: H = Hispanic

Data Collection

I used the data collection process outlined in Chapter 3 to complete this section of the project. The initial data collection process started with a telephone conversation between the potential participant and me. During this discussion, I completed the eligibility screening protocols, discussed the informed consent, and provided highlights of the study. Only those individuals who met the eligibility criteria participated in the study. Finally, I mailed or delivered consent forms to the eligible participants, which completed the selection process.

During the interviews, 15 participants in Marion County explained their experiences with self-management of T2DM and the care they received based on different income brackets. All participants willingly participated in the study and responded to a 13-question interview protocol (Appendix D). I conducted interviews between May 31, 2017, and July 25, 2017. The recruitment process took much longer than anticipated and therefore lengthened the data collection stage. As indicated in Chapter 3 and in my IRB application, I used face-to-face interviews as the first option to collect data from eligible participants. I used telephone interviews as the second option. By 2 weeks into the recruitment process, it became apparent that telephone interviews would be necessary to enhance recruitment and data collection. Thus, I conducted telephone interviews to satisfy the requests of eligible participants and to move forward with the data collection process.

I conducted interviews in participants' homes, a church conference room, and a private room in a doctor's office. I interviewed 6 persons in their homes at their request,

which gave the participants the opportunity to share their experiences about their self-management and care of their diabetes in a comfortable, familiar, and private environment. Participants were also able to choose the area in their home that seemed most appropriate for an interview in a private setting, as proposed in the informed consent. Thus, the respondents had total control over the venue, which augmented the data collection.

The Faith Outreach Ministry Church in Marion County accommodated 2 participant's interviews in their small private conference room. This church venue provided the privacy required for the interviews. Both participants were current members of the church and felt comfortable in the setting and had privacy during the interviews. Two interviews took place in a private room in a doctor's office complex. The room in the doctors' complex, which was separate from frequently used examination rooms, allowed for the privacy and quiet needed for the interview. This room was the ideal venue to conduct a private interview without any outside noises or disturbance of any kind.

The 5 individuals whom I interviewed by telephone received the same standard of privacy as the face-to-face interviewees. For these 5 participants, I hand-delivered 2 consent forms and sent 3 form via postal mail. I enclosed a stamped return addressed envelope for the convenience of the participant. All 3 consent forms were signed and returned before the interviews occurred. Before I started the interviews over the phone, I asked the respondents if they were in a private place or if they needed some time to get to a private area where they could answer the questions freely. Only one participant needed more time because his daughter was driving him home and therefore was not in a private

setting. I contacted him again a few hours later and proceeded with the interview once he stated that he was in a private area in his home. I provided a $15.00 gift card to all 15 participants in the main study and the 3 individuals who participated in the pilot study, to thank them for their participation in the study.

As outlined in Chapter 3, I used voice recording as an integral part of data collection during the interview phase. Each participant verbally consented to the recording of the interview and agreed again in the signed informed consent. I recorded all 15 interviews on an Olympus digital voice recorder, and I took additional notes as a back-up to ensure accuracy and completeness in the transcribed interviews.

All 15 individuals were easily accessible, willing to participate, and provided distinct information that illuminated the specific issue explored (Creswell, 2013). Creswell (2013) also mentioned challenges that can arise, such as notes having inadequate data or a researcher leaving the site prematurely or losing data. I encountered no issues during the interview process. Table 2 provides a description of the participants' eligibility criteria used for this study.

Table 2

Eligibility Criteria of Study Participants (N = 15)

Participants	Age	Income Level	Language	Insurance	Years with T2DM	Years in MC
L-1	56	Low	English	None	8	56
L-2	71	Low	English	Medicare	22	19
L-3	48	Low	English	Private	7	5
L-4	49	Low	English	Private	22	4
L-5	60	Low	English	None	4	19
M-1	70	Middle	English	Medicare	10	15
M-2	67	Middle	English	Private	25	18
M-3	64	Middle	English	Private	23	12
M-4	47	Middle	English	Private	2	3
M-5	65	Middle	English	Medicaid	20	65
H-1	68	High	English	None	10	15
H-2	46	High	English	Private	17	46
H-3	66	High	English	Private	40	4
H-4	47	High	English	Private	7	5
H-5	52	High	English	Private	5	5

Note. MC = Marion County

Participants Profiles by Case Studies per Income Levels

Low-Income: $23,000.00- $31,000.00

L-1 was a 56-year-old female who was born and raised in Marion County, Florida. L-1 had been diagnosed with T2DM 8 years prior. She is self-employed, has no health insurance, and speaks English. L-1's monthly income placed her in a low-income status. Except for episodes of hypoglycemia (low blood sugars), L-1 had no complications from the disease.

L-2 was a 71-year-old retired male who had been living in Marion County for 19 years. L-2 was diagnosed with T2DM 22 years prior and has not suffered any severe complications from the disease. L-2 is retired and has Medicare for health insurance. L-2 speaks English and is considered to be in the low-income bracket based on his total monthly and annual income.

L-3 was a 48-year-old female who has lived in Marion County, Florida for the past 5 years and was diagnosed with T2DM 7 years prior. L-3 had no major complications from diabetes. She is employed and has private insurance through her employer. L-3 reads, writes, and understands English. She supplements her income with a part-time job at a local nursing facility. With this supplemental income, she falls in the low-income bracket.

L-4 was a 49-year-old female who has lived in Marion County, Florida for the past 4 years. L-4 was diagnosed with T2DM 22 years prior and had no complications associated with the disease. She has private insurance coverage through her employer and is currently employed as a nursing assistant in a local health care facility. She reads,

writes, and understands English. L-4 is in the low-income bracket based on her calculated income.

L-5 was a 60-year-old female. She has been a resident of Marion County, Florida for the past 19 years and was diagnosed with T2DM 4 years prior. L-5 had no complications associated with T2DM and had no medical insurance coverage. She reads, writes, and speaks English fluently. She is self-employed as the owner of a family lawn mowing company. She is married, and her combined monthly household income falls within the low-income bracket.

Middle-Income: $32,000.00-$59, 000.00

M-1 was a 70-year-old retired nurse who relocated to Marion County, Florida from NY City more than 15 years ago. She is a Medicare recipient and was diagnosed with T2DM 10 years prior. She reads, writes, and speaks English. Her total monthly income is a total of retirement funds (401K), Social Security, and pension from NYC. This combined income placed her in a middle-income bracket. M-1 had not suffered any major complications from diabetes.

M-2 was a 67-year-old female who has been a resident of Marion County for more than 18 years. She was diagnosed with T2DM 25 years prior. She is currently employed and has private insurance through her employer; she is also a retired nurse who full Society Security benefits. M-2 also invested in rental properties and receives a monthly income from that source. Her combined income qualified her to be in a middle-income bracket. She is English-speaking and had no complications from diabetes.

M-3 was a 64-year-old female who is currently employed and has private insurance through her employer. M-3 was diagnosed with T2DM 23 prior but had no serious complications from the disease. She speaks, reads, and writes English well and has been a resident of Marion County, Florida for 12 years. In addition to her monthly salary, M-3 receives income from rental properties. The combined income placed her in a middle-income bracket.

M-4 is a 47-year-old male. M-4 speaks English as a second language but can read, write, and understand the English language. A native of Sierra Leon, M-4 had been living in Marion County for the past 3 years. He had been diagnosed T2DM 2 years prior and had no complications from the disease. M-4 is a sanitation worker with the City of Ocala and works part-time for himself cutting lawns. He is married and has a combined household income within the middle-income bracket.

M-5 is a 65-year-old female who was born and raised in Marion County, Florida. She was diagnosed with T2DM 20 years prior. M-5 had no severe complications from diabetes. She retired from her job as a Licensed Practical Nurse and now owns and operates a daycare in Marion County. She speaks, reads, and writes English and is in a middle-income bracket based on her combined income.

High-Income: $60,000.00 and Above

H-1 was a 68-year-old female who was diagnosed with T2DM 10 years ago. She never had any severe associated complication from the disease. She has been living in Marion County for 15 years. H-1 continues to work as a home care nurse, caring for

patients in their homes. She has a calculated income that placed her in a high-income bracket. H-1 speaks, reads, and understands English.

H-2 is a 46-year-old female who was born and raised in Marion County, Florida. She is employed at the Department of Children and Families as a case manager. She was diagnosed with T2DM almost 17 years prior and had not suffered any serious complications from the disease. H-2 is also a real estate agent, and her combined income placed her in the high-income bracket. She speaks English.

H-3 is a 66-year-old male who has been living in Marion County, Florida for the last 4 years. He was diagnosed with T2DM 40 years prior, and except for some recent neuropathy and hypoglycemic episodes, he had no severe complications from the disease. H-3 speaks English. He is retired but continues to work with the City of Ocala. H-3 receives additional income from rental properties and a 401k monthly distribution. He is retired and is a Medicare recipient.

H-4 is a resident of Marion County, Florida for the past 5 years. She was diagnosed with T2DM 7 years prior and had not suffered any complications from the disease. H-4 is an RN, is currently employed, and has private medical insurance through her employer. H-4 supplements her income with wages from a part-time job in a local health care facility and falls into the high-income level. She speaks, reads, and understands English.

H-5 is a 52-year-old female who has been living in Marion County, Florida for more than 5 years. She is self-employed and buys private health insurance. H-5 is Hispanic and speaks Spanish, but she also reads, writes, speaks, and understands English.

H-5 was diagnosed with T2DM 5 years prior and had not suffered any complications from the disease. She operates several assisted living facilities and is an active real estate agent. She has a combined income that placed her in a high-income bracket.

Data Analysis

In this section, I describe the process I used to analyze the data using open coding. I specifically discuss codes and themes from 3 case studies. The participants' interviews involved the use of an interview protocol guided by 13 open-ended questions (Appendix D). All 15 participants met the eligibility screening criteria, including one of 3 income brackets. I conducted a pilot study with 3 participants, one in each income bracket, to examine the appropriateness of the interviews and the feasibility of the intended process. I assigned participants unique codes to protect their privacy and maintain confidentiality. These assigned codes included the first letter of their income bracket and a number 1 through 5. For instance, the first participant in the low-income bracket was named L-1. I audio taped 15 interviews, with the consent of each participant.

A cross-case analysis allowed me to establish categories and patterns within the t3 income groups. After transcribing all the interviews, I examined the data using thematic analysis. According to Creswell (2013), the analysis of themes allows a researcher to gain a better understanding of the complexity of the cases, rather than generalizing beyond the case. The thematic analysis allowed me to examine the data and to carefully codify if for categories and patterns.

Evidence of Trustworthiness

Credibility

As I discussed in Chapter 3, I remained mindful of credibility issues that could evolve at any stage of the study. I took several steps to ensure that the study maintained credibility at every level. For instance, I conducted a pilot study to assess the data collection instruments and procedures to ensure appropriateness. The pilot study enabled me to ensure that the data collection tool and the data collection process collected accurate and valuable information for the main study.

Another step that I took to ensure the credibility of the study was to employ the use of triangulation. Triangulation involves corroborating evidence from several different sources to elaborate or view a theme or perspective (Creswell, 2013). I utilized notes and audio recording to gather the data in this study. Triangulation allowed me to identify consistency during the data analysis and to determine accuracy in the data.

Transferability

By providing detailed information about the study and the methodology, other researchers can confidently transfer the results to other studies (Anney, 2014). Elements of this study, when transferred to other studies, could help people with T2DM better self-manage their disease and obtain the quality of care needed regardless of their income status.

Dependability

All participants in this study had been diagnosed with T2DM more than 2 years prior to the study and thus were able to provide adequate information to enhance the

research project. I also employed an audit trail to establish dependability and to monitor the progress of each phase of the study. The audit trail also allowed me to review every step of the research and to incorporate hard copies of all data, notes, audio/visual materials, and all other systems used to obtain the information (Creswell, 2013; Emmel, 2013). I used the audit trail to justify and support the interpretation of the data in the study.

Confirmability

Confirmability constitutes an important quality issue in qualitative research. I used more than one source to collect and report the information. I audio recorded the interviews and took notes to facilitate a cross-reference for accuracy. I collected information from participants with T2DM who were willing to share their experiences with the disease and how they self-manage their illness.

Findings

In this study, I aimed to gain an understanding of how people with T2DM in Marion County, Florida self-manage their disease and experience quality of care based on their income level. The results of the study reflected the participants' responses to the 13 semi-structured, open-ended questions and to probing questions used to seek clarification. One of the significant findings that emerged from the analysis of the participants' responses was that most individuals felt that they were self-managing their diabetes appropriately. Thirteen participants (80%) reported access to medical providers and specialty services, transportation, diabetes care supplies and medication. Although cost did not evolve as a theme it is necessary to report that 2 participants (20%) in the low-

income bracket see their medical provider only when they have the money to pay out of pocket. Participants L-1 and L-5 do not receive podiatry care but they visit the eye doctor annually. The participants have access to diabetes care supplies which they purchase at Walmart at a discounted price. Codes and themes evolved from this study and detailed information is provided below. Table 3 represents the initial codes derived from the3 case studies based on the interview questions.

Table 3

Initial Codes Generated from the Three Case Studies

CS 1 low income	CS 2 Middle Income	CS 3 High Income
1a. Too much sugar in the blood	2a. Knowledge of T2DM	3a. Diet Restriction
1b. Diabetes Education	2b.Diet	3b. Medication
1c. Eye care	2c. Diabetes Education	3c. Organ dysfunction
1d. Self-manage	2d. Eye Doctor	3d. PCP educate
1e. Family and friends support	2e. Amount of sugar in the blood	3e. Good diabetes care
1f. Compliance	2f. Self-manage	3f. Eye doctor
1g. Diet	2g. Social support	3g. Average blood sugar
1h. Good care	2h. Reading Materials	3h. Self-manage
1i. Health insurance	2i. Compliance with care	3i. Family help
1j. Limitation	2j. Access to health care	3j. Compliance
1k. Self-monitor	2k. Health insurance	3k. Self-awareness
1l. Foot doctor	2l. Diet Restrictions	3l. Health care access
1m. No physical exercise	2m. Dietary Practices	3m. Diabetes control
1n. Lifestyle Changes	2n. Foot Care	3n. BS monitoring
1o. Average sugar in the blood	2o. Exercise	3o. Foot self-care
	2p. Complication prevention	3p. Exercise

After completing the initial coding, I replicated the process to combine the initial codes into categories. I grouped codes that conveyed similar meanings or messages into one category from each case study (Table 4). After establishing the categories in each case, I further exposed the data to a third iteration. Case Cross Case Analysis allowed me to further combine the groups into broader categories (Table 5). Table 6 outlines the themes in relationship to the research questions.

Table 4

Second Iteration: Codes to Categories from Each Case Study

CS 1	CS 2	CS 3
1. Blood Sugar Levels	1. Knowledge of T2DM	1. Knowledge of T2DM
2. Knowledge of T2D	2. Good Care	2. Access to care
3. Self-care management	3. Diet	3. Average blood sugar
4. Social Support	4. Education	4. Self-care management
5. Diet	5. Self-manage	5. Social Support
6. Quality Care	6. Compliance	6. Compliance
7. Compliance	7. Social Support	

Table 5

Third Iteration: Themes to Categories Case Cross Case Analysis

1. Sugar in the Blood
2. Knowledge of T2DM
3. Self-care management
4. Social Support
5. Access to provider and care
6. Diet
7. Compliance
8. Exercise
9. Self-awareness

Table 6

Research Questions in Relationship to Themes

RQ 1: What are the experiences of adults with T2DM living in Marion County, Florida with the quality of health care provided and how does it affect their self-management of their disease?
Themes: 1, 2, 3
RQ 2: What are the experiences of adults with T2DM in different income brackets living in Marion County, Florida with access to and quality of care?
Themes: 4, 5, 6,
RQ 3: What is the perceived self-efficacy for adults with T2DM in Marion County, Florida?
Themes: 5, 7, 8, 9

Theme 1: Sugar in the Blood

Sugar in the blood emerged as a prevalent theme. In response to Interview Question 1, 9 participants (60%) reported that T2DM occurs when there is too much sugar in the blood or high blood sugar; 4 members in the low-income bracket answered this question with the above-mentioned answer, as did 3 from the middle-income group and one from the high-income group. L-1 responded that diabetes is a disease affecting older individuals:

> Diabetes comes on after puberty, it is not a teenage disease, it is common with older people. It cause a lot of sugar in the blood. It is not a good thing, but I have

> it. Yes, I have T2DM and it is not a joke. I am just focused on my diabetes every day, nothing exciting only diabetes.

Other participants had their opinions about T2DM and disclosed their views and opinions. L-3 shared her opinion about T2DM:

> You can't eat what you want to eat. What I know is what I learn. Diabetes is a danger, it is dangerous to anyone who has it. Your blood sugar is up or down, I never have the same blood sugar every day or any 2 days and I am tired of it. It is just too much sugar in my blood. I try to do right but some days the sugar is just too high and then it gets too low.

When asked what T2 DM means to them, 3 respondents reported that they could not give a full explanation of T2DM but that they knew that it occurred when the blood sugar is high or when there is too much sugar in the blood. Participant H-3 stated:

> I guess it would mean a condition that people need to watch their diet because the body is not producing enough insulin to accommodate the sugar in the blood. So, there is a built up of sugar in the blood. I believe diabetes could be managed with exercise and diet, but it is a serious disease.

Participants H-2, H-3, M-4, and L-5 all stated that T2DM is a serious disease and is a result of organ dysfunction. H-2 further explained that the pancreas does not function as it should and that was what led her to develop diabetes. She stated:

> For a while I believe I could control it with diet and was doing well but um….it has not been good in the last couple of years and my sugar is staying high lately. I am currently on medical leave of absence from my job because my blood sugar is

> out of control and the doctor advised me to take some time off and care for myself.

Theme 2: Knowledge of T2DM

Powers et al. (2015) stated that diabetes education is important to provide the knowledge, skill, and ability necessary for individuals to self-manage their disease. Knowledge of T2DM also emerged as a theme for RQ 1 when participants were asked whether or not they received adequate education to self-manage the disease. Twelve participants (80%) stated that they gained knowledge of diabetes by attending diabetes education classes. All 12 participants disclosed that their primary provider had recommended the diabetes education classes for them and that they receive adequate education to self-manage their diabetes. Three participants in the high-income group did not believe that they had received adequate teaching to self-manage their disease. H-1, H-3, and H-5 denied receiving diabetes education from their primary provider but stated that they had acquired knowledge by reading, through the internet, and through conversation with other individuals and families with T2DM. H-1, seeming frustrated, stated that she had had the disease for almost 10 years and had changed doctors several times, yet she cannot recall getting any kind of teaching from any of them. She stated,

> I have changed doctors several times. I just change my doctor in February. My doctor has not said anything to me about my sugar. If my sugar goes up, I take more insulin. I have been using the same prescription medication from the last doctor. I came down with a virus and went to see the doctor he gave me Asthma inhalers, but said nothing about my sugar. I do not have Asthma, so I did not fill

> the prescription I have no trust in this doctor, and I am ready to change him to someone else I heard about.

Another participant, M-5, appeared rather pleased with the way in which her doctor interacted with her. M-5 stated that her doctor is good because she discussed issues like weight and listened to what she has to say.

All 15 participants were asked about their knowledge of HgbA1C. Thirteen individuals (86%) explained their understanding of HgbA1C. All 13 individuals knew what their last readings were and when the HgbA1C was due to be taken again. One individual (7%) had little knowledge of HgbA1C and stated that the test may have been conducted with other blood work. Only 1 person (7%) had no knowledge of HgbA1C.

Theme 3: Self-Care Management

During the interviews, the participants explained how they self-manage their diabetes. Eleven participants (73%) stated that self-management starts with checking their blood sugar as recommended by their doctor. All 11 participants (LI = 3, MI = 4, HI = 4) reported that regular blood sugar monitoring allowed them to plan and modify their diets. Participant H-1 reported,

> Well, I start with managing the sugar. In the mornings if the sugar is 120 or less I do not take insulin. If it is 180 or more in the evenings I take 8 units of insulin. I am careful with what I eat to an extent, so I am self-managing. I am careful with what I do. If the sugar is too low when I check it I eat a piece of sweet like guava cheese.

L-2 had a similar response. He reported monitoring his blood sugar twice daily and eating the right types of food to keep his blood sugar within normal limits. He appeared knowledgeable about the type of food he should eat. L-2 stated that he is self-managing his diabetes well and only needs a little advice from the doctor sometimes:

> I check my sugar in the morning and again before I go to bed. I eat the right food. I eat less starch, more vegetables, and protein. I never like red meat so I eat fish, chicken or turkey. I go to all my appointments and keep myself active. I plant a vegetable garden in my backyard. I am doing well with the diabetes because I have it for a long time and I only have a little pain in my knees now and then.

Three participants reported that they keep blood sugar logs in which they record all blood sugar readings and share these logs with their doctor. They reported using this method of monitoring to determine what time of day their blood sugar is highest or lowest. They reported feeling that it is a safe practice to help them manage their diet. H-3 was eager to share his experience about his self-management of his diabetes:

> I always believe that knowing where your blood sugar is, is a good thing so I have a 24 hours continuous glucose texting system called Dexcom. The Dexcom goes to my iPhone 6. Every 5 minutes I get a reading, and by keeping track of the reading I know what to eat and how much I can have. The Dexcom will also tell me what the last few readings were. So, because of this device, I can pretty much eat a meal and my blood sugar not greatly affected. We grow our own vegetables or we go to the farmers market. I love vegetables. My wife does a good job with the veggies steamed or raw.

Two individuals (13%) reported that keeping doctors' appointments is a big part of their self-management strategy. Another 2 persons stated that they keep all doctors' appointments, maintain a strict diet, exercise, and check their blood sugar frequently.

Theme 4: Social Support

When asked who supports individuals in managing their diabetes and what kind of support they provide, 14 participants (93%) said that they have support from friends and family to help them manage their disease. One participant (7%) reported having no social support to help manage their disease. Social support has been deemed to be very important for individuals with chronic diseases by enabling them to cope effectively with the disease (Ramkisson, Pillay, & Sibanda, 2017). Fourteen participants in this study disclosed that they have the social support they need to help them cope with the disease.

One participant stated,

> My wife helped me all the way. She has been by my side from Day 1, and I believe that makes diabetes so controlled. My wife prepares all my meals but not only does she prepare the meals she counts the carbs and the calorie content. The type of foods my wife prepares and the way she prepares it helps to manage my diabetes. I tell you, she is a gourmet cook. She helps me to exercise. I mean she exercises with me, well it is good for her too, but she is doing it for me.

Although there is increasing need for the involvement of social support in diabetes care, there appears to have been only minimal response from law makers toward ensuring implementation of such support (Kadirvelu, Sadasivan, & Ng, 2012). In response to the above question, M-4 stated,

> I sing praises to my mom. She is my number 1 support person. Since the day I was diagnosed with diabetes mom has been there for me. She cooks for me sometimes. She gives me some dietary advice like what to eat. I learned from her to drink plenty water and unsweetened teas. Now anything with sugar does not taste good to me anymore. I do not use sweeteners either. The most amazing thing my mother could do is pray for me. She prays for me every day. I do not live with her anymore, but she is my mother and my inspiration and is still praying for me.

Another participant stated that she had no support to help her manage her disease. She reported having family members who visit her occasionally but stated that no one seems to care that she has diabetes. She further stated that diabetes is a lot and that sometimes she gets sad about having the disease. When probed about the factors that contribute to her sadness, she mentioned family events, at which she has to watch what she eats and at which usually there are no food options that will not affect her blood sugar.

Theme 5: Access to Health Providers and Health Care

Access to health providers and health care emerged as the fifth theme in this study, with all 15 participants (100%) stating that they have access to providers and health care. The participants' responses are based on Interview Question 9. Of the 15 participants, 2 participants (13%) did not have health insurance coverage; however, they reported being able to keep most doctors' appointments and to buy their medication. L-5 stated that even though she does not have health insurance coverage, her doctor is very

kind to her and lets her come in when she can afford to pay. Her doctor advised her to buy her supplies at Walmart, and she reported that so far she is doing well:

> I have access to good quality care. I do not have medical insurance. I do not get to see a diabetes specialist. I see my primary care doctor. I do not have free access to care. I go to the doctor only when I can afford to pay out of my pocket, so I see the doctor when I really need to. Anyway I have been able to keep frequent visits with the doctor. When I go he gives me some samples of the medication I take and he gives me an appointment. He tells me that if I cannot keep the appointment then I could go whenever I can but if I get sick I should go to the emergency room. I always try to keep the appointment they give me so I believe in a way I do have access to quality of care. The good thing is I can buy my strips and insulin at Walmart. I do not use insulin too often only when the sugar is over 300. That does not happen too often. I know I will be alright. I am waiting till I turn 65 years and get Medicare because the out of pocket expense is high.

Theme 6: Diet

Diet emerged as a theme from participants' response to Interview Question 5. Of 15 participants, 14 participants (93%) reported that they prepare their meals themselves. One individual (7%) stated that his spouse prepares all his meals. When asked about eating habits, 13 individuals (86%) reported having 3 main meals (breakfast, lunch, and dinner) and snacks between meals. Two participants (13%) reported having 2 meals a day and rarely snacking during the daytime. Fourteen participants (93%) reported that they like to have sweets and most often choose sweets as snacks. One participant (7%)

reported completely omitting sweets from his diet. Eleven participants (73%) reported that they omit red meat from their diet and eat baked chicken, baked turkey, fish, carbohydrates like potatoes, and salad. Four participants (27%) reported including red meat in their diet but in moderate amounts; all 4 individuals reported liking to eat pasta, rice, potatoes, and salad and drinking plenty water.

One participant, H-5, stated that she likes to prepare her own meals but that sometimes her husband helps her. She reported liking to have a healthy breakfast like oatmeal, toast, a piece of fruit, and a cup of coffee. At lunch time, she reported usually enjoying a homemade sandwich using leftover chicken, fish, or turkey. She also reported drinking lots of water and rarely a Diet Coke. At dinner time, H-5 stated that she eats baked chicken, fish, or turkey and a large salad. She reported consuming very little rice and no red meat. She also reported snacking on nuts and fruits between meals but stated that if she is really hungry, she eats graham crackers and cheese.

Three participants reported that they keep blood sugar logs in which they record all blood sugar readings and share these logs with the doctor. They reported using this method of monitoring to determine what time of day their blood sugar is highest or lowest. They felt that this is a safe practice to help them manage their diet. H-3 was eager to share his experience about his self-management of his diabetes:

> I always believe that knowing where your blood sugar is, is a good thing so I have a 24 hours continuous glucose texting system called Dexcom. The Dexcom goes to my iPhone 6. Every 5 minutes I get a reading, and by keeping track of the reading I know what to eat and how much I can have. The Dexcom will also tell

> me what the last few readings were. So, because of this device, I can pretty much eat a meal and my blood sugar not greatly affected. We grow our own vegetables or we go to the farmers market. I love vegetables. My wife does a good job with the veggies steamed or raw.

Theme 7: Compliance

All 15 participants (100%) stated that they are compliant with their care. All participants reported being aware of the complications of diabetes and of following up with their doctors regularly. Interview Questions 3, 5, 11 and 12 provided the information for Theme 7. I intended Interview Question 3 to highlight how participants cared for their eyes, as well as the last time they had their pupils dilated. All 15 participants reported that they see an eye doctor annually or as recommended and got their eyes dilated. When asked about eating habits and preference for meals and snacks, more than 50% of the participants voiced compliance. Participants also referred to foot care as an area of high compliance with self-care management. Ten out of 15 participants reported that they see a foot doctor frequently. Five out of 15 respondents reported self-examining their feet daily, wearing diabetic socks, and applying lotion and oil to their feet but not between their toes, as recommended. Participant M-3 stated,

> My primary doctor checks my feet. I make sure my feet are clean and dry. I keep shoes and socks on. I used to have a bad habit of wearing flip flops but I do not wear them anymore. I need to take care of my feet because no one will take care of them the way I do.

Another participant H-4 stated,

> I get pedicures sometimes. I lotion my feet and keep them clean and dry. I wear proper fitting shoes, not ones that are too tight. I am very conscious about my feet. I know that if I do not take care of my feet I can lose them.

Theme 8: Exercise

Exercise emerged as the eighth theme in this study. Interview Question 12 probed into the subject area of exercise and exercise habits and produced diverse responses from the participants. Thirteen participants (87%) reported exercising at least 1 time per week. All 13 participants reported having a routine pattern for walking. When probed about their exercise routine, 4 participants (27%) stated that they walk daily, lift weights, ride a bicycle, use a treadmill, and play basketball. Five participants (33%) reported walking 3 times a week and bicycle 5 times a week.

Two participants (13%) reported engaging in gardening and outdoor chores to keep them active. Another 2 participants (13%) stated that although they are not engaged in physical activities, their jobs involve busy work that keeps them going all day long and that they believe they get the exercise they need. Two participants are not able to do any physical exercise or go for walks due to leg pain. These 2 participants reported remaining active with their hands and upper body. Some participants were willing to detail their exercise routine. For instance, Participant H-3 stated,

> I do 5 planned days of exercise, I walk, I run, I bicycle and I do weight lifting. On Day 6 I do whatever I feel like doing. I do some yard work or gardening. I like to go food shopping with my wife and the neighbor. On Day 7 I do nothing besides go to church. That is pretty much my exercise routine.

Another participant, M-1, reported liking to walk and stay busy around the house. She stated,

> Like I said, I walk and stay busy around the house. I do not have an exercise routine, anyway I feel like going to the park I will go and walk for a couple of miles or so. Sometimes I just go and sit for a while then go home. I have not walked for 2 days now because when the body says no I cannot push it, so I just stay and walk around the house.

Participant H-1 commented that exercise is good self-management but that she is not able to do as much as she used to. She stated,

> Right now as I talk to you, I am exercising the right knee. In the morning I exercise my right knee. As for the body, the heart is willing, but the body is weak. I was in an exercise program and after 1 year no weight loss so I stopped. My cardiologist says I need to lose 20lbs, I have lost 7, and I am working on the other 13. Five months ago I used the treadmill. I need some encouragement and motivation. I used to go to the GYM with my neighbor but she stopped going 5 months ago, and I stopped too. I have a bike and a tread mill which I do not use. My knees are bothering me.

Theme 9: Self-Awareness

Self-awareness stood out as a theme, with participants' responses portraying conscious knowledge of the way in which they accept and manage their diabetes. To investigate RQ 3, I asked the participants to explain how the level of their experience with T2DM impacted their self-care management. The years in which participants had

had T2DM ranged between 2 and 25 years. This means that all 15 individuals had 5 years or more of experience with T2DM. All 15 participants (100%) stated that through their many years with T2DM, they have developed self-awareness and that their desire to self-manage the disease is evident in the absence of severe complications. Several participants reported that they have the ability to be effective with managing their diabetes. Other participants implied that a better understanding of their body and their diabetes would enhance their self-care and promote better health outcomes. When asked about the experience with T2DM, L-2 responded,

> My experience tells me that diabetes is a lifetime scavenger on my life. It changed my life. It makes me look bad. I believe everyone should take a class on diabetes. I took the class for diabetes teaching. The class helped me to understand my doctor better, to be careful with my feet, I examine them for cuts and bruises. The things I used to eat I cannot eat anymore so I have changed my diet. Now I check my sugar like I should 4 times a day. When I go to work or somewhere I take my machine and check my sugar. So the more I understand my body and diabetes it will be better for me to help care for myself.

Participants H-5 and L-4 had similar events with T2DM, which motivated them to develop high self-efficacy and the ability to self-manage their diabetes.

Study Results for Research Questions

Research Question 1

RQ 1: What are the experiences of adults with T2DM living in Marion County, Florida with the quality of health care provided and how does it affect their self-management of their disease?

Interview Questions 1, 2, 3, and 4 provided the information needed to answer RQ 1. The first research question addressed the experiences of adults with T2DM, the quality of care they received, and their engagement in self-management. Three themes emerged from this research question:

- sugar in the blood,
- knowledge of T2DM, and
- Self-care management.

The participants responded with different words, phrases, and sentences; however, their answers implied that they have knowledge of diabetes and that they have the ability to self-manage their disease.

Nine out of 15 participants described the meaning of T2DM as sugar in the blood. Of those 9 participants, 4 were in the low-income group (LI), 3 were in the middle-income group (MI), and 2 were in the high-income group (HI). In her response, L-5 stated that she is on medication therapy that helps her to decrease the amount of sugar in the blood. In another interview, participant M-2 disclosed that she had to test her blood sugar quite frequently in an effort to keep it under control while self-managing.

Most participants (12 out of 15) responded positively to the adequacy of the diabetes education that they had received. In their own words and voices, these participants stated that they had obtained the necessary education to self-manage their disease. One respondent, M-4, who had been diagnosed with T2DM 2 years prior stated that he started seeing a new primary care provider but had not received any information from him. However, M-4 further stated that his previous doctor had taught him a lot and sent him to a diabetes class so that he could understand more about the disease. The interview question made specific reference to a primary provider delivering the information. Several participants reported that their primary care provider had referred them to diabetes education classes, which in this study filled the void for the primary care provider. Of the 12 participants whose responses generated the theme, 5 participants were LI, 4 were MI, and 3 were HI.

To address the theme of self-care management, individuals responded in several different ways. All 15 participants stated that they are able to self-manage their disease efficiently. Most of the respondents (11 out of 15) mentioned monitoring their blood sugar as one of the primary ways to self-manage the disease. Other modes of self-management listed by respondents included managing diet, caring for their feet, keeping appointments, exercising, and attending diabetes education classes. All 15 participants, who were evenly spread in the 3 income groups (L-5, M-5, and H-5), stated in their own words that self-care management is a dedicated cause with a combination of coordinated efforts. Participant H-2 stated that she had had diabetes for17 years and thought that she could control her disease with diet alone. Exercise did not form a part of her plan

initially, but she reported currently incorporating exercise in her self-management routine. The significant finding that emerged from the analysis of the participants' responses is that individuals in Marion County felt that they were managing their diabetes appropriately, regardless of their income level.

Research Question 2

RQ 2: What are the experiences of adults with T2DM in different income brackets living in Marion County, Florida with access to and quality of care?

Interview Questions 5, 6, 7, 8, and 9 provided the participants with the opportunity to answer RQ 2. The second research question explored individuals' experiences with T2DM in Marion County and the access to quality of care based on their income. I recruited participants who were willing to share their views, experiences, and opinions regarding the quality of care they receive based upon their income level or their finances. Three themes (social support, access to providers and care, and diet) evolved from the participants' responses to interview questions. Fourteen out of 15 participants described social support as family and friends who help them to manage their diabetes. M-5 stated that her sister in Texas, who is also has diabetes, helps her with her diabetes. She reports frequently engaging in telephone conversations with her sister and considering her an advocate. Participant H-4 asserted that her boyfriend is her advocate, along with her parents. Data analysis further revealed that participants in all 3 income groups answered the question similarly. Four participants in the LI group responded to the question, so did 5 in MI and 5 in HI.

As previously mentioned, access to provider care evolved as a theme for RQ 2. After careful data analysis, I discovered cost of service is a platform for access to care. However, cost of service was not explored in this study. Fifteen participants reported that they are satisfied with the quality of provider care that they receive. Participant L-5, who is 60 years old and self-employed, with an annual combined household income of approximately $30,000.00 and sees a doctor when she can afford the out of pocket expense, stated that she does not have medical insurance; however, this did not stand in the way of her receiving quality care. L-5 stated that she paid for care out of pocket and is quite confident that she is receiving the quality of care needed to control her diabetes. The participant explained that her physician gave her the option to reschedule her appointment based on when she has the money available to pay for the service. Another participant, L-1, used different words and sentences to imply that she does not have medical insurance coverage, but like L-5, she reported paying for medical care out of pocket and also reported that she is able to purchase the necessary supplies at a discounted cost, thus indicating she received quality care. Participants reported in their own words that quality of care and access to care depends upon their interest in their own care. All participants responded to Interview Question 9, which sought to discover whether or not participants received the care they desired. Data analysis showed that all participants felt that their ability to pay for care, whether out-of-pocket or through medical insurance, contributed to the enhancement of good quality care. Further analysis showed that the participants in each income bracket have a good perception of quality

care which includes access to health care providers, blood glucose monitoring, access to medication, healthy diet and exercise.

The third theme to emerge for RQ 2 through the process of data analysis was diet. Interview Question 5 provided the information for this theme. All 15 participants stated that they are aware of the importance of dietary measures in the control and management of T2DM. Thirteen out of 15 respondents reported making changes to their diet to help control their diabetes. Fourteen participants reported self-managing their diet with support from families and friends. Every participant in this study demonstrated knowledge of food exchanges and choices. Most individuals appeared compliant with diet plan; some appeared aware of the diet plan but verbalized that they occasionally cheated.

Most of the respondents stated that they have good eating habits. The participants unanimously believed that dietary changes are important in the control of diabetes. Ten out of 15 participants reported having 3 main meals and eating healthy snacks. Four out of 15 participants stated that they have 3 regular meals, which are not necessarily healthy, and snack on sweets. One participant stated that she likes to eat junk food and is aware that junk food is not an appropriate food choice. Participant L-1 reported being aware of the appropriate diet but reported that she likes to eat junk food and usually goes to a fast food store for meals, especially breakfast. Based on the general views that emerged from the data analysis in this study, participants in all 3 income brackets appeared to have broad knowledge of and understanding about their diet. As mentioned earlier, most of

these individuals reported learning about how to manage their diets by attending diabetes education classes.

Research Question 3

RQ 3: What is the perceived self-efficacy for adults with T2DM in Marion County, Florida?

The third research question investigated the perceived self-efficacy for adults with T2DM in Marion County, Florida. Three themes emerged for this question: compliance, exercise, and self-awareness. Although no interview question asked specifically about participants' compliance, other questions did focus specifically on diet, exercise, eye care, and foot care, all of which provided the information about compliance. When asked about their eating habits, 10 out of the 15 respondents reported complying with their diet.

Compliance plays an important role in the control and outcomes of T2DM. All 15 participants reported that compliance with care and self-care practices could control diabetes, prevent or delay complications, and improve outcomes. The participants responded to several key areas of diabetes management and self-care. When asked about eye care, foot care, diet, exercise, and doctors' visits, the responses were unanimous. For instance:

- All respondents (15 out of 15) stated they complied with their eye care by having yearly eye exams. Five persons from each income bracket responded.
- 10 out of 15 participants reported complying with their diet.
- 13 out of 15 individuals stated that they were compliant with exercise by exercising at least once daily.

- All participants (15 out of 15) reported complying with doctors' appointments.

Through data analysis, I discovered that all 15 participants in this study appeared being aware of the processes and activities needed to achieve compliance with diabetes management and self-care practices. More than 65% of the participants across all 3 income brackets were compliant with all of the management and self-care measures recommended to promote diabetes outcomes. Self-awareness arose as a theme from Interview Question 13. I asked the participants to explain how their experiences with diabetes affected their self-management. Fifteen participants (100%) responded that their experiences with diabetes had given them a new self-awareness, which motivated them to better self-manage their disease. Based on the result of the study, it appeared that individuals with T2DM in Marion County could benefit from diabetes education that will explain the etiology, development, and progression of diabetes.

Table 7

Responses to Themes Based on Income Brackets

Themes	# of Responses	LI	MI	HI
1. Sugar in blood	9	4	3	2
2. Knowledge of T2DM	12	5	4	3
3. Self-care management	15	5	5	5
4. Social Support	14	4	5	5
5. Access to provider/care	15	5	5	5
6. Diet	15	5	5	5
7. Exercise	13	3	7	3
8. Compliance	15	5	5	5
9. Self-awareness	15	5	5	5

Note. LI = low income; MI = middle income; HI = high income.

Summary

In this qualitative multiple case study, I aimed to gain an understanding of how people with T2DM in Marion County, Florida self-manage their disease from an income perspective. I outlined how I planned and executed the research; and how codes, themes and categories emerged from the data analysis. Fifteen individuals aged 45 years and over who had lived in Marion County for at least 1 year and had been diagnosed with T2DM at least 1 year prior participated in the study. RQ 1 explored the experiences of adults with T2DM in Marion County, specifically how they self-manage the disease based on

their different income brackets. The participants' responses indicated that in Marion County, Florida, adults with T2DM self-manage their disease appropriately through diabetes education classes, regardless of their income brackets.

RQ 2 explored access to and quality of care for these adults with T2DM in Marion County. Fifteen participants answered 5 open-ended questions, which indicated their access to and quality of care regardless to income levels. The majority of the participants had medical insurance coverage; however, they did not receive any different care than those participants without insurance. Marion County Health Department and its affiliates provide diabetes care for indigent individuals and for those persons without health care insurance.

RQ 3 probed into participants' perceived self-efficacy. The data revealed that self-awareness and compliance with diabetes management and self-care measures led to enhanced self-efficacy and promoted better outcomes for study participants.

In Chapter 5, I provide a detailed report of the study results, a discussion of the research questions, and the implications of the findings. I also provide recommendations for health educators and policy makers and implications for social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In this qualitative multiple case study, I aimed to investigate how adults with T2DM in Marion County, Florida self-manage their disease and how the quality of the care they receive is influenced by their different levels of income. Because diabetes remains a significant global public health concern (Asif, 2014; Siddique et al., 2017), individuals need to gain enough knowledge to help them self-manage their disease. Researchers have found that without a proper understanding of the disease and stable health care utilization, individuals with diabetes could see worse health outcomes, resulting in further burden on health care industries around the world (Siddique et al., 2017). Elissen et al. (2013) showed that although health care providers recognized that the involvement of patients as partners in their care produces better outcomes, actual self-management support in the health care practices remained limited

People with T2DM could benefit from engaging in self-care activities. Thus, it is crucial for individuals to self-manage their disease regardless of their income status (low-, middle-, or high-income). Fifteen participants participated in this study, with 5 persons in each income group. I employed qualitative multiple case study to answer the research questions and to satisfy the purpose of the inquiry. The study provided in-depth analysis of the problem. Three research questions exemplified the focus of this research:

RQ 1: What are the experiences of adults with T2DM living in Marion County, Florida with the quality of health care provided and how does it affect their self-management of their disease?

RQ 2: What are the experiences of adults with T2DM in different income brackets living in Marion County, Florida with access to and quality of care?

RQ 3: What is the perceived self-efficacy for adults with T2DM in Marion County, Florida?

Interpretation of Findings

Chapter 5 presents the interpretation of the findings of this study on level of income and quality of care among adults with T2DM in Marion County, Florida. Along with the presentation of the results, I also present the limitation of the study, recommendations, implications, and a conclusion. The data analysis process allowed me to examine how the respondents manage their diabetes, as well as the quality of care they received based on their level of income. An interview protocol (Appendix D) guided the study; this protocol was comprised of 3 research questions and 13 interview questions. Nine themes emerged from the data analysis and set the foundation for the results of the study. Based on the findings from the analysis of the participants' responses, I determined that individuals in Marion County with T2DM and within all 3 income groups receive the same quality of provider care, have equal access to providers and care, and adhere to most self-care practices. I further discovered that individuals choose walking to support the need for physical activity.

Research Question 1

In RQ 1, I aimed to gain an understanding of the quality of health care provided for adults with T2DM in Marion County and how it affects their self-management of their disease. Four interview questions (1, 2, 3, and 4) provided 3 themes for RQ 1. The

themes that emerged were (a) sugar in the blood, (b) knowledge of T2DM, and (c) self-care management. I determined that most participants explained their understanding of T2DM as sugar in the blood, although they did not specify whether they meant high or low blood sugar. Researchers have also found that high blood glucose (hyperglycemia) contributes to increased risks of diabetes complications (Meetoo, 2014). Other researchers have suggested that low blood sugar (hypoglycemia) is also associated with diabetes complications and could result in increased morbidity or mortality (Akirov, Grossman, Shochat, & Shimon, 2017).

Other participants suggested that T2DM is linked to organ dysfunction. Four participants from the LI bracket, 3 from the MI bracket, and 2 from the HI bracket all gave the same response. One participant from the LI group reported that T2DM is age-related and comes on after puberty. Two participants from the MI group and 1 from the HI group responded that T2DM is related to organ dysfunction. Researchers have supported the results of this study by indicating that T2DM is characterized by abnormally high blood glucose levels (Kadirvelu et al., 2012; Meetoo, 2014; Shrivastava et al., 2013).

Diabetes is a complex metabolic disorder mainly caused by a deficiency of insulin hormone in the body related to organ dysfunction (Meetoo, 2014; Shrivastava et al., 2013). T2DM represents the most common type of diabetes and occurs mostly in adults (Asif, 2014; Matricciani & Jones, 2014). The prevalence of the disease increases with age and therefore puts the adult population at risk for the disease and its accompanying complication (Asif, 2014; Matricciani & Jones, 2014).

Knowledge of T2DM stood out as a theme, with 12 out of 15 (80%) of the respondents stating that they were knowledgeable about their disease and that they attended diabetes education classes to become more knowledgeable about the illness. All 12 respondents narrated that they visited diabetes education classes on the recommendation of their primary care physician. Although the majority of the participants appeared to have good knowledge about the disease 3 participants (20%) in the HI group did not receive the education needed to self-manage their disease; however, they reported having good prior knowledge and experience, which enables them to execute self-care behaviors. For instance, H-1, who is a retired nurse, has had diabetes for over 10 years and cannot recall receiving information about the disease. She stated that she had changed doctors several times over the years but still had not received education to guide her in self-managing her disease. H-1 pointed out that she had relied on her nursing experience to help her self-manage her illness for many years. Another 2 participants reported acquiring the knowledge to self-manage their diabetes by reading, using the Internet, and having conversations with families and friends.

In addition to the support of family and friends support, researchers have found that people with T2DM require continuous support from health care providers to manage the prescribed lifestyle, which could otherwise be challenging for them (Kadirvelu et al., 2012). Living with T2DM can affect all aspects of a person life; even so, it is possible for an individual to maintain a healthy lifestyle if they include self-care activities in their daily lifestyles (Reisi et al., 2016). Reisi et al. (2016) further inferred implied that health literacy enables patients to participate in health-related behaviors, such as diabetes self-

care activities. Persons with T2DM who have a good knowledge of the disease may readily accept the use of health care services to improve their diabetes self-management and promote better health outcomes (Siddique et al., 2017). In this study, I showed that adults with T2DM in Marion County have average knowledge of the disease, which encourages them to use health care services and therefore could promote better health outcomes. I further discovered that participants in all 3 income groups are equally knowledgeable about T2DM.

The chronic disorder of T2DM requires keen attention to self-care behaviors, including diet, exercise, blood glucose monitoring, medication, and foot care (Mogre, Johnson, Tzelepis, Shaw, & Paul, 2017). In a recent study, Siddique et al. (2017) showed that individuals with T2DM who attain high health literacy are more confident in their ability to perform self-care activities and are more satisfied that adhering to these personal behaviors will yield better outcomes. In this qualitative case study, I found that adults with T2DM in Marion County had average knowledge of the disease, which could encourage use of health care services and therefore could promote better health outcome with continuous self-management (Siddique et al., 2017). Eleven participants (73%) in this study stated that self-management starts with blood sugar monitoring, foot care, diet, and exercise. In addition, 2 participants (13%) stated that keeping doctor's appointments is vital to self-care management. I asked the participants to describe their routine for self-blood glucose monitoring. Eleven of 15 individuals stated that regular blood sugar monitoring helps them to plan and modify their diet. Three individuals from the different income groups had similar blood glucose monitoring routines, which consist of checking

the glucose 3 times daily as recommended, taking insulin or having a snack (whichever is appropriate), and recording the results. Another participant stated,

> I check my sugar.in the mornings and again before I go to bed. I eat less starch, more vegetables, protein, fish, and chicken or turkey. I keep myself active in the backyard. I try to keep all my appointments. I have T2DM for a long time, and I am doing well because I know how to take care of myself. People with T2DM in Marion County have average knowledge of diabetes which might affect health care service utilization and improve engagement in self-care activities.

Research Question 2

RQ 2 explored the experiences of adults with T2DM in Marion County, Florida regarding access to and quality of care.

The participants' responses to 5 interview questions (5, 6, 7, 8, and 9) generated 3 themes: (a) social support, (b) access to providers and care, and (c) diet. Patients with T2DM need support to help them manage their disease (Ramkisson et al., 2017). Fourteen out of 15 (93%) participants reported that they had support from families and friends. All 14 participants reported being confident that this support helps them to promote and maintain good health outcomes. Kadirvelu et al. (2012) stated that there is a tendency for the free support from family and friends to be provided only during acute phases of the disease, when the symptoms and complications are at their worst. In addition, the burden of the disease could leave the patient with a guilty feeling. However, this did not appear to be the case for 1 participant (M-3), a 64-year-old woman who is

employed and has had T2DM for 23 years. M-3 reported having good family support and shared her views:

> I have strong social support. My daughter is my strong support. She has been helping me to take care of my diabetes as soon as she was able to help. I am getting old now I really need her support. I have some friends at work who help me also. They have diabetes too, so we help each other. We walk during lunch time and share different ideas to help us with diabetes. I am blessed to be in their company.

In addition to the support of family and friends, some participants reported that their primary care physicians provided some support for them, either by discussing diabetes with them or by recommending diabetes education classes for them. The latter practice appeared most common. L-5 is 49 years old and has had T2DM for 22 years; when I asked who helped her to manage her disease, she stated,

> Well, my doctor, my son, and my coworkers. They all helped me. My doctor helped me with my diet plan. He discussed what to eat and what I could substitute. I have been going to him for many years so he knows me quite well. If my numbers (e.g. HgbA1C) are bad he will discuss with me. My son calls to check on me pretty often. He lives in another county. He comes to see me when he can but he has a family and little ones in school. My coworkers helped me to eat the right food. If I am eating something that may affect my blood sugar they call me out, then I feel guilty and take a smaller portion or none at all. They watch me. Effective self-management motivation is crucial.

Social support and social network is the basis for self-management of patients with T2DM (Kadirvelu et al., 2012).

A lack of health insurance can create a barrier to medical care, which could increase the risk of diabetes complications and costs (Brown & McBride, 2015). In this study, I found that individuals with T2DM in Marion County have no barriers to accessing providers and health care. Fifteen participants (100%) reported that they have access to their providers as scheduled and when needed. Researchers have shown that uninsured adults have less access to care than insured person (Brown & McBride, 2015). Eight out of 15 participants in this study are employed and have private insurance, 4 are retired and have Medicare, and 1 is self-employed and has private insurance; 2 others are self-employed with no insurance. Two participants in this study reported that they pay out of pocket for health care, yet they have access to providers and quality health care similar to the insured persons. However, they did state that their ability to access their physician and pay for their medications was dependent on having the money pay for it. Three out of the 15 participants (20%) experienced no barrier in accessing providers or health care, but they verbalized dissatisfaction with the quality of care provided by their primary care physician. On an income-based level, I found that access to providers and care appear to be accessible regardless of income bracket.

Diet improves health through balanced nutrition and plays a vital role in diabetes self-management and health outcomes (Asif, 2014). Interview Question 5 provided the information on diet and gained participants responses. The participants in this study appeared to be aware of the significance of an appropriate diet and made changes to their

diet to support the control of their diabetes. Although each person with diabetes may need an individualized treatment plan, overall diet adjustment, increased activity, and medication therapy are vital to controlling glucose and insulin in the blood and to preventing, delaying, and treating diabetes-related complications (Asif, 2014). Asif (2014) also stated that both health care providers and patients need to understand the underlying dietary needs of the patient. All 15 participants (100%) in this study reported having good knowledge of nutritional management and attributed that understanding to diabetes education classes. The majority of the participants attended diabetes education classes and practiced healthy eating habits, consisting of 3 main meals and snacks daily. In addition, some participants' responses indicated that foods high in carbohydrates, fats, and sugar are consumed in moderation. Most of the participants stated that their daily dietary habits include the consumption of fruits, vegetables, whole grains, poultry, fish, and water. Participants reported little or no consumption of red meat.

Research Question 3

RQ 3 addresses the perceived self-efficacy of the study participants.

Within all 3 income brackets, participants' responses revealed that they comply with self-care management, including dietary practices, foot care, glucose testing, and regular doctor's visits. For instance, all 15 participants (100%) reported that they see an eye doctor annually and get their eyes dilated as recommended. Diabetes can have significant, devastating complications affecting the food and can result in foot ulcers, fungal infections, and limb amputation. (Vyas, 2015). Researchers have shown that improper footwear can increase the risk of limb amputation (Taylor et al., 2014). When

asked about foot care, participants responded that they see a foot doctor annually and take care of their feet daily by examining their feed and wearing diabetic socks and proper footwear.

Achieving optimum glycemic control is a significant diabetes self-glucose monitoring goal (Shrivastava et al., 2013). When asked about self-glucose testing, most of the participants from each income bracket responded that they were compliant with self-monitoring their glucose levels as recommended by their health care provider. Self-glucose monitoring makes up by far the most practical and cost-effective approach for diabetes management (Shrivastava et al., 2013). Thus, it is important for providers to educate and encourage patients to self-monitor their glucose.

Exercise also evolved as a vital theme in this study. I found that individuals in Marion County, Florida exercise an average of 1 time per week. Walking was the most frequent exercise habit reported in this study and is executed at the minimal level. Of the 15 participants, 4 (27%) lift weights, ride a bicycle, use a treadmill, and play basketball 2 to 3 times per week in addition to walking. Another 5 participants walk 3 times a week and use a bicycle 4 to 5 times per week. Shrivastava et al. (2013) found that adult with T2DM who engage in physical activities will have better glycemic control.

I also asked participants to explain how the level of their experiences influenced their self-care management. Most of the participants have had diabetes for more than 5 years and have gained enough experience with the disease and are involved in self-care practices. The experience they have gained appears to have helped them effectively self-manage their disease and seek medical assistance as appropriate. Thus, a sense of self-

awareness can heighten and sustain efforts to modify behaviors and promote better health outcomes among individuals with T2DM (Nassar Al-Dossary & Panagiota, 2014).

Diabetes-related foot complications makes up a common cause of morbidity among patients with diabetes (Lim, Lynn Ng, & Thomas, 2017). When asked about foot care, 10 out of 15 participants reported seeing a foot doctor once a year. Four participants in the LI group reported seeing a foot doctor annually, as did 4 participants in the MI group. Only 2 participants from the HI group reported seeing a foot doctor annually. To prevent diabetes foot syndrome and to meet the complex need of disease foot complications, a multidisciplinary approach and good self-management is warranted (Thole & Lobmann, 2016). Other participants reported that they practice good foot care including inspecting their feet, keeping them clean and dry, protecting them from heat or cold, and wearing proper footwear. One participant explained that she avoids standing for long periods of time to prevent foot complications. Researchers have indicated that unawareness of the diabetes process and of the importance of maintaining good glycemic control could result in diabetes complications, including diabetic foot ulcers (Aliasgharpour & Nayeri, 2012). Hence, to prevent diabetes foot complications, individuals must gain knowledge of the disease and must participate in proper self-care activities.

Limitations to the Study

The primary limitation that I identified in this multiple case study was the sample size. I screened and selected 15 individuals to participate in this study. However, the responses from these 15 participants may not capture a large-scale experience of how

people in Marion County with T2DM manage their disease based on their income level. It is likely that more important information could be captured in a larger sample.

Another limitation consists of the exclusion criteria. I excluded individuals who had experienced severe complications from diabetes, such as limb amputation. During data collection, I received calls from individuals who were willing to participate in the study but who had 1 or more major complications of diabetes and therefore did not meet the inclusion criteria. To reach a sample size of 15 qualified participants, I extended the recruitment period. I also identified race as another limitation. Although the study did not specify or make any exclusions based on race, the majority (11 out of 15) participants were African American. Finally, geography proved to be a limitation. Marion County is a very large county, and the majority of the participants lived in Ocala in the County of Marion.

Recommendations

Although I identified many studies that have been conducted regarding different areas of diabetes, I found no literature that examined the quality of care and levels of income among individuals with T2DM in Marion County. I therefore recommend that a broader study be done to capture a larger sample of individuals with T2DM.

I also recommend that a similar study be conducted employing a different methodology to gain insight into the study problem. For example, a quantitative study could provide a comparison of the results of this study. Exercise forms the weakest area noted from the data analysis in this study; I found that most adults with T2DM in Marion County participate in limited exercise activities. Most people reported taking a leisurely

walk once or twice a week but were not engaged in physical activities. Future researchers should focus on exercise using a larger number of participants.

Implications

I gave the participants in this study the opportunity to express their views and discuss their experiences regarding the quality of care they receive and how they self-manage their diabetes based on their finances. I used the responses of the participants to produce the study findings. Several studies have been conducted to address diabetes and coronary disease, diabetes and renal function, diabetes and retinopathy, and diabetes foot ulcer (Trikkalinou, Papazafiropoulou, & Melidonis, 2017). Also, Shao, Liang, Shi, Wan, and Yu (2017) studied social support, self-efficacy, and adherence in patients with T2DM. However, I found no study that examined the quality of care and the levels of income among diabetic persons in Marion County, Florida. Hence, I believe that the data gathered in this study could help to fill the gap in the literature regarding the perceptions of individuals with T2DM and with varying income levels about the quality of care in Marion County, Florida.

Potential for Positive Social Change

The possible social change implications from this inquiry include increased awareness of the challenges of diabetes care and self-management among adults with T2DM. I will make the results of this study available to the study participants and their families, health care providers, and educators. I will also publish the study in ProQuest and make it available through social media. The result of this study may encourage individuals to improve and adhere to good self-care practices and to eliminate sedentary

lifestyles that could affect the control of T2DM. I found that most people in Marion County with T2DM have social support networks; however, the results could also foster better support from family and friends, thus promoting better health outcomes. Social support is an intricate concept that includes social networks like families, friends, institutions, and communities (Harvey, Sherman, Spears, Ford, & Green, 2017).

The study could also prompt educators and other health officials to implement more specific training programs to better prepare individuals with T2DM, their families, and community members to better understand diabetes self-care management, regardless of their income bracket. Many adults with T2DM face rigid work schedules and find it almost impossible to exercise, practice good dietary habits, or adhere to blood sugar monitoring routines. Kadirvelu et al. (2012) have proposed that although good efforts have been made to implement diabetes self-care practices, there has been a decrease in the sustainability of those plans. Innovations in increasing diabetes knowledge, social support, provider support, and self-care management may present a new awareness of the study problem and help lawmakers improve policies to meet better standards for the quality of care and the levels of income for people with T2DM in Marion County, Florida.

Conclusion

I generated 3 research questions and 13 interview questions to explore the experiences of adults with T2DM in Marion County, Florida and to investigate how they self-manage their illness based on their income and their perceptions of the quality of care. From the participants' responses, I found that a healthy lifestyle, including good

dietary practices, exercise, knowledge of the disease, and compliance with recommended disease management plans, could improve the control of T2DM, promote better health outcomes, and increase self-awareness and satisfaction. Furthermore, I found that most individuals with T2DM in Marion County have strong social support from friends and families; such support affects a patient's behaviors and outcomes and depends upon good family relationship, age, and income (Kirk, Ebert, Gamble, & Ebert, 2013).

In this study, I aimed to gain an understanding of the experiences, views, and opinions of the participants regarding their self-management of their disease and the quality of care they receive based on income. I highlighted the importance of diabetes self-care practices and found that individuals in Marion County benefit from self-monitoring blood glucose. Individuals also participated in foot care practices, good dietary practices, and exercise. I also found that diabetes education is vital to diabetes self-care. Researchers have shown that patients who have diabetes training are better able to carry out diabetes self-care activities; however, knowledge alone is not enough to empower individuals to carry out the self-care skills (Reisi et al., 2016).

I provided the participants the opportunity to discuss their experiences and views. Based on the experiences and views of the respondents, it appeared that individuals with T2DM in Marion County receive average health care from their providers. Thus, individuals with T2DM in Marion County could benefit from diabetes education that explains the etiology, development, and progression of the disease. In alignment with other research results, most of the study participants stated that practicing diabetes-related behaviors will produce specific positive outcomes (Reisi et al., 2016)

References

Abolghasem, R., & Sedaghat, M. (2015). The patient attitude towards Type 2 diabetes mellitus: A qualitative study. *Journal of Religion and Health, 54*(4), 1191-1205. doi: 10.1007/s10943-014-9848-9

Agardh, E., Allbeck, P., Hallqvist, J., Moradi, T., & Sidorchuk, A. (2011). Type 2 diabetes incidence and socio-economic position: A systemic review and meta-analysis. *International Journal of Epidemiology*, *40*(3), 804-818. doi:10.1093/ije/dyr029

Agency for Healthcare Research and Quality. (2012). *Closing the quality gap series: Medication adherence interventions: Comparative Effectiveness*. Retrieved from http://effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews

Ahn, A., Tewari, M., Poon, C., & Phillips, R. (2006). The limits of reductionism in medicine: Could system biology offer an alternative. *Plos Medicine, 3*(6), doi:10.1371/journal.pmed.0030208

Akirov, A., Grossman, A., Shochat,T., & Shimon, I (2017). Mortality among hospitalized patients with hypoglycemia: Insulin related and noninsulin related. *Journal of Clinical Endocrinology and Metabolism,* 102(2), 416-424, doi: 10.1210/jc2016-2653

Aliasgharpour, M., & Nayeri, N. (2012). The care process of diabetic foot ulcer patients: A qualitative study in Iran. *Journal of Disease and Metabolic Disorder*, *11*(27), doi: 10.1186/2251-6581-11-27

Al-Khawaldeh, O. A., Al-Hassan, M. A., Froelicher, E.S. (2012). Self-efficacy, self-

management and glycemic control in adults with Type 2 diabetes mellitus. *Journal of Diabetes Complications, 26*(1), 10-16. doi:10.1016/j.jdiacomp.2011.11.002

Alvarez, M., Dilla, T., Gil-Guillen, V., & Orozco-Bertran, D. (2013). Adherence to therapies in patients with Type 2 diabetes. *Diabetes Therapy, 4*(2), 175-194. doi:10.1007/s13300-013-0034-y

American Diabetes Association. (2013a). *Diabetes complication*. Retrieved from www.diabetes.org/diabetes/complication

American Diabetes Association. (2013b). Economic cost diabetes in the U.S. 2012. *Diabetes Care, 36*(4). 1033-1046. doi:10.2337/dc12-2625

American Diabetes Association. (2013c). Executive summary: Standards of medical care in diabetes-2013. *Diabetes Care, 36*(Supplement 1), S4-S10. doi:10.2337/dc13-S004

American Diabetes Association. (2014). *Diagnosis and classification of diabetes mellitus*. Retrieved from www.care.diabetesjournal.org

American Diabetes Association. (2015). Older adults. *Diabetes Care, 38*(Supplement 1), S67- S69. doi:10.2337/dc15-S013

American Diabetes Association. (2016). Management of diabetes in pregnancy. *Diabetes Care, 39*(Supplement 1), S94-S98. doi:10.2337/dc16-5015

American Heart Association (2017). *What is High Blood Pressure?* Retrieved from https://www.heart.org/idc/groups/heart-public/@wcm/@hcm/documents/downloadable/ucm_300310.pdf

Anney, V. (2014). Ensuring the quality of the findings of qualitative research: Looking at trustworthiness criteria. *Journal of Energy Trends in Educational Research and Policy Studies, 5*(2), 272-281. doi:10.2307/3594403

Arredondo, A., & Reyes, G. (2013). Health disparities from economic burden of diabetes in middle income countries: Evidence from Mexico. *Plos One 8 (7),* e68443. doi:10.1371/journal.pone.0068443

Asif, M. (2014). The prevention and control the Type-2 diabetes by changing lifestyle and dietary pattern. *Journal of Education and Health Promotion, 3*(1). doi:10.4103/2277-9531.127541.

Atkins, R., Vernon, M., & Eberstein, M. (2004). *The ground breaking approach to preventing and controlling Type 2 diabetes* (1st ed.). New York, NY: Harper Collins.

Bajwa, S, Sehgal, V, Kalra, S, & Baruah, M. (2014). Management of diabetes mellitus Type 2 in the geriatric population: Current perspectives. *Journal of Pharmaceutical and Biological Science, 6*, 151-157. Retrieved from http://www.jpbsonline.org/text.asp?2014/6/3/151/130956

Bandura, A. (1994). Self -Efficacy. In *Encyclopedia of Human Behavior* (471-81). New York: Academic Press.

Baumann, A., Schroder, S., & Fink, A. (2015). How social inequalities impact the course of treatment and care for patients with Type 2 diabetes mellitus: study protocol for a qualitative cross-sectional study from the patients perspective. *British Medical Journal* 5(7). doi:10.1136/bmjopen-2015-008670

Beckles, G., Zhu, J., & Moonesinghe, R. (2011). Diabetes - United States 2004 and 2008. *Center for Disease Control and Prevention*, *60*(1), 90-93. Retrieved from www.cdc,gov/mmwr/preview/mmwrhtml/su6001a20htl

Bell, R., Camacho, F., Duren-Winfield, V., Bonds, D., Anderson, R., & Konen, J., et al. (2005). Improving diabetes care among low-income North Carolinians. *North Carolina Medical Journal*, *66*(2). Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/15952458

Beverly, E. A., Ritholz, M. D., Brooks, K. M., Hultgren, B. A., Lee, Y., Abrahamson, M. J., & Weigner, K. (2012). A qualitative study of perceived responsibility and self-blame in Type 2 diabetes: Reflections of physicians and patients. *Journal of General Internal Medicine*, *27*(9), 1180-1187. http://dx.doi.org/10.1007/s11606-012-2070-0

Bird, Y., Lemstra, M., & Moraros, J. (2015). The relationship between socioeconomic status/ income and prevalence of diabetes and associated conditions: A cross sectional population based study in Saskatchewan, Canada. *International Journal of Equity Health, 14*:93, doi: 10.1186/S12939-015-0237-0

Blackburn, D., Swidrovich, J., Lemstra, M. (2013). Non-adherence in Type 2 diabetes: Practical considerations for interpreting the literature. *Patient Preference Adherence,* 7, 183-189, doi:10.2147/PPA.S30613

Brandtstädter J., Rothermund K. (2002). The life-course dynamics of goal pursuit and goal adjustment: a two-process framework. *Developmental. Review.* 22: 117–150. doi:10.1006/drev.2001.0539

Breland, J., McAndrew, L., Gross, R., Leventhal, H., & Horowitz, C. (2013). Challenges to healthy eating for people with diabetes in low income minority neighborhood. *Diabetes Care, 36.* doi:10.2337/dc12-1632

Brick, J., & Saudek, C. (2009). The clinical use of Hemoglobin A1C. *Journal of Diabetes Science and Technology*, *3*(4), 629-634. Retrieved from www.ncbi.nlm.n.h.gov/pmc/articles/PMC2769940/

Brill, M. (2008). *Diabetes*. Minneapolis, MN: Twenty First Century Books.

Brown, D. S., & McBride, T. D. (2015). Impact of the Affordable Care Act on access to care for US Adults with diabetes, 2011-2012. *Center for Disease Control Public Health Research, Practice and Policy, 12,* E64. doi:10.5888/pcd12.140431

Brown, H., Wilson, K., Pagan, J., Arcari, C., Martinez, K., Kirk, S., & Reininger, B. (2012). Cost-effectiveness analysis of a community health worker intervention for low income Hispanics with diabetes. *Public Health Research Practice and Policy: Center for Disease Control*. Retrieved from www.ncbi.nlm.nih.gov/pmc/articles/PMC3475531/

Candrilli, S., Meyers, J., Boye, K., & Bae, J. (2014). Healthcare utilization and cost during episodes of care for Type 2 diabetes mellitus-related comorbidities. *Journal of Diabetes and its Complications, 29,* 529-533. doi:10.1016/j.jdiacomp. 2014.12.009

Caspersen, C., Thomas, G., Boseman, L., Beckels, G., & Albright, A. (2012). Aging and the public health system in the United States. *American Journal of Public Health, 102*(8), 1482-1497. doi:10.2105/AJPH'2011.300616

Centers for Disease Control and Prevention. (2012). *Diabetes report card 2012*. Retrieved from www.cdc.gov/diabetes/pubs/pdf/DiabetesReportCard.pdf

Centers for Disease Control and Prevention. (2014a). *National Statistic Report, 2014.* Retrieved from www.cdc.gov/diabetes

Centers for Disease Control and Prevention. (2014b). *Relationships of income and healthcare coverage to receipt of recommended clinical preventive services by adults- United States, 2011-2012*. Retrieved from www.cdc,gov.mmwr/preview/mmwrhtml/mm6331a2.htm

Centers for Disease Control and Prevention and Prevention. (2015). Diabetes report card 2014 Retrieved from https://www.cdc.gov/diabetes/pdfs/library/diabetesreportcard2014.pdf

Centers for Disease Control and Prevention (2016). *The National Diabetes Education Program*. Retrieved from www.cdc.gov/diabetes/ndep/

Cheng, E., & Kindig, D. (2012). Disparities in premature mortality between high- and low-income U.S counties. *Preventing Chronic Disease, 9*, 110-120. doi:10.5888/pcd9.110120

Chesla, C., Chun, K., & Kwan, C. (2009). Cultural and family challenges to managing Type 2 diabetes in immigrant Chinese Americans. *Diabetes Care*, *32*(10), 1812-1816. Retrieved from www.ncbi,nlm.gov/pmc/articles/PMC2752925

Chiniwala, N., & Jabbour, S. (2011). Management of diabetes mellitus in the elderly. *National Institute of Health, 18*(2), 148-152. doi:10.1097/MED.0b013e3283444ba0

Clarke, M., & Utz, S. (2014). Social determinants of Type 2 diabetes and health in the United States. *World Journal of Diabetes, 15*(3), 296-304. doi:10.42939/wjd.v5.13.296

Cleary, M., Horsefall, J., & Hayer, M., (2014). Data collection and sampling in qualitative research: Does size matter? *Journal of Advance Nursing, 70*, 473-475. doi:10.1111/jan.12163

Colberg, S., Sigal, R., Yardley, J., Riddell, M., Dunstan, D., Dempsey, P., . . . Tate, D. (2016). Physical activity/ exercise and diabetes: A position statement of the American diabetes Association. *Diabetes Care,* 39(11): 2065-2079.

Coates, V. (2011). Research and diabetes nursing. Part 4: Qualitative design. Journal of diabetes nursing, 15(4). Retrieved from www.thejournalofdiabetesnursing.co.uk/media/content…/pdf/jdn15-3pg1137.pdf

Comino, E., Harris, M., Islam, F., Tran, D., Jalaludin, B., Jorm, L., . . . Haas, M. (2015). Impact of Diabetes on hospital admission and length of stay among a general population age 45 years or more: a record linkage study. *Bio-Med Central Health Services Research*, 15(12). doi:10.1186/s12913-014-0666-2

The Commonwealth Fund. (2013). *Healthcare in the two Americas: Findings from the scorecard on state health system performance for low income population, 2013*. Retrieved from http://datacenter.commonwealthfund.org/#.ind=600/sc=47

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications. Inc

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods*

approaches (4th ed.). Thousand Oaks, CA: Sage Publications.

Dall, T. M., Narayan, K. M. V., Gillespie, K. B., Gallo, P. D., Blanchard, T. D., Solcan, M., . . . Quick, W. W. (2014). Detecting Type 2 diabetes and prediabetes among asymptomatic adults in the United States: Modeling American diabetes association versus US preventive services task force diabetes screening guidelines. *Population Health Metrics, 1*2(1), 1-14, doi:10.1186/1478-7954-1212.

Dalsgaard, E.M., Skriver, M.V, Sandbaek, A., & Vestgaard. M. (2015). Socio-economic position Type 2 diabetes and long-term risk of death. *Plos One*, *10*(5): e0124829. doi:10.1371/journal.pone.0124829

Doody, O., & Doody, C. (2015). Conducting a pilot study: case study of a novice researcher. *British Journal of Nursing, 24*(21): 1078-1088, doi:10.12968/bjon.2015.24.21.1074.

Elissen, A., Nolte, E., Knai,C., Brunn, M., Chevreul, K., Conklin, A., . . .Vrijhoef, H (2013). Is Europe putting theory into practice? A Qualitative study of the level of self-management support in chronic care management approaches. *BioMed Central Health Services Research*, 13(113), doi:10.1186/1472-6963

Elo, S., Kaariainen, M., Kanste, O., Polkki, T., Utriainen, K, & Kyngas, H. (2014). Qualitative content analysis: a Focus on trustworthiness. *Sage Open* 1(10). doi:10.1177/2158244014522633

Emmel, N. (2013). *Sampling and choosing cases in qualitative research; A realist approach edition* (1st ed),). London, UK: Sage Publications

Evert, A., Boucher, J., Franz, M., Mayer-Davis, E., Neumiller, J., Nwankwo, R. . . .

Yancy, W. S. (2014). Nutrition Therapy Recommendation for Management of Adult with DM. *Diabetes Care, 37,* S120-S143. doi:10.2337/dc14-120

Fisher-Hock, S.P., Vatcheva, K.P., Rahbar, M.H., & Mccormick, J.B. (2015). Undiagnosed diabetes and pre diabetes in health disparities. *Plos One, 10*(7). doi:10.1371/journal.pone.0133135. eCollection 2015.

Fonesca, V., Kirkman, S., Darsow, T., & Ratner, R. (2012). The American diabetes Association Research Perspective (2012). *Diabetes Care, 35*(6). doi:10. 2337/dc12-900

Frankfort-Nachimas, C., & Nachimas, D. (2008). *Research methods in the social science* (7thed.). New York: Worth Publications

Florkowski, C. (2013). HbA1c as a diagnostic test for diabetes mellitus-reviewing the evidence. *Clinical Biochemist Reviews*, *34*(2): 75-83 Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3799221/

Francis, D. (2012, September 13). Where do you fall in the American economic class systems? *U.S. News and World Report*. Retrieved from http://www.usnews.com

Fukunaga, L., Uehara, D., Tom, T (2011). Perception of diabetes, barriers to disease management, and service needs: A focus group study of working adults with diabetes in Hawaii. *Preventing Chronic Disease,* 8(2): A32. Retrieved from http://www.cdc.gov/pcd/issues/2011/mar/090223 html

Garcia-Dominic, O., Lengerich, E. J., Camacho, F., Bogdan, G., Weinberg, G., & Ulbrecht, J. S. (2014). Prevalence of diabetes and associated obesity in Pennsylvania adults 1995-2010. *Preventing Chronic Diseases, 11*(E111)

doi:10.5888/pcd111.130.330

Grzywacz, J., Arcury, T., Ip, E., Nguyen, H., Saldana, S., & Reynolds, T., . . . , S. A. (2013). “Culture” in diabetes-related belief among low and high education African American, American Indian, and White. *Ethnicity and Disease, 22*(4), 466-472. Retrieved from www.ncbi.nlm.nih.gov/pmc/articles/PMC3510461

Haas, L., Maryniuk, M., Beck, J., Cox, C., Duker, P., Edwards, L. . . . Youssef, G. (2013). National standards for diabetes self-management education and support. *Diabetes Care, 36*(S1). doi:10.2337/dc13-s100

Hageman, J. H., & Frederick, C. (2013). Phenomenological and evidence based research in ego state therapy: recognized and unrecognized successes and future directions. *American Journal of Clinical Hypnosis, 56*(1) 66-85. Retrieved from www.ncbi.nlm.nih.gov/pubmed/?term=Hageman+and+Frederick%2C+2013

Hallgren, E., McElfish, P., & Rubon-Chutaro, J. (2014). Barriers and opportunities: A community based participatory research study of health beliefs related to diabetes in a US Marshallese community. *Diabetes Education, 41*(1); 88-94. doi:10.1177/0145721714559131

Hanson, M. A., Gluckman, P. D., Ma, R. C., Matzen, P., & Biesma, R. G. (2012). Early life opportunities for prevention of diabetes in low and middle income countries. *BioMed Central.com, 12*(1025). Retrieved from http://www.biomedcentral.com/1471-2458/12/1025

Harvey, I. S., Sherman, L., Spears, E., Ford, C., & Green, H. D. (2017). Social support and diabetes self-management behavior among Caribbean, Caribbean American

and African American women: a descriptive correlation study. *Journal of Social Health and Diabetes, 5*:16-24. doi:10.4103/2321-0656.193994

Healthy People 2020 (2014a). *Older adults.* Retrieved from https://www.healthypeople.gov/2020.topics-objectives/topic/older-adults

Healthy People 2020 (2014b). Access to Health Services. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/Access-to-Health-Services

Healthy People 2020 (2014c). *Diabetes.* Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/diabetes

Heisler, M. (2007). *Diabetes prevention and management: The challenge of cultural differences*. Retrieved January 27th, 2016, from http://www.medscape.org/viewarticle/540922

Herman, W. H. (2013). The economic cost of diabetes. Is it time for a new treatment paradigm? *Diabetes Care, 36*(4) 775- 776. doi:10.2337/dc13-0270

Hill, J., Nielsen, M., & Fox, M. (2013). Understanding the social factors that contribute to diabetes: a means to informing healthcare and social policies for the chronically ill. *The Permanente Journal, 17*(2), 67-72. doi:10.7812/TPP/12-099

Houghton, C.E., Casey, D., Shaw, D., & Murphy, K. (2013). Rigor in qualitative case study research. *Nurse Researcher, 20*(4), 12-17. doi:10.7748/nr2013.03.20.4.12.e326

Hu, J., Amirehsani, K., Wallace, D., & Letvak, S. (2013). Perceptions of barriers in managing diabetes: perspectives of Hispanic immigrant patient and family

member. *Health and Human Services Public Access*, *39*(4), 494-503. doi:10.1177/0145721713486200

Huckfeldt, P., Meeker, D., Peters, A., Guterman, J., Diaz, G., & Goldman, D. (2012). Diabetes management for low-income patients in Los Angeles: Two strategies improved disease control in the short term. *Health and Human Services Public Access*, *31*(1). doi:10.1377/hlthaff.2011.0930

Janesick, V. J. (2011) *"Stretching" exercises for qualitative research* (3rd ed.). Thousand Oaks CA: Sage Publications.

Janz, N., & Becker, M. (1984). The health belief model: A decade later. *Nursing, Health and Nutrition Journal*, *11*(1). doi:10.1177/109019818401100101

Kazemi-Galougahi, M. H., Ghaziani, H. N., Ardebili, H.E., & Mahmoudi, M. (2012). Quality of life in Type 2 diabetic patients and related effective factors. *Indian Journal of Medical Sciences*, *66*(9), 230-237. doi:10.4103/0019-5359.115216

Kadirvelu, A., Sadasivan, S., & Ng, S. H (2012). Social support in Type II diabetes care: a case of too little, too late. *Diabetes, Metabolic Syndrome and Obesity: Targets and Therapy*, *5*, 407-417. doi:10.2147/DMSO.S37183

Kirk, J., Ebert, C., Gamble, G., & Ebert, C (2013). Social support strategies in adult patients with diabetes. *Expert Review of Endocrinology and Metabolism* 8(4), 378-389. doi:10.1586/17446651.2013.811895

Kirkman, M. S., Jones Briscoe, V., Clark, N., Florez, H., Haas, L. B., Halter, J. B., Huang, E.S., . . . Swift, C. S.(2012). Diabetes in older adults. *Diabetes Care, 35*(12) 2650-2664. doi:10.2337/dc12-1801

Kirtland, K., Zack, M., & Caspersen, C. (2012). *State-specific synthetic estimates of health status groups among inactive older adults with self-reported diabetes, 2000-2009*. Retrieved from www.cdc.gov/pcd/issues/2012/11_0221.htm

Klinke, M. E., Thorsteinsson, B., & Jónsdóttir, H. (2014). Advancing phenomenological research applications of "body schema," "body image," and "affordances" in Neglect. *Qualitative Health Research, 24*(6), 824-836. doi:10.1177/1049732314533425

Ku, G. & Kegis, G (2015). Adapting chronic care model for diabetes care delivery in low-and middle-income countries: *A Review World Journal of Diabetes 6*(4): 566-575. doi:10.4239/wjd.v6.i4.566

Kuth, D., Karunananthan, S., Bergman, H., & Cooper, R. (2014). A life-course approach to healthy ageing: Maintaining physical capability. *Proceedings of the Nutrion Society Journal.* doi:10.1017/S0029655113003923

Kwan, C., Chun, K., Huang, P., & Chesla, C. (2013). Concerns about professional Chinese medicine among Chinese immigrants with Type 2 diabetes. *Diabetes Spectrum*, *26*(4). Retrieved from www.spectrum.diabetesjournal.org/content/26/4/247.full.pdf

Lagasse, B. (2013). Pilot and feasibility studies: Application in music therapy research. Journal of Music Therapy 50(4): 304-320. Doi:10.1093/jmt/50.4.304-20

Learmonth, Y., & Motl, R (2017). Important consideration for feasibility studies in physical activity research involving persons with multiple sclerosis: A scoping systematic review and case study. Pilot Feasibility Study 4:1.doi:10.1186/s40814-

017-01458. eCollection 2018

Lee, T, Y., Landy, C. K., Wahoush, O., Khanlou, N., Liu, Y. C., & Li, C. C. (2014). A descriptive phenomenology study of newcomers' experience of maternity care services: Chinese women perspectives. *BMC Health Services Research, 14*(1). 14-114. doi:10.1186/1472-6963-14-114

Liao, P., Chang, H., & Sun, L. C. (2012). National health program and life satisfaction of the elderly. *Aging and Mental Health, 16(*8), 983-994. doi:10.1080/13607863.2012.692765

Lim, J., Lynn Ng, N., & Thomas, C. (2017). Prevention and treatment of diabetic foot ulcers. *Journal of the Royal Society of Medicine* 110(3), 104-109. doi:10.1177/0141076816688346

Logan, H., Guo, Y., Dodd, V.J, Mullert, K., (2013). The burden of chronic disease in rural North Florida sample 2013. BioMed Central Public Health 13(906). doi:10.1186/1471-2458-13-906

Mahon, S., & Taylor-Powell, E. (2007). Case study of capacity building for smoke-free indoor air in two rural Wisconsin communities. Europe PubMed Central 4(4) A104. Retrieved from, www.medscape.com/medline/abstract/17875248

Mallow, J., Theeke, L., Whetsel, T., & Barnes, E. (2013). Diabetes group medical visits and outcomes of care in low-income, rural, uninsured persons. *HHS Public Access*, 3(3), 314-322. doi:10.4236/ojn.2013.33043

Matricciani, L., & Jones, S. (2014). Who cares about foot care? Barriers and enablers of foot self-care practices among non-institutionalized older adults diagnosed with

diabetes. The diabetes Educator 41(1). doi;10.1177/0145721714560441

Mayo Clinic. (2015). *Diabetic Neuropathy*. Retrieved from www.mayoclinic.org

Mcall, D., Sauaia, A., Hamman, R., Reusch, J., & Barton, P. (2004). *Are low-income patients at risk for poor diabetes care*? Retrieved from www.ncbi.nlm.nih.gov

McKinlay, J., Piccolo, R., & Marceau, L. (2012). An additional cause of health care disparities: The variable clinical decision of primary care doctors. *Journal of Evaluation in Clinical Practice*, *19,* 663-673. doi:10.1111/jep.12015

Meetoo, D. (2014). Diabetes: Complications and the economic burden. *British Journal of Healthcare Management* 20(2). doi:10.12968/bjhc.2014.20.260

Menke, A., Casagrande, S., Geiss, L., & Cowie, C. (2015). Prevalence of and trends in diabetes among adults in the United States. *Journal of the America Medical Association*, *314*(10), 1021 - 1029. doi:10.1001/jama.2015.10029

Mishra, S., Gioia, D., Childress, S., Barnet, B., & Webster, R. (2011). Adherence to medication regimens among low income patients with multiple comorbid chronic conditions. *Health and Human Services, 36*(4), 249-258. doi:10.1093/hsw/36.4.249

Moghissi, E. (2013). Management of Type 2 diabetes mellitus in older patients: Current and emerging treatment options. *Diabetes Therapy* 4(2): 239-256. doi:10.1007/s13300-013-0039-6

Mogre, V., Johnson, N., Tzelepis, F., Shaw, J., & Paul, C. (2017). Adherence to self-care behaviours and associated in Type 2 diabetes patients of low-and middle-income countries: A systemic review protocol. *Systematic Reviews, 6*(39).

doi:10.1186/s13643-017-0436-4.

Munshi, K., Shih, Y., Brown, L., Dagogo-Jack, S., Wan, J., & Wang, J. (2013). Disparity implications of the Medicare MTM eligibility criteria: A literature review. *Expert Rev Pharmacoecon Outcomes Research, 13*(2): 201-216. doi:10.1586/erp.13.6

Nassar Al-Dossary, R, & Panagiota, K. (2014). The impact of diabetes nurse case management on hemoglobin A1C (HgbAic) and self-efficacy of patients with Type 2 diabetes: A systemic review. *Journal of Clinical Research and Governance. 3*(1), 9-15. doi:10.13183/jcrg.v3il.69

Nathan, D. M., Buse, J. B., Davidson,m. B., Ferrannini, E., Holman, R.R., Robert, S., Zinman, B. (2009). Medical management of hyperglycemia in type 2 diabetes: A consensus algorithm for the initiation and adjustment of therapy. *Diabetes Care. 32(1):*193-203. doi:10.2337/dc08-9025

The National Bureau of Economic Research. (2001). *The financial problem of the elderly: A holistic approach*. Retrieved from www.nber,org/papers/w8236

National Institute of Diabetes and Digestive and Kidney Disease. (2014). *Take care of your feet for a life time*. Retrieved from https://www.niddk.nih.gov/-/media/4ADA36507AD94759BA05E15986328A6D.ashx

National Service Framework for Diabetes Standards. (2001). *Diabetes*. Retrieved from www.gov.uknational_service_framework

Nelson, K., Reiber, G., & Boyko, E. (2002). Diet and exercise among adults with Type 2 diabetes. *Diabetes Care, 25*(10), 1722-1728. doi:10.2337/diacare.25.10.1722

Newman, I, Benz, C. R (1998). Qualitative-quantitative research methodology. Exploring

the interactive continuum. Carbondale: Southern Illinois University Press

Niedzwiedz, C.L., Katikireddi, S. V., Pell, J. P., & Mitchell, R. (2012). Life course socio-economic position and quality of life in adulthood: A systemic review of life course model. BioMed Central Public Health. 12: 628. doi:10.1186/1471-2458-12-628

Ofori, S., & Unachukwu, C. (2014). Holistic approach to prevention and management of Type 2 diabetes mellitus in a family setting. *DovePress: Open Access to Scientific and Medical Research*, *7*, 159-168. doi:10.2147/DMSO.S62320

Olokoba, A. B., Obateru, O. A., & Olokoba, L. B. (2012). Type 2 diabetes mellitus: a review of current trends. Oman Medical Journal, 27(4): 269-273. doi:10.5001/omj.2012.68

Orji, R., Vassileva, J., & Mandryk, R. (2012). Towards an effective health interventions design: An extension of the health belief model. *Online Journal of Public Health Informatics*, 4(3). Doi:10.5210/oiphi.v413.4321

Ounnapiruk, L., Wirojratana, V., Meehatchai, N., & Turale, S. (2014). Effectiveness of a behavior modification program for older people with uncontrolled Type 2 diabetes. *Nursing and Health Science*, *16,* 216-223. doi:10.1111/nhs.12089

Palinkas, L. A., Horwitz, S. M., Green, C. A., Wisdom, J. P., Duan, N., & Hoagwood, K (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health*, *42*(5), 533-544. doi:10.1007/s10488-013-05289

Palis, A.G., & Quiros, P.A, (2014). Adult learning principles and presentation pearls.

Middle East African Journal of Ophthalmology, *21*(2): 114-22. doi; 10.4103/0974-9233923

Pannucci, C. J., Wilkins, E. G. (2010) Identifying and avoiding bias in research. *Plastic and Reconstructive Surgery*, 126(2), 619-25. doi:10.1097/PRS.0b013e3181de24bc

Pathak, V., Jena, B., Kalra, S. (2013). Qualitative research. *Perspectives in Clinical Research, 4*(3), 192. doi:10.4103/2229-3485.115389

Patterson, E. (1998). The philosophy and physics of holistic care: spiritual healing as a workable interpretation. *Journal of Advanced Nursing*, *27*(2). doi:10.1046/j.1365-2648.1998.00533

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks CA: Sage Publications.

Perez-Escammilla, R., & Putnik, P. (2007). The role of acculturation in nutrition, lifestyle and incidence of Type 2 diabetes among Latinos. *The Journal of Nutrition, 137*(4), 860 - 870. Retrieved from http://jn.nutrition.org/content/137/4/860.full

Pezalla, A., Pettigrew, J., & Miller-Day, M. (2012). Researching the researcher-as-an instrument: An exercise in interviewer self-reflexivity. *Qualitative Research Journal, 12*(2). 165-185. doi:10.1177/1487941111422107

Powers, M., Bardsley, J., Cypress, M., Duker, P., Funnell, M., Fischl, A., Maryniuk, M., Siminerio,L., & Vivian, E. (2015). Diabetes Self-management Education and Support in Type 2 Diabetes: A Joint Position Statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy

of Nutrition and Dietetics. *Diabetes Care 38*(7), 1372-1382. doi:10: 2337/dc15-0730

Prince, M., Wu, F., Guo,Y., Robledo, L., O'Donnell, M., Sullivan, R., and Yusef, S. (2015). The burdens of disease in older people and implications for health policy and practice. *Lancet* 385(9967), 549-562. doi:10.1016/s0140-6736(14)61347-1

Rabi, D., Edwards, A., Southern, D., Svenson, L., Sargious, P., & Larsen, E. et al. (2006). Association of socioeconomic status with diabetes prevalence and utilization of diabetes care services. *Bio Med Central: Health Services Research, 6*(124). doi:10.1186/1472-6963-6-124

Ramkisson, S., Pillay, B. J., & Sibanda, W. (2017). Social support and coping in adults with Type 2 diabetes. *African Journal of Primary Healthcare and Family Medicine*, 9(1), 1405. doi:10.4102/phcfm.v9il.1405

Reisi, M., Mostafavi, F., Javadzade, H., Mahaki, B., Tavassoli, E., & Sharifirad, G. (2016). Impact of Health Literacy, self-efficacy, and outcome expectations on adherence to self-care behaviors in Iranians with Type 2 diabetes. *Oman Medical Journal,* 31(1), 52-59. doi:10.5001/omj.2016.10

Ricci-Cabello, I., Ruiz-Perez, I., Nevot-Cordero, A., Roderiquez-Barranco, M., Sordo, L., & Goncalves, D (2013). Healthcare interventions to improve the quality of diabetes care in African Americans. Diabetes Cares 36(3), 760-766. doi:10.2337/dc12-1057

Rich, P., Shafer, C., Parkins, C., & Edelman, S. (2013). Using Quantitative Measure of Diabetes Risk in Clinical Practice to Target and Maximize Diabetes Prevention

Intervention. *Clinical Diabetes, 31*(2), 82-89. doi:10.2337/diaclin. 31.2.82

Rigby, M., Hill, P., Koch, S., & Keeling, D. (2011). Social care informatics as an essential part of holistic healthcare: A call for action. International Journal of Medical Informatics, 80(8), 544-554. doi:10.1016/j.ijmedinf.2011.06.001

Rosland,A., Piette, J., Courtney, R., Parker, M., Moffett, H., Adler, N., Shillinger, D., & Karter, A. (2014). Social support and lifestyle vs medical diabetes self-management in the diabetes study of Northern California (Distance). *Annals of Behavioral Medicine,* 48: 438-447,doi:10.1007/s12160-014-9623-x

Rudestam, K. E., & Newton, R. R. (2015). Surviving your dissertation: a comprehensive guide to content and process. (4th ed.). Thousand Oaks, CA: Sage Publications.

Ryan, J., Fedders, M., Jennings, T., Vittoria, I., & Yanes, M. (2014). Clinical outcomes and incremental costs from a medication adherence pilot intervention targeting low-income patients with diabetes at risk of cost related medication nonadherence. *Clinical Therapeutics*, *36*(12), 1991-2002. doi:10.1016/j.clinthera.2014-09-001.Epub2014.09.001

Sanjari, M., Bahramnezhad, F., Fomani, F., Shoghi, M., & Cheraghi, M. (2014). Ethical challenges of researchers in qualitative studies: The necessity to develop a specific guideline. *Journal of Medical Ethics and History of Medicine, 7*(14). Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4263394/

Schofield, D., Cunich, M., Kelly, S., Passey, M. E., Shrestha, R., Callander, E., . . . Veerman, L. (2015). The impact of diabetes on the labor force participation, savings and retirement income of workers aged 45-64 years in Australia. *Plos*

ONE, 10(2), e0116860. doi:10.1371/journal.pone.0116860

Selvin, E., Parrinello, C., Sacks, D., & Coresh, J. (2014). Trends in prevalence and control of diabetes in the U.S., 1988-1994 and 1999-2010. *Health and Human Services Public Access, 160*(8), 517-525. doi:10.7326/M13-2411

Seuring, T., Archangelidi, O., & Suhrcke, M. (2015). The Economic Cost of Type 2 Diabetes: A Global Systemic review. *Pharmacoeconomics, 33*(8), 811-831. doi:10.1007/s40273-015-0268-9

Shao, Y., Liang,L., Shi,L., Wan, C., & Yu, S. (2017). The effect of social support on glycemic control in patients with type 2 diabetes mellitus: The mediating roles of self-efficacy and adherence. *Journal of Diabetes Research*. 2017 (2017). doi:10.1155/2017/2804178

Sherwin, R., & Jastreboff, A.M. (2012). Year in diabetes 2012: The diabetes tsunami. *Journal of Clinical Endocrionology and Metabolism, 97*(12), 4293-430. doi:10.1210/jc.2012-3487

Siddique, M. K. B., Islam S. M. S., Banik, P. C., & Rawal, L. B., (2017). Diabetes knowledge and utilization of healthcare services among patients with Type 2 diabetes mellitus in Dhaka, Bangladesh. *BioMed Central Health Services Research, 1*, 586. doi:10.1186/s12913-017-2542-3

Shosha, G. A. (2012). Employment of Colaizzi's strategy in descriptive phenomenology: A reflection of a researcher. *European Scientific Journal, 8*(27). Retrieved from http://eujournal.org/index.php/esj/article/view/588

Shrivastava, S. R., Shrivastava, P.S., & Ramasamy, J. (2013). Role of self-care in

management of diabetes mellitus. *Journal of Diabetes and Metabolic Disorder,* 12:14. doi:10.1186/2251-6581-12-14

Singleton Jr., R. A., & Straits, B. C. (2005). *Approaches to social research* (4th ed.). New York, NY: Oxford University Press.

Starks, H., & Trinidad, S. (2007). Choose your method: A comparison of phenomenology, discourse analysis, and grounded theory. *Qualitative Health Research, 17*(10), 1372-1380. doi:10. 1177/1049732307307031

Stellefson, M., Dipnarine, K., & Stopka, C. (2013). The chronic care model and diabetes management in US primary care setting to provide care for people who have diabetes. *Center for Disease Control and Prevention, 10*(120180). Retrieved from www.cdc.gov/pdc/issues/2013/12_0180htm

Sutton, J., & Austin, Z. (2015). Qualitative research data collection, analysis, and management. *Canadian Journal of Hospital Pharmacy, 68*(3): 226- 231 Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4485510/

Swinnen, S. G. H. A., Mullins, P., Miller, M., Hoekstra, J. B. C., & Hollerman, F.(2009). Changing the glucose cut-off values that define hypoglycaemia has a major effect on reported frequencies of hypoglycaemia. *Diabetologia,* 52:38.doi:10.1007/s00125-008-11470-0

Sydney Holistic Dental Center. (2015). *The Western medical model and holistic approach.* Retrieved from www.shdc.comau/western-medicalmodel-a-holistic-approach/

Szabo, S. M., Osenenko, K. M., Qatami, L.,Korenblat Donato, B. M., Korol, E. E., Al

Madani, A. A., . . . Levy, A.R. (2015). Quality of care for patients with Type 2 diabetes mellitus in Dubai: A Hedish-like assessment. *International Journal of Endocrinology,* 2015(2015). doi:10.1155/2015/413276

Taylor, C. G., Krimholtz, M., Belgrave, K. C., Hambleton, I., George, C. N., & Rayman, G. (2014). Clinical Practice. The extensive inpatient burden of diabetes and diabetes related foot disease in Barbados. Clinical Medicine, 14(4), 367-370. doi:10.7861/clinmedicine.14-4-367

Teherani, A., Martimianakis, T., Stenfors-Hayes, T., Wadhwa, A., & Varpio, L. (2015). Choosing a qualitative research approach. *Journal of Graduate Medical Education 7*(4), 699-670. Doi:10.4300/JGME-D-15-00414.1

Thole, V., & Lobmann, R. (2016). Neuropathy and diabetic foot syndrome. *Internal Journal of Molecular Science* 17(6). doi:10. 3390/ijms17060917

Tol, A., Sharifirad, G., Shojaezadeh, D., Tavasoli, E., & Azadbakht, L. (2013). Socio-economic factors and diabetes consequences among patients with Type 2 diabetes. *Journal of Education and Health Promotion,* 2(12). doi:10.4103/2277-9531.108009

Tomljenovic, T. (2014). Holistic approach to human health and disease: Life circumstances and inner processing. *Collegium Antropologium*, *38*(2), 787-792. Retrieved from http://www.ncbi.nlm.nih.gov

Trikkalinou, A., Papazafiropoulou, A. K., Melidonis, A. (2017). Type 2 diabetes and quality of life. *World Journal of Diabetes, 8*(4), 120-129. doi:10.4239/wjd.v8.i4.120

Tufford, L & Newman, P (2010). Bracketing in Qualitative Research. *Qualitative Social Work,* 11(1), 80-86. doi: 10:1177/1473325010368316

U.S. National Library of Medicine: Medline Plus (n.d.). *The relationship between diabetes and high blood pressure*. Retrieved from www.health line.com

Vyas, V. G. (2015). Comparison study of compliance with medication and foot care in Type 2 diabetic patients. *Journal of Diabetes and Metabolism* 6:593.doi:10.4172/2155-6156.1000593

Walker, R. J., Smalls, B. L., & Egede, L. E. (2015). Social determinants of health in adults with Type 2diabetes: Contribution of mutable and immutable factors. *Diabetes Research Clinical Practice, 110*(2), 193-201. doi:10.1016/j.diabres.2015.09.007

Wallace, J. (1999). Management of diabetes in the elderly. *Clinical Diabetes, 1*. Retrieved from http://journal.diabetes.org/clinical diabetes/v17n11999/Pg19.htm

Weinger, K., Beverly, E. A., & Smaldone, A. Diabetes self-care and the older adult (2014). Western Journal of Nursing research, 36(9), 1272- 1298. doi:10.1177/0193945914521696

White, R. O., Eden,S., Wallston, K. A., Kripalani, S., Barto, S., Shintani, A., & Rothman, R. L. (2015). Health communication, self-care and treatment satisfaction among low income diabetic patients in a public health setting. *Patient Education and Counseling*, 98(2): 144-149. doi:10.1016/j.pec.2014,10.019

Whitehead, A. L., Sully, B. G., & Campbell, M. J. (2014). Pilot and feasibility studies: Is there a difference from each other and from a randomized controlled trial?.

Contemporary Clinical Trials, 38(1), 130-133. doi:10.1016/j.cct.2014.04.001

Whiting, D., Guariguata, L., Weil, C., & Shaw, J. (2011). IDF diabetes atlas: Global estimates of the prevalence of diabetes for 2011 and 2030. *Elsevier*. .doi:10.1016/j.diabres.2011.10.029

Willens, D., Cripps, R., Wilson, A., Wolff, K., & Rothman, R. (2011). Interdisciplinary team care for diabetic patients by primary care physicians, advanced practice nurses and clinical pharmacists. *Clinical Diabetes, 29*(2), 60-68. doi:10.2337/diaclin.29.2.60

World Bank. (2014). *Population ages 65 and above (% of total*). Retrieved from www.dataworldbank.org

World Health Organization (2000). *The implication for training of embracing: A life course approach to health.* Retrieved from http://www.who.int/ageing/publications/lifecourse/alc_lifecourse_training_en.pdf

World Health Organization (n.d.). *Chronic disease and health promotion Part Two: The urgent need to action*. Retrieved from https://www.who.int/chp/chronic_disease_report/part2_ch2/en/

World Heart Federation. (2016). *Cholesterol*. Retrieved from www.world-heart-federation.org/cardiovascular-health/cardiovascular-disease-risk-factorYs/cholesterol

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). Thousand Oaks, CA: Sage Publications.

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Thousand Oaks,

CA: Sage Publications.

Zimmer, P (2016). Diabetes and its drivers: The largest epidemic in human history. *Clinical Diabetes and Endocrinology, 3*(1), doi:10.1186/s40842-016-0039-3

Zimmerman, K. (2015). *American culture: traditions and customs of the United States*. Retrieved from www.livescience.com/5568americanculture

Appendix A: Invitation Flyers for Participation in a Study

INVITATION FLYER FOR PARTICIPATION IN A STUDY

You are invited to participate in a study on Quality of Care and Levels of Income Among adults with Type 2 diabetes in Marion County, Florida- #04-24-170473486. This research study will examine how adults with type 2 diabetes self-manage the disease and the quality of care they receive based on their income. Ms. Lorna Bowen is a doctoral student at Walden University- College of Health Sciences, and is interested in gaining a detailed understanding of how people with type 2 diabetes manage the disease: and what is the quality of care they receive from an income perspective.

Please note that your participation is voluntary and you may decide to withdraw at any time.

You may qualify for this study if:

a) You are an adult (male or female) over 45 years of age and can provide valid identification of such (ex, driver's license).
b) You reside in Marion County, Florida for more than 1 year and have been diagnosed with type 2 diabetes for 1 year or more.
c) You read, write, and speak English.
d) You are willing to complete a short questionnaire, and participate in an interview to of about 45 minutes to share freely with the researcher your experience with care of your diabetes and how you self-manage the disease. The direct benefit to you is a $15.00 gift card. Also, sharing your experience of how you manage your diabetes and the care you receive may help to improve the quality of care and

expose you to contribute to the availability of new knowledge and scholarly information.

e) To learn more about this study and how you can participate, please contact Lorna Bowen by telephone at XXX-XXX-XXXX. Email: XXXXX@XXXXX.XXX.

Appendix B: Eligibility Screening Questionnaire

Participants must meet the following criteria in order to participate in the study.

Must be age 45 years and older.

Resides in Marion County for at least 1 year.

Diagnosed with T2DM more than 1 year.

Must be able to read, write and speak English well.

Should not have had any severe complications of diabetes (example, limb amputation or kidney disease).

Be able to travel to the interview venue and participate in a 45 minutes face-to-face interview, or, be engaged in a telephone interview for at least 45 minutes.

Be available to participate in a telephone interview at a date and time convenient to you.

. The following questions will be used to screen and qualify participants in a telephone screening call.

1. Please tell me your name, age and sex

2. How long have you lived in Marion County?

3. How long have you been diagnosed with T2DM?

4. Besides high blood sugar and low blood sugar, what other complications of diabetes have you had?

5. Do you read and write English fluently?

6. Do you understand questions asked in English?

7. Are you willing to participate in the study and share your experience of the care and self-management of your diabetes from an income perspective?

8. What kind of healthcare coverage do you have?

a. Medicare/Medicaid b. Private Insurance c. Other

9. What is the combined annual income in your household?

a. $23,000.00- $31,000 b. $32,000.00- $59,000.00 c. $60,000.00 and above

Will you agree to have the face-to-face interview audio recorded?

10. Are you willing to give your written consent to participate in the study?

Can you provide me with the best date and time to schedule your interview?

Acknowledgement Possible Ineligible Participants:

Thank you for allowing me to conduct a screening session with you for participation in this study. At this time you do not meet the study eligibility criteria based on the information you gave me, and therefore you cannot be considered for participation. Thank you for your interest in the study and your time.

Acknowledgement for Eligible Potential Participants:

Thank you for participating in the screening session for this study. Based on the information you gave me, you are eligible to participate in the study. The next step is to set up the date, time and venue that is convenient to you.

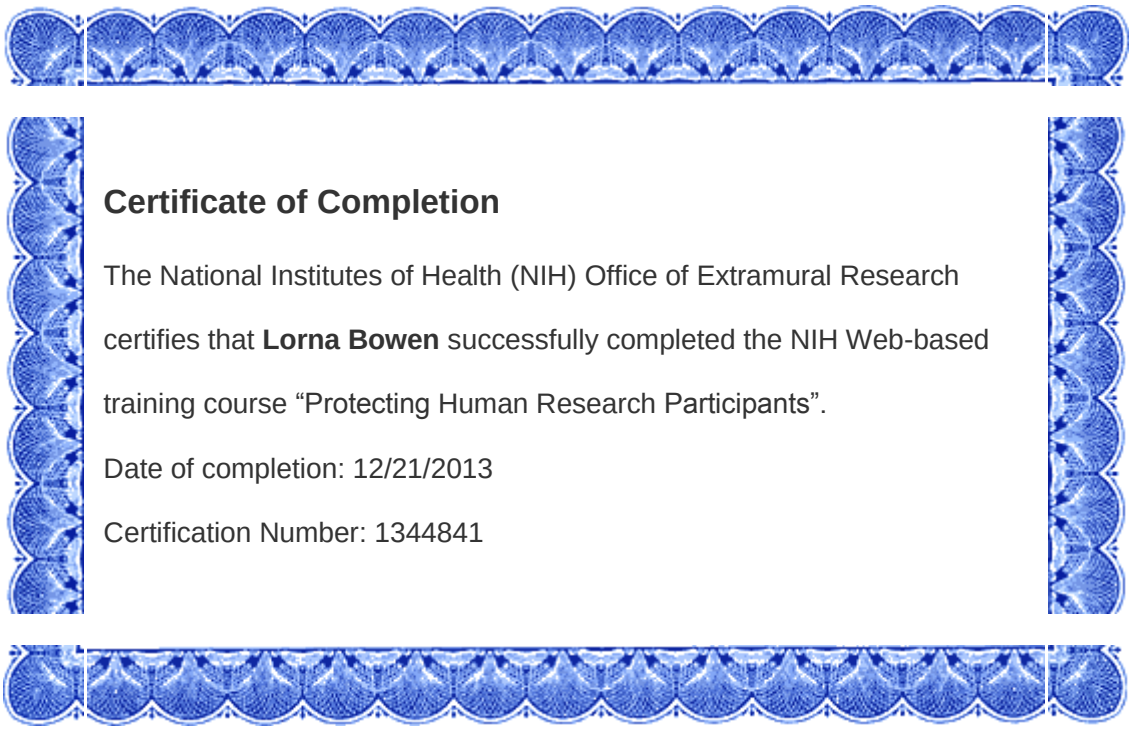
Do you have any questions at this time?

Can you give me a date and time that is convenient to you?

Date of Interview_____ Time_____

Thank you again for your interest in this study.

Appendix C: National Institute of Health Certification



Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **Lorna Bowen** successfully completed the NIH Web-based training course “Protecting Human Research Participants”.

Date of completion: 12/21/2013

Certification Number: 1344841

Appendix D: Interview Protocol and Questions

Quality of Care and Levels of Income: A Case Study of the Care of Adults with Type 2 Diabetes in Marion County, Florida

Introduction: My name is Lorna Bowen. I am a student at Walden University working on a Doctoral degree. I am doing a research study on The Quality of Care and Levels of Income: A Case Study of T2DM Adults in Marion County, Florida. My IRB approval number is___. The researcher will then complete the pertinent interview information below and give the participant a brief overview of the interview process

Date of interview:

Time of interview:

Location of interview:

Interviewer:

Participant pseudonym:

Study information for participants

The purpose of this study is to examine how adults like yourself with T2 diabetes manage the disease and the quality of care received based on income. Your answers will be written down on the sheet under the corresponding question, and with your permission signed in the informed consent, I will be audio recording this session. Later, the tapes will be transcribed and the information analyzed to become part of the study. This study could provide important information for healthcare professionals and policy makers in Marion County to develop new plans and strategies to further investigate how care is delivered.

The interview will take approximately 45 minutes, please feel free to ask questions as we go along. At this point if there are any questions the researcher will respond to them, and if none then we will proceed to the interview questions.

Interview Questions

1. What does T2DM means to you?
    a. Has your primary care provider provided you with adequate education to self-manage your diabetes?
2. What are your thoughts about quality of care and management of your diabetes by your primary care provider?
3. How do you take care of your eyes?
    a. When was the last time you had an eye exam where your pupils were dilated?
4. What do you think about when you hear the term Hgb A1C?
    a. When was the last time you had your Hgb A1C checked?
5. Who helps you to manage your diet?
    a. Tell me about your eating habits.
    b. What are your preferences for meal sand snacks?
6. Who supports you in managing your diabetes?
    a. What kind of support they provide?
7. Describe to me how well your diabetes is being managed by each of these support people, then by yourself?
8. What does quality of care mean to you?

9. Do you have access to quality healthcare? Describe to me. If not, why?
10. How does your diabetes affect your current lifestyle?
11. Describe to me how you are currently self-managing your diabetes.
    a. What is your routine for glucose testing at home?
    b. How do you care for your feet?
12. How many times per day/week do you exercise? Describe your exercise routine.
13. How does your level of experience with diabetes impact your self-care management?

Are there any other comments you would like to add about the care you receive for T2DM or how you self-manage the disease?

Appendix E: Relationship Between Research Questions and Interview Questions

Research Questions	Interview Questions
RQ 1: What are the experiences of adults with T2DM living in Marion County, Florida with the quality of healthcare provided and how does it affect their self-management of their disease?	1. What does T2DM mean to you? a. Has your primary care provider provided you with adequate education to self-manage your diabetes? 2. What are your thoughts about quality of care and management of your diabetes by your primary provider? 3. How do you take care of your eyes? a. When was the last time you had an eye exam where your pupils were dilated? 4. What do you think about when you hear the term Hgb A1C? a. When was the last time you had your Hgb A1C checked?

RQ 2: What are the experiences of adults with T2DM in different income brackets living in Marion County, Florida with access to and quality of care?	5. Who helps you to manage your diet? a. Tell me about your eating habits. b. What are your preferences for meals and snacks? 6. Who supports you in managing your diabetes? a. What kind of support do they provide? 7. Describe to me how well your diabetes is being managed by each of these support people, then by yourself? 8. What does quality of care mean to you? 9. Do you have access to quality healthcare? Describe to me. If not, why?
RQ 3: What is the perceived self-efficacy for adults with T2DM in Marion County, Florida?	10. How does your diabetes affect your current lifestyle?

	11. Describe to me how you are currently self-managing your diabetes? a. What is your routine for glucose testing at home? b. How do you care for your feet? 12. How many time per day/week do you exercise? Describe your exercise routine. 13. How does your level of experience with diabetes impact your self-care management?