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Diabetes Self-Management Education in the Urban Low Socioeconomic Status Senior Population

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Abstract

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MA, Drexel University, 2010

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Dissertation Submitted in Fulfillment

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Abstract

This exploratory quantitative study used a survey design to address a gap in the literature concerning primary care team perceptions about diabetes care for urban low socioeconomic status seniors with diabetes. Diabetes is a chronic health problem that is often managed in primary care offices, and primary care teams are often the first source of education and support for patients. Standards of management for seniors with diabetes has changed to eliminate tight control of glucose levels, and primary care team members may have differing perceptions about diabetes care depending upon their role in the primary care team and years of experience. The purpose of this study was to assess attitudes and perceptions among a group of primary care team members for urban low socioeconomic status seniors. Using constructs from the health belief model, the study considered two research questions addressing the relationships among care team member perceptions and beliefs about the need for special training, the seriousness of diabetes, the psychosocial impact of diabetes and patient autonomy and the role on the care team and if years of experience significantly related to primary care team members' perceptions of the value of tight control of glucose. The Diabetes Attitude Scale-3 was used to collect responses from 150 primary care team members. Results showed a correlation between years of experience and value of tight control. No significant relationship was observed between role on care team and perceptions of diabetes. This study contributes to health education and promotion by identifying gaps in diabetes knowledge in primary care teams and has the potential to advance positive social change by providing health educators with information to improve diabetes education programs.

Primary Care Teams Perceptions of Diabetes in Urban Low Socioeconomic Status Seniors

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Chapter 1: Introduction to the Study

Introduction

Diabetes is a progressive chronic disease that affects the whole body (DeFronzo, 2009). Type 2 diabetes is a condition where at least eight different body processes break down, leading to increased sugar in the bloodstream (DeFronzo, 2009). This increased sugar causes systemic organ damage that usually happens quietly and slowly over time. Patients often underestimate the health impacts of diabetes because they do not feel the small systemic changes occurring over time (American Diabetes Association [ADA], 2021). Diabetes requires daily management. Primary care teams are the first line supporters and educators for diabetes self-management and help with complex daily decisions to stabilize blood sugar (Al-Ali et al., 2020). They support their senior patients through diabetes progression and aging. Thus, primary care teams have an opportunity to impact clinical outcomes by offering quality diabetes self-management education programs that target the needs of the urban low socioeconomic status senior population.

The 2021 ADA Standards of Care for Geriatrics has stressed the recommendations for blood glucose control related to advanced age and comorbidities (ADA, 2021). However, the medication and lifestyle regimen required for tight blood sugar control provide little value to quality of life and longevity for seniors with comorbidities (ADA, 2021). Tight control means that the blood glucose range is strictly restricted to an average of 154 mg/dL, or hemoglobin A1C of 7%, using medications and lifestyle management (ADA, 2021). Hemoglobin A1C is a laboratory test that measures the percentage of sugar attached to blood's hemoglobin protein. Less control allows for a

blood glucose average of 212mg/dL, or hemoglobin A1C of 9%, while relying less on medications and medication regimen adherence, and less restrictions to lifestyle modifications that may be hard for seniors to maintain (ADA, 2021). One of the risks of tight blood glucose control is hypoglycemia. Hypoglycemic episodes can have severe health consequences, including hospitalization and death. Instead, the ADA (2021) has suggested avoidance of hypoglycemia and hyperglycemia instead of tight control. These new guidelines are different from the previous ADA guidelines and require changes in practice for primary care teams who care for geriatric patients with diabetes. In addition to changing their clinical practices, primary care teams also need to change the health education they provide so that patients can successfully manage their own care.

Only 51.7% of adults aged 18 years and older with diagnosed diabetes have ever received formal diabetes self-management education and support (Office of Disease Prevention and Health Promotion, 2020). Diabetes education and support needs to be offered throughout the disease progression to help patients manage and cope with age and disease related changes (Association of Diabetes Care and Education Specialists [ADCES], 2020). Age-related changes include decreased eyesight, decreased sensory perception, and decreased dexterity (ADA, 2021). The medical management of seniors with diabetes is more complicated because they often have multiple comorbid conditions that impact their management (Kalyani et al., 2017). They may have macrovascular complications such as acute myocardial infarction, stroke, and end-stage renal disease (Kalyani et al., 2017). Urban low socioeconomic status seniors may also struggle with food insecurity, access to care, and lack of social support (Bustill's & Sharkey, 2020).

These conditions may affect medication regimen adherence, diet plan adherence, and blood glucose monitoring adherence. Primary care teams are often the first source of education and support for patients (Al-Ali et al., 2020). Therefore, research about the care teams' perceptions of diabetes self-management for low socioeconomic status urban seniors can help the care teams understand the unique patients' needs. Understanding the perceptions of the primary care team can help to improve the team's ability to engage patients in diabetes education. Primary care providers can better serve their community by promoting health and education in a way that benefits the patients. This study was completed to better understand the perceptions of the primary care team about diabetes and urban low socioeconomic status seniors. Primary care teams are the primary source of diabetes education and support (ADCES, 2020). In addition, seniors often have special needs. Moreover, patients with diabetes have improved health outcomes after receiving diabetes education (ADCES, 2020). Thus, the positive social implications are better health outcomes for urban low socioeconomic status seniors.

This chapter includes background information on diabetes self-management education and the gap in knowledge surrounding the provider perspective. Chapter 1 also addresses the problem statement and purpose of studying diabetes self-management from the provider perspective. The research questions and hypotheses are described, the theoretical framework is discussed, and the nature of the study is outlined. In addition, key concepts are defined, and assumptions and scope and delimitations are stated. Finally, the limitations the significance of the study are presented.

Background

Over 34 million Americans have diabetes, and 26.8%, or 14 million, of that number are over the age of 65 (ADA, 2018). In response to these high rates, Healthy People 2030 has identified the need to reduce the burden of diabetes and improve the quality of life of those living with diabetes (Office of Disease Prevention and Health Promotion, 2019). Atlantic County, New Jersey, is identified as a community in need because it has the second highest diabetes prevalence in the state of New Jersey (New Jersey Department of Health, 2019). There are many seniors living in poverty, with the largest population located in the county's urban Atlantic City area. In Atlantic County, people over the age of 65 have a 7% poverty rate versus the state rate of 8.8%; however, the poverty rate for people over the age of 65 in Atlantic City is 24% (United States Census Bureau, 2019). Seniors are susceptible to other health conditions that can complicate the control of diabetes, including high blood pressure, high cholesterol, and obesity (Centers for Disease Control and Prevention, 2020). Moreover, seniors with comorbid conditions and barriers to optimal health can struggle with diabetes self-management skills. Urban low socioeconomic status seniors carry the burden of diabetes, which may affect their quality of life.

Seniors have special needs. For example, age-related health changes can affect the way seniors comprehend and manage chronic diseases (Saunders, 2019). Age-related health changes can also be barriers to diabetes self-management (Wu et al., 2019). Eyesight, dexterity, fine motor skills, social isolation, and neuropathy can inhibit a patient from effectuating skills they had previously mastered (Wu et al., 2019). These barriers

may cause patients to refrain from taking on diabetes self-management skills (Saunders, 2019). Seniors may feel competent with diabetes self-management but often do not have the opportunity to engage because of economic, physical, and social barriers (Bustill's & Sharkey, 2020). Economic barriers include fixed incomes and Medicare restrictions. Physical barriers can include decreases in sensory abilities and hand-eye coordination, as well as decreases in overall strength. Social barriers can include isolation and decreases in peers for support. Older adults who have established support systems are more successful with some diabetes self-management skills than seniors without social support systems (Werfalli et al., 2020). Researchers who have looked at older adults and barriers to diabetes self-management also found four distinctive themes, including a lack of knowledge and understanding around the need for diabetes self-management, challenges to self-management implementation including age-related barriers, cultural and language barriers, and poor relationships with healthcare providers (Saunders, 2019). Seniors also have special needs related to their age-related physical, mental, and social characteristics. Physical needs can include assistance with hearing, eyesight, hand-strength, and mobility (Carneiro Vicente et al., 2020). Their mental health needs may include health issues with dementia, depression, or impaired cognition (Bustillos & Sharkey, 2020). Their social needs may include special accommodations for disabilities (Bustillos & Sharkey, 2020). They also benefit from strong care provider relationships built on trust and open communication (Saunders, 2019).

Patients in urban environments have access to community resources, but they may also be vulnerable to public safety concerns (Tzeng et al., 2017). Low socioeconomic

status urban adults have barriers such as a lack of resources, poor perceived quality of care, and low patient engagement barriers that can negatively influence diabetes self-management (Whittemore et al., 2019). Older adults in the United States from lower socioeconomic statuses are less likely to receive diabetes self-management education, and, therefore, have less of an understanding of diabetes self-management (Boakye et al., 2018). Urban seniors can benefit from diabetes self-management education; however, their special needs related to age and environment need to be taken into consideration when providing the education and support for diabetes self-management (Tzeng et al., 2017). Age-related health issues include the development of many progressive chronic disease such as heart disease, lung disease, osteoporosis, and falls related to deconditioning. Coping with age-related changes and chronic disease can decrease the senior's ability to function and move about freely in their community. De Man et al. (2019) completed a qualitative study of people with diabetes from different socioeconomic statuses. They found that improving patient-provider interaction, improving health service delivery, and encouraging community initiatives supporting self-management improved diabetes self-management. Provider support can impact diabetes related outcomes for urban low socioeconomic status seniors (De Man et al., 2019).

Receiving ongoing care from the same consistent provider and having positive patient provider interactions positively influences patient health outcomes (De Man et al., 2019). Providers support patients to make positive modifications in the physical environment, such as accessing community resources for healthy food. For example,

Reyes et al. (2017) found that food insecurity and balancing life stressors about family obligations and financial worries impacts diabetes self-management among people of low socioeconomic status. They also revealed that people from low socioeconomic status in urban and rural areas had difficulty making good health decisions regarding their diabetes care because of the identified stressors. The care team is a source of support and knowledge for seniors with diabetes if they understand the population's specific needs and they have positive relationships with their patients (De Man et al., 2019; Reyes et al., 2017). However, there is a gap in knowledge regarding the diabetes-related perceptions of providers who care for urban low socioeconomic status seniors. Understanding their perceptions can aid educators in developing provider education programs to help improve their understanding of diabetes care and management for urban low socioeconomic status seniors.

Problem Statement

ADA standards of care for geriatric patients have evolved over time. A few years ago, the standards supported strict adherence to blood glucose ranges and hemoglobin A1C targets (ADA, 2015). The goal of this practice was to promote longevity and to decrease the risk of complications (ADA, 2015). However, this practice resulted in episodes of hypoglycemia and poor outcomes, such as hospitalization and death (ADA, 2021). This practice also resulted in high burden of daily diabetes care and decision making for seniors (ADA, 2021). The new standards have more relaxed blood glucose ranges and less focus on hemoglobin A1C levels (ADA, 2021). These new standards instead focus on controlling diabetes to decrease the risk of hypoglycemia and severe

hyperglycemia. The new standards also focus on decreasing the burden of diabetes and decreasing the risk of complications while promoting quality of life, but they do not prioritize longevity. The care team is a source of support and knowledge for seniors with diabetes if they understand the population's specific needs and they have positive relationships with their patients (De Man et al., 2019; Reyes et al, 2017).

Changes in the ADA standards of care over time may impact care team practices. More experienced care team members may continue to practice by the older standards, while care team members with less experience may have been taught the newer standards in school. Urban low socioeconomic status seniors are a specialized population for care providers. Low-socioeconomic status seniors often transition from living independently in the community to requiring assistance with activities of daily living as they cope with chronic health conditions (Lee et al., 2019). They have additional struggles with finances that place a heavier burden on their ability to care for themselves (Lee et al., 2019). They may also have age-related health characteristics such as decreased fine motor skills and decreased sensory perceptions that may impede their ability to continue diabetes management (ADA, 2021). Manipulating medication bottles, preparing insulin and self-injecting, reading instructions, and finger-stick testing of blood glucose are a few diabetes self-care skills that require fine motor skills and sensory perception. These factors contribute to their ability to self-manage their diabetes effectively and can increase the burden of diabetes care and may limit the control of blood sugar.

Diabetes requires self-management, and everyday decisions require the individual to have some insight into how their choices can affect blood sugar readings and long-term

control of blood glucose to prevent complications. The diabetes self-management skills include healthy eating, being active, monitoring blood sugars and health status, taking medications, problem-solving, reducing risks, and healthy coping (ADCES, 2020). Empowerment through education is a critical component of improved self-management skills (Shin & Lee, 2017).

Primary care teams provide care for people with diabetes and can include medical doctors, advance practice nurses, nurses, registered dietitians, and social workers (Oliveira & Franco, 2021). Geriatric care is a specialized population for primary care teams, and geriatrics have specialized guidelines for care. The primary care team for this population must understand the unique needs of urban low socioeconomic status seniors who are living in the community to provide education and resources that will help them succeed in managing their diabetes (Koponen et al., 2017). The care team must also understand and practice the latest care guidelines for diabetes management in seniors (Oliveira & Franco, 2021). Years of experience and role on the care team may affect the perceptions of diabetes care.

There is a gap in literature concerning the primary care teams' perceptions about the need for special training, the seriousness of diabetes, the psychosocial impact of diabetes, and patient autonomy when providing care for urban low socioeconomic status seniors. These perceptions may differ depending on the role in the primary care team. Due to the change in ADA guidelines, additional research about primary care teams' perceptions of the value of blood glucose control for urban low socioeconomic status seniors is essential not only for optimal patient care but to identify health education needs

for both providers and patients. Improved understanding of how their own perceptions may impact diabetes management can better equip providers to understand the seniors' needs and develop patient education programs to meet these needs.

Purpose

The purpose of this quantitative study was to assess the attitudes and perceptions among a group of primary care team members about the need for special training about diabetes for providers who educate and care for patients, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes, and patient autonomy for urban low socioeconomic status seniors. The value of tight control has changed over time with the ADA geriatric guidelines. Older guidelines have promoted tight control for better health outcomes. New guidelines recognize the risks of hypoglycemia associated with tight control and the burden associated with tight control, and they promote a level of control that reduces the risk of hypoglycemia and severe hyperglycemia while supporting quality of life (ADA, 2021). Hypoglycemia and severe hyperglycemia can cause injury, hospitalizations, and death. Thus, examining the attitudes and perceptions of the primary care team provided information about the needs of team members as diabetes self-management educators. In this quantitative study, I used the Diabetes Attitude Scale-3 (DAS-3) tool to explore the sample group's perception of need for special training, seriousness of diabetes, value of tight control, the psychosocial impact of diabetes and patient autonomy in self-management for urban low socioeconomic status seniors. A copy of the DAS-3 is located in Appendix A.

Research Questions

Research Question (RQ)1: Are there statistically significant relationships among perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$1: There are no statistically significant relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial social impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes.

H_a1: There are statistically significance relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial social impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes.

This question was answered by correlation analysis. The variables were perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy.

RQ2: Are there statistically significant differences in the ratings of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (provider, nurse, dietitian, social worker) among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$2: There are no statistically significant differences in the rating of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (provider, nurse, dietitian, social worker) among primary care team members for low socioeconomic status seniors with diabetes.

H_a2: There are statistically significant differences in the rating of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (provider, nurse, dietitian, social worker) among primary care teams for low socioeconomic status seniors with diabetes.

The dependent variables included perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy. The independent variable was the team role among primary care teams for low-socioeconomic status seniors with diabetes. The question was answered by multivariate analysis of variance (MANOVA).

RQ3: What is the relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$3: There is no statistically significant relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes.

H_a3: There is a statistically significant relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes.

The dependent variable was perceived value of tight control. The independent variable was years of experience among primary care teams for low socioeconomic status seniors with diabetes. The question was answered by correlation.

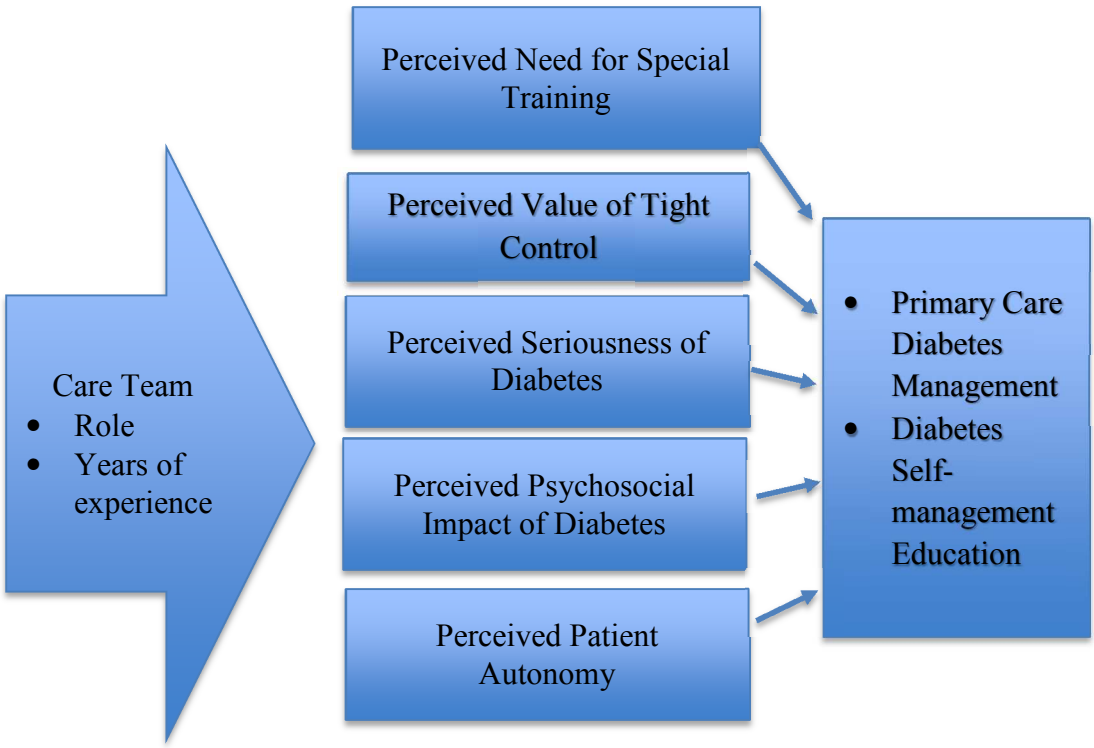
Theoretical Framework

The health beliefs and perceptions of the primary care providers impact the education that they deliver to the patients (Anderson et al., 1998). This study included some constructs of the health belief model. The providers' beliefs and perceptions about diabetes and diabetes self-management may be influenced by their role on the care team and their years of experience. The health belief model includes the concepts of perceived susceptibility, perceived severity, perceived benefits, perceived barriers, a cue to action, and self-efficacy (Rimer et al., 2005). Seniors may be more engaged in diabetes education if they perceive they are susceptible to complications and the complications are severe. Seniors may also see diabetes education as a benefit that removes barriers to self-care and promotes autonomy and independence. The health belief model is a theory that helps to explain the individual's engagement in controlling their diabetes. Diabetes education has been linked to improved quality of life in studied populations (Andrich & Foronda, 2020; Bustillos & Sharkey, 2020; Tavakkoli et al., 2018). The primary care team provides the cue to action for their patients. Their own beliefs and perceptions may influence the engagement and the delivery of meaningful education on diabetes self-

management skills (Kurnia et al., 2017). Understanding the primary care teams' perceptions of the diabetes, especially the value of control, can assist primary care programs to design diabetes education programs that engage and meet the needs of urban low socioeconomic status seniors with diabetes. Figure 1 shows the primary care team characteristics and perceptions impact on their diabetes management.

Figure 1

Primary Care Team Characteristics and Perceptions



Nature of the Study

This was an exploratory quantitative study with a survey design for the primary care team of urban low socioeconomic status seniors with diabetes. The primary care team (providers, nurses, dietitians, or social workers) perceptions of the concepts of the need for special training, the seriousness of diabetes, the value of control, the psychosocial impact, and patient autonomy were explored. Data were collected through the established survey tool. I administered the DAS-3 survey, developed by Anderson et al. (1998) and collected data about the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy for urban low socioeconomic status senior with diabetes (see Anderson et al., 1998). The survey had a 5-point Likert scale that required the respondent to rate their degree of agreement with each statement (see Anderson et al., 1998). This rating system may not deliver true equal intervals of agreement but provided nominal data that were used in statistical analysis to answer the RQs. The electronic survey was distributed by email link to multiple email groups for primary care providers, physician extenders, primary care dieticians, primary care social workers, and primary care nurses.

The dependent variables were perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy for urban low socioeconomic status seniors. The independent variables were team roles and years of experience for primary care teams who provide diabetes care and management for low socioeconomic status seniors. Each

RQ addressed a different aspect of these variables. The first question addressed the correlations among all the dependent variables. The second question addressed the relationship of team role and the dependent variables. The third question addressed the relationship of years of experience with value of blood glucose control. ADA guidelines for blood glucose control have changed, and the diabetes management practices of primary care teams are required to change to meet the new standards of care (ADA, 2021). In this study, I explored different aspects of diabetes and perceptions of primary care teams that care for urban low socioeconomic status seniors.

Multiple correlation was used to identify if there are relationships among perceived need for special training, perceived seriousness, perceived value of tight control, perceived psychosocial impact. and perceived patient autonomy among primary care providers of low socioeconomic status seniors with diabetes (see Warner, 2013). MANOVA was used to determine if there are differences in the ratings of perceived need for special training, perceived seriousness, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on the role in the primary care team among primary care teams for low socioeconomic status seniors with diabetes (see Warner, 2013). Correlation was used to determine if there are differences in the ratings of perceived need for special training, perceived seriousness, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on the years of experience among primary care teams for low socioeconomic status seniors with diabetes.

Definitions

The main concepts of the study are defined here.

Diabetes self-management skills: The diabetes self-management skills are defined as the essential skills needed by people with diabetes for successful and effective diabetes self-management and include healthy eating, being active, monitoring blood sugars and physical symptoms, taking medications, problem solving, healthy coping, and reducing risks (ADCES, 2020). People with diabetes require support and education to master these skills. Ongoing education and support are necessary to help with regimen adjustments through the life span.

Low socioeconomic status: Socioeconomic status is the social standing or class of an individual or group. It is often measured as a combination of education, income, and occupation (American Psychological Association, 2021). For purposes of this study, low socioeconomic status is defined as income level below the federal poverty level. People below the poverty level usually participate in government assistance programs, such as food stamps, subsidized housing, and medical coverage (Leonard et al., 2017).

Perceived need for special training: The need for primary care team members to have specialized training on diabetes and behavior modification when they care for urban low-socioeconomic status seniors (Anderson et al., 1998).

Perceived patient autonomy: The perceptions of primary care team members about whether urban low socioeconomic status seniors should have autonomy to make daily self-management decisions (Anderson et al., 1998).

Perceived psychosocial impact: The perception of primary care team members on the psychosocial impact of diabetes on urban low socioeconomic status seniors (Anderson et al., 1998).

Perceived seriousness of diabetes: The degree of importance of diabetes to primary care team members as a chronic disease (Anderson et al., 1998).

Perceived value of tight control: The benefit of glucose control to urban low socioeconomic status seniors (Anderson et al., 1998).

Primary care team: The clinical primary and preventive care providers in the community clinic, including physicians, advance practice nurses, physician assistants, nurses, registered dietitians, and social workers. These are front line professionals who are working with the population on a regular basis (Schottenfeld et al., 2016).

Role on the care team: Specific role on team. Roles include primary care provider (PCP), nurse, or social worker. PCPs include physicians, advanced practice nurses, and physician assistants.

Seniors with diabetes: People over age 55 with diabetes. Seniors have special needs related to their age-related physical, mental, and social characteristics. Physical needs can include assistance with hearing, eyesight, hand-strength, and mobility. Their mental health needs may include health issues with dementia, depression, or impaired cognition. Their social needs may include special accommodations for disabilities. Older adults who have established support systems are more successful with some diabetes self-management skills than seniors without social support systems (Werfalli et al., 2020). Researchers who looked at older adults and barriers to diabetes self-management also

found four distinctive themes, including a lack of knowledge and understanding around the need for diabetes self-management, challenges to self-management implementation including age-related barriers, cultural and language barriers, and poor relationships with healthcare providers (Saunders, 2019).

Tight control: The practice of following medication and lifestyle interventions to maintain blood glucose within a well-defined range and maintaining a hemoglobin A1C of less than 7% (ADA, 2015). Looser control allows for individualized medication and lifestyle interventions to maintain individualized blood glucose targets and a hemoglobin A1C less than 9% (ADA, 2021).

Years of experience: Number of years practicing in the profession/role.

Assumptions

The participants were recruited through primary care education and interests email group lists. The assumptions in this study were that the DAS-3 measured the provider attitudes towards diabetes. I assumed that the participants provided direct patient care for urban low socioeconomic status seniors with diabetes and provided diabetes education. I also assumed that participants cooperated with the survey process and completed the entire survey in a timely manner to be included in the study. Additionally, I assumed that the surveyed population fully answered the survey accurately and honestly. The DAS-3 is a validated and reliable tool (Anderson et al., 1998). I assumed that the tool accurately measured the attitudes and perceptions of primary care team members about diabetes. These basic assumptions were necessary to answer the RQs.

Scope and Delimitations

I used an exploratory approach to assess the primary care team's attitudes and perceptions towards diabetes management for urban low socioeconomic status seniors. The scope of this project included the perceptions and attitudes of the primary care team on the perceived need for special training for care providers, the perceived seriousness of diabetes, the perceived value of tight control, the perceived psychosocial impact, and the perceived patient autonomy. The primary care team's attitudes and perceptions of these concepts can influence their treatment of diabetes and the quality of patient education that they provide (Sibounheuang et al., 2019). The scope of this project did not cover perceived susceptibility or severity of diabetes or perceived barriers and benefits to diabetes self-management or other specific concepts from the health belief model. I explored primary care teams' perceptions of needs for special training, seriousness of diabetes, value of tight control, psychosocial impact, and patient autonomy. The population targeted was primary care team members for low socioeconomic status urban seniors with diabetes.

Limitations

Barriers to conducting this study were the recruitment of participants. To participate, primary care team members were expected to complete the survey. Primary care team members were difficult to recruit because of time constraints and competing priorities. I engaged the care providers through the research process to encourage their participation. The sample was a convenience sample; this impacted the generalizability of the results. Because this was a nonrandom sample from one geographic location, the

results are limited and will not be applicable to other locations. Primary care team members were recruited through email groups of providers who practiced in the county.

Significance

Poor diabetes outcomes are associated with lower education, low health literacy, and social barriers to health (Niknami, 2018). The primary care team is the front-line staff who provides diabetes education and supports diabetes self-management skills in the community. There is vast research on diabetes topics, but few studies have addressed providers' perspectives that can ultimately contribute to patient diabetes management and engagement in self-management skills for urban low socioeconomic status seniors. Closing this gap in the literature provides valuable information to care providers as they engage patients in diabetes education.

This study is directly related to health education and promotion and contributes to identification of areas where provider education is needed to deliver the standards of care and education to urban low socioeconomic status seniors. Primary care teams provide diabetes self-management education and are expected to follow the latest guidelines. The attitudes and perceptions of primary care teams about diabetes can impact their diabetes education programs. The bias and attitudes that the primary care teams have towards diabetes can influence their self-management education to urban low socioeconomic status seniors (Sibounheuang et al., 2019). Their beliefs and following outdated guidelines can influence their degree of blood sugar control. Findings from this study can help identify areas where primary care teams need more support and education in diabetes management for geriatric populations. Also, results may assist providers to

develop quality education programs that effectively disseminate education to seniors with diabetes so that they have the tools that they need to make daily decisions that affect their blood glucose. Improved diabetes self-management and quality of life can allow these seniors to function in the community and can thus offer positive social change to the community (Funnell et al., 2014). Improving the number of adults who receive diabetes education can contribute to improved health in Atlantic County and progress towards the Healthy People 2030 goal (see New Jersey Department of Health, 2019; Office of Disease Prevention and Health Promotion, 2020).

Summary

Chapter 1 included general descriptions and key concepts to introduce the study and assist in the understanding of the project details. The background of diabetes self-management and the role of the primary care team was introduced. Diabetes burden is identified as a national problem that affects public health. Primary care teams are the main educators and supporters of diabetes self-management for urban low socioeconomic status seniors. The purpose of the study was to assess the attitudes and perceptions of primary care teams about the need for special training, the seriousness of diabetes, the value of control, the psychosocial impact of diabetes, and patient autonomy for urban low socioeconomic status seniors. The RQs and hypotheses tested were clearly stated. Chapter 1 also introduced the theoretical framework and the scope and design of the project. Chapter 2 provides a in depth literature review of the key concepts and the main concepts of the health belief model.

Chapter 2: Literature Review

Introduction

More information is needed on primary care team members' perceptions of diabetes self-management skills for urban seniors from low socioeconomic neighborhoods. There is a gap in literature that has not addressed the primary care teams' perceptions about the need for special training, the seriousness of diabetes, the psychosocial impact of diabetes, and patient autonomy when providing care for urban low socioeconomic status seniors. By identifying these perceptions, educators can identify areas where primary care team members need more education. This work can also help providers better understand the seniors' needs and develop patient education programs to meet their needs. Primary care teams assist patients with diabetes by providing ongoing education and support for diabetes self-management skills.

Diabetes is a chronic disease that requires daily self-management to ensure blood glucose control. Self-management skills can be taught to people of all ages; however, age and environmental-related factors can influence how seniors engage in diabetes self-management (Carneiro et al., 2020). Urban low socioeconomic status seniors face special challenges, and their primary care teams need to understand their perspective to provide diabetes self-management education and support that meets their needs (Mogre et al., 2019). Poor diabetes control can cause frequent illness and may impact the perceptions of health-related quality of life for low socioeconomic status urban seniors (ADA, 2021). Urban low socioeconomic status seniors require a level of control that positively influences their health-related quality of life. Primary care teams need to understand the

senior's diabetes self-management skill ability and the burden of diabetes on their patients (Mogre et al., 2019). The purpose of the study was to assess the attitudes and perceptions among a group of primary care team members about the need for special training, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes, and patient autonomy for urban low socioeconomic status seniors.

Nationally, diabetes management is considered a health issue, as identified in Healthy People 2030 (Office of Disease Prevention and Health Promotion, 2020). Healthy People 2030 recognizes the health burden of diabetes on the population. The project has a number of objectives to manage the long-term health of people with diabetes. Healthy People 2030 recognizes the value of diabetes education and has a goal to increase the proportion of persons with diagnosed diabetes who receive formal diabetes education (Office of Disease Prevention and Health Promotion, 2020). The ADA provides care providers with published standards of care for geriatric patients (ADA, 2021). These standards include blood glucose goals and other health-related goals. Primary care teams help seniors achieve these health goals by offering diabetes education and support for self-management. The basic self-management skills include monitoring blood glucose, eating a healthy diet, being active and exercising, taking medications, correcting high and low blood glucose, and preventing complications (ADCES, 2020). These are the basic skills required for patients to establish autonomy in self-management.

Diabetes education is moving from specialty offices to primary care offices (ADA, 2021). Providers in primary care teams need a good understanding of the latest standards for diabetes management and self-management skills. They also need the

ability to break them down and teach them to their patients. Poor diabetes outcomes are associated with lower education levels, low health literacy, and social barriers to health (Niknami et al., 2018). Primary care teams are the first contact with these patients and can provide education and support for diabetes self-management. Understanding barriers to diabetes self-management for urban low socioeconomic status seniors can help primary care teams to develop diabetes education programs that support self-management and benefit the seniors. There is a gap in knowledge in the provider perspective of low socioeconomic status urban senior patients' ability to complete diabetes self-management skills and the burden of diabetes. Understanding provider perceptions can help educators to provide primary care team members with information they need to provide diabetes management and self-care education for urban low socioeconomic status seniors.

This chapter includes the literature review results on diabetes self-management, seniors with diabetes, low socioeconomic urban environment, diabetes self-management, and provider perspective of diabetes self-management skills. The literature review includes an exploration of the health belief model in diabetes self-management, including provider perceptions or beliefs about diabetes and urban low socioeconomic status seniors. Reviews of relevant literature also included topics on primary care team members' attitudes and perceptions about the need for special training, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes, and patient autonomy for urban low socioeconomic status seniors.

Literature Search Strategy

The Walden University Library was used to search the Ebsco Health Sciences database for scholarly peer-reviewed articles from the years 2017 to 2021. The Health Sciences Databases searches several health-related databases at once, including CINAHL, Medline, PsycInfo, ScienceDirect, and several others. The initial search term used was *diabetes*. Next, the elements of the RQs were added, and the search continued using one concept at a time. Search terms used to find relevant articles were *diabetes*, *self management, self-management, self care, self-care, self monitoring*, and *self-monitoring*. The search was further refined by searching for the study population. Search terms used to define the population were *elderly, aged, older, elder, geriatric, elderly people, old people, older people*, and *seniors*. Also, search terms used to narrow down the search were *urban, health belief, health education, health promotion, health teaching,* and *patient education*. The search also included key terms such as *care providers, physicians, advanced practice nurses*, and *perspectives*. The DAS-3 Survey was located by searching for *provider, perceptions*, and *diabetes*.

A separate literature search was also conducted on the health belief model and studies related to *diabetes self-management* and *chronic disease management*. This search was further narrowed down by searching for *provider perspectives*. Only studies from peer-reviewed journals were considered. These studies, along with foundational literature on the health belief model, were used to apply the model to this project. Seminal literature was located and used when searching for the data collection tools. Because there was limited literature that met the exact terms, the literature review did

include other populations of people with diabetes. The review also included provider perspectives on self-management for other chronic diseases.

Theoretical Foundation

The health belief model was applied to this study. The health belief model is a theory of health behavior developed in the 1950s by social psychologists to help understand why people were not participating in screening programs designed to detect and prevent disease (Rimer et al., 2005). Becker (1974) first used the model to understand preventive health behaviors better. The theory includes four main constructs, including perceived susceptibility to the disease, perceived severity of the disease, perceived benefits of the intervention, and perceived barriers to behavior change. The theory also includes a cue to action and self-efficacy, which is the confidence to make successful behavior change. The health belief model is straightforward and useful to help understand positive health-related behavior changes (Rimer et al., 2005). Diabetes education and support of self-management is a positive preventative health behavior. The education provides people with diabetes skills to stay healthy and manage their diabetes.

The concepts of the health belief model can be applied to the perceptions of primary care teams about diabetes. PCPs are expected to provide education and support for chronic disease management so that patients benefit from improved quality of life and decreased complications and hospitalizations. The perceptions and attitudes of primary care team members about the need for special training on diabetes, the seriousness of diabetes, the value of control, psychosocial impacts of diabetes, and patient autonomy may influence their management of the disease and their effectiveness at teaching self-

management. The health beliefs of primary care team members about diabetes influence their care to urban low socioeconomic status seniors with diabetes.

In a review of literature, five articles from scholarly journals from the last 5 years were found to contain the health belief model and diabetes self-management. Alatawi et al. (2016) used the health belief model to examine the association between health beliefs and medication adherence in patients with diabetes Type 2. The researchers used questionnaires and interviews to determine the relationship between health beliefs and medication adherence. Medication adherence is an essential diabetes self-management skill. The researchers found that the perceived susceptibility, perceived benefits, and self-efficacy were significant predictors for medication regimen adherence. Other researchers looked at behavior changes and diabetes self-management, including motivators and barriers to behavioral modifications required for diabetes self-management (Karl et al., 2020; Schmidt et al., 2020; Swaleh & Yu, 2020). Swaleh and Yu (2020) completed a qualitative study and found that Black Canadians had unique barriers to diabetes self-management, which were based on their health beliefs. Researchers have also found that patients with diabetes maintained healthy behavior changes if they had social support and the support of their health care providers (Schnidt et al., 2020). Karl et al. (2020) used secondary data from a self-administered health questionnaire to determine that participants who perceived low susceptibility to complications did not engage in diabetes self-management skills as often as participants who did see themselves as susceptible. These studies all focused on health beliefs and engagement in diabetes self-management skills.

PCPs' health beliefs influence their management and treatment of diabetes (Koponen et al., 2017). The health belief model was chosen for the project because of its ability to be applied to chronic disease and the prevention of complications in diabetes (see Becker, 1974). Diabetes is a chronic disease that progressively gets worse over time, thus affecting the perception of severity and susceptibility (DeFronzo, 2009). In the beginning, symptoms may be subtle and not affect lifestyle. As time goes on, symptoms and complications, including microvascular and macrovascular issues, cause life-altering and debilitating complications (DeFronzo, 2009). The complications can be slowed down by good blood glucose control, and therefore, complications may not have as devasting of an effect on health-related quality of life (Calenda et al., 2020). Adults who receive diabetes self-management education do better with blood glucose control (Mohammadi et al., 2018). Primary care teams provide diabetes education and support. Their health beliefs and attitudes about diabetes influence their education and support.

A review of the health belief model and care providers' perceptions revealed 17 articles from peer-reviewed literature within the last 5 years. The theory was used to help understand the behaviors of patients related to chronic disease management and preventive care. Some researchers looked at preventative care, such as screenings and vaccination use (Darville et al., 2021; Padilla et al., 2020). Darville et al. (2021) used the key concept of self-efficacy to determine if video game interventions would help young men complete human papilloma virus vaccinations. They found that self-efficacy was a key component of vaccination completion. Padilla et al. (2020) examined the intention to

vaccinate against the flu. They found that perceived effectiveness and perceived safety of the vaccination affected the intention to get the vaccination.

Other researchers looked at chronic disease management related to renal disease and other chronic diseases (Chironda & Bhengu, 2018; Jones et al., 2019; Sherbuk et al., 2020). Research about alcohol treatment and provider perceptions revealed that patients were more likely to engage in treatment services if the provider displayed empathy for the patient (Jones et al., 2019). Other researchers looked at patients' compliance with hepatitis C care, and using the health belief model, they found that perceived barriers needed to be addressed by providers to engage the patient in successful treatment follow-up (Sherbuk et al., 2020). The health belief model was also applied to research patients with kidney disease and their compliance with care (Chironda & Bhengu, 2018). The researchers found that patients were more compliant with care when their support circle also believed in the benefits of treatment and susceptibility of complications without treatment. The health belief of primary care team members about diabetes influences their education and support for diabetes and their patient outcomes.

Exploring the primary care team's attitudes and perceptions of diabetes in urban low socioeconomic status senior populations helped identify the primary care team's role as both educators and supporters of diabetes self-management. Application of the constructs of the demographic variables on perceptions of health from the health belief model helped to understand the relationships between years of experience and perception of tight control. Care providers can educate and support patients to understand the benefits of diabetes self-management and help them overcome barriers to care. The care

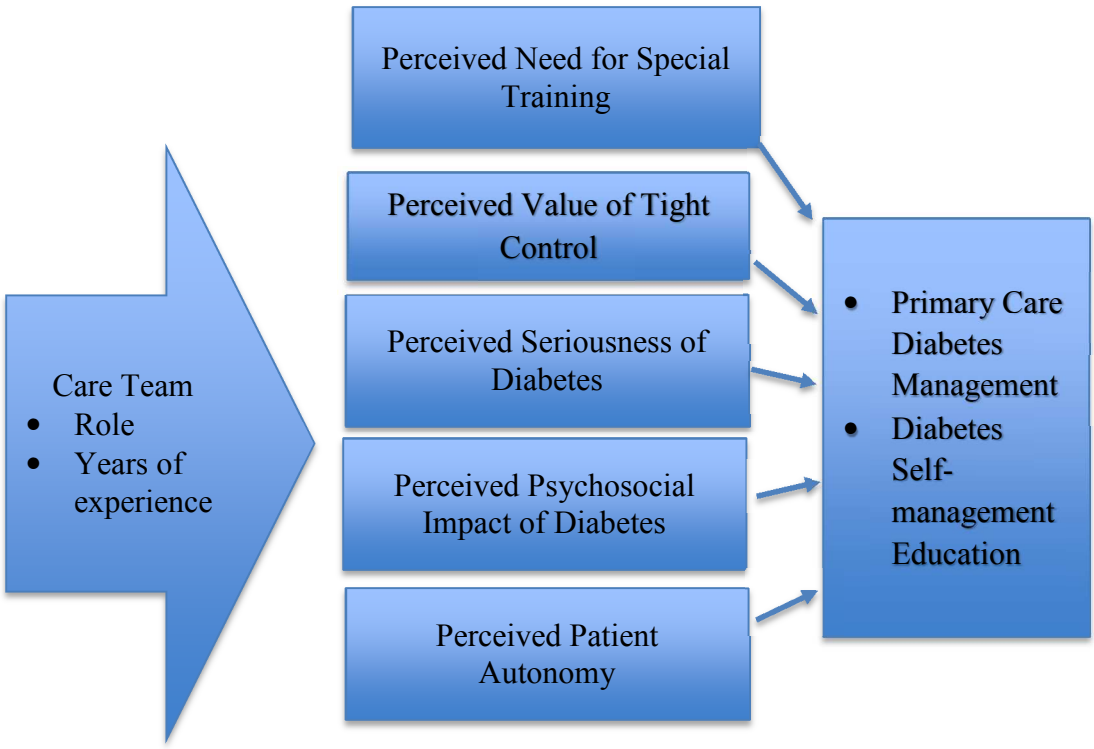
providers and the patients engage in a journey to manage diabetes and prevent complications together.

Conceptual Framework

Primary care teams are comprised of various members with different roles and years of experience (Schottenfeld et al., 2016). Their individual demographic characteristics may influence their management of diabetes and how they provide diabetes education (Koponen et al., 2017). Diabetes management and education have evolved. There is support for the management of geriatric patients to support looser blood sugar ranges to balance longevity, the burden of diabetes, and quality of life (Kalyani et al., 2017). There is also an understanding that diabetes education and support throughout the life span, including the senior years, can help to improve patients' autonomy and ability to self-manage their disease (Kalyani et al., 2017). Because the management of diabetes has evolved, the providers' perceptions of diabetes may not be congruent with current guidelines. Figure 2 provides a conceptual model that illustrates the concepts to be addressed in this study.

Figure 2

Primary Care Team Characteristics and Perceptions



In this model, the perceptions of the primary care team drive positive behavior changes. The perceived need for special training, the seriousness of diabetes, the value of tight control, psychosocial impact, and patient autonomy can influence how they manage diabetes and teach diabetes self-management. New guidelines promote less stringent control of blood sugars for geriatrics to balance quality of life and long-term health benefits with the burden of diabetes. Measuring primary care team perceptions of the

need for special training, the seriousness of diabetes, the value of tight control, psychosocial impact, and patient autonomy can help better understand the primary care team's understanding of the care and management of urban low socioeconomic status seniors.

2021 ADA Guidelines for Geriatrics

The 2021 ADA Standards of Care for Patients with Diabetes included some new updates and changes that affect professional practice (ADA, 2021). The new guidelines include recommendations for geriatrics, including less stringent blood glucose ranges for looser control and less focus on hemoglobin A1C as a measure of control. Instead, the guidelines focus on a wider range for acceptable blood glucose and the reduction of hypoglycemia and severe hyperglycemia events. The geriatric standards address the need for less stringent control of blood glucose levels instead of tight control, as geriatric patients can suffer injury, hospitalization, and even death from hypoglycemic episodes (ADA, 2021). They can also suffer injury, hospitalization, and death from severe hyperglycemia. The guidelines focus on preventing hypoglycemia and severe hyperglycemia instead of strict blood glucose and hemoglobin A1C goals. Previous standards focused on these blood glucose goals and hemoglobin A1C goals as standards of care measures. The changes were made because strict blood glucose ranges have higher incidents of hypoglycemia and poor health outcomes. Strict ranges also increase the burden of tight control on seniors who do not have a focus on longevity. This change in focus stimulates practice changes as primary care team members switch from specific

blood glucose targets and hemoglobin A1C goals to more general outcomes like the prevention of acute hospitalization and death.

Diabetes Self-Management

Diabetes requires multiple daily decisions during all times of the day, and the care providers cannot be with the patient at every decision point of the day. Blood glucose is affected by sleeping, eating, stress, and activity (ADA, 2021). Blood glucose can also be affected by the times of day that these activities occur (ADA, 2021). There are established self-management skills that patients may benefit from learning. Healthy People 2030 establishes the goal to relieve the burden of diabetes. One of their strategies is to create accessibility to diabetes self-management education so that patients have the skills they need to manage their diabetes (Office of Disease Prevention and Health Promotion, 2020). Patients who receive diabetes self-management education and have support have better health outcomes (Alanazi, 2021). Patients whose providers deliver patient-centered care and make a connection with the patient also have better health outcomes (Hyman, 2017). The skills include healthy eating, being physically active, taking medications as prescribed, monitoring blood glucose, reducing health risks, coping with the mental burden of diabetes and other life stressors, and problem-solving skills (ADCES, 2020). Patients who receive education have increased knowledge and improved techniques to perform the diabetes self-management skills.

Primary Care Team Providers

Primary care teams comprised of interdisciplinary members have an advantage when managing patients with diabetes (Guo et al., 2020). They have diverse skills and

knowledge that when used collectively to treat and manage diabetes produce better health outcomes for patients (Guo et al., 2020). Primary care teams may consist of physicians, physician extenders such as advanced practice nurses and physician assistants, nurses, dietitians, social workers, and health educators. The presence of a health educator on the primary care team improves patient outcomes (Vitale et al., 2020). The educator takes on the role of patient education so that other care team providers can focus on other aspects of the patient's care (Vitale et al., 2020). The educator can also educate the care team on the standards of care to ensure that the entire team is providing care that meets the latest standards. Primary care teams comprised of interdisciplinary roles successfully decrease barriers to care and understanding by providing care and bringing their individual expertise together to provide high-quality diabetes care (Miller-Rosales & Rodriguez, 2021). Health educators can be a key part of this team.

Provider Attitude Toward the Need for Special Training

PCPs are now the source for chronic disease self-management education (Aweko et al., 2018). They require not only the knowledge of chronic diseases, but they must also have the skill to break down the concepts into understandable pieces for the audience and deliver those pieces of information within the confines of a primary care appointment (De la Cruz et al., 2019). Provider perceptions of diabetes may influence the way they manage and treat urban low socioeconomic status seniors with diabetes (Sibounheuang et al.,2019). The quality care and support for diabetes self-management affect the patient's ability to engage in self-management skills (Koponen et al., 2017). The DAS-3 was utilized with Filipino doctors and found that they identified a need for special training to

provide diabetes self-management education to their primary care patients (Al-Ali et al., 2020; De la Cruz et al., 2019; Calenda, 2020). The providers identified limitations in their ability to teach diabetes self-management education to patients versus their ability to treat diabetes.

Provider Attitude Toward the Seriousness of Diabetes

The American College of Endocrinologists has identified that providers do not make necessary clinical treatment changes in a timely manner when they recognize progressions in the patient's diabetes, this includes medication changes (American Association of Clinical Endocrinology [AACE], 2020). This phenomenon has been termed as the lack of clinical inertia by the AACE (2020). The lack of clinical inertia can be caused by a lack of understanding about diabetes and appreciation for the treatment and management of a serious chronic disease. The lack of clinical inertia could also be caused by the inability of providers to teach and communicate the complex concepts of diabetes to their patients in a way they understand. Kanumilli et al. (2021) found that PCPs lacked the skill to translate the latest evidence about protective cardiovascular benefits and general diabetes education into a language level their patients understand. This global survey that included 1677 respondents from 18 countries found that PCPs needed additional support to adequately manage diabetes. The level of engagement in chronic disease management is influenced by the providers' perception of the seriousness of the disease (Chironda & Bhengu, 2018). Primary care teams engage patients in diabetes education and management to help them develop a better understanding of their illness and the treatment plan.

Provider Attitude Toward the Value of Tight Control

The previous ADA standards called for strict control of blood glucose (ADA, 2021). The current standards focus more on decreasing the risks of diabetes-related emergencies and complications. Patients with long-term complications like foot ulcers and kidney failure may be perceived as unable to control their blood glucose in a tight range. Oliveira et al. (2021) found that geriatric people with type 2 diabetes had less stable blood sugars and higher hemoglobin A1Cs. Their study included people 60-69 years old and determined that their consistent use of medication was related to blood sugar stability. PCPs can influence appropriate blood sugar control through the use of education on lifestyle, and a simplified medication regimen to help seniors meet their goals (Sibounheuang et al., 2019). In the new guidelines, the blood sugar goals are individualized and less strict than previous guidelines (ADA, 2021). Older guidelines advised providers to maintain blood glucose levels within the range of 80-180, and hemoglobin A1C goals less than 7%. New guidelines allow for higher blood glucose levels, and do not focus on hemoglobin A1C levels but on the absence of hypoglycemia (less than 60) and severe hyperglycemia (greater than 500). The new guidelines focus on balancing the burden of diabetes and the quality of life for geriatric patients. Because the guidelines are new, there is literature to support looser guidelines, but there is little information on the primary care team's perceptions about the new blood sugar guidelines for geriatrics.

Provider Attitude Toward the Psychosocial Impact of Diabetes

Diabetes can become an overwhelming burden to patients and can affect a person's quality of life. Patients with controlled diabetes may feel the burden of daily diabetes self-management. Still, they may be healthier than their peers and retain community independence, functionality, and quality of life longer than their counterparts. Four weeks of education and an improvement in blood glucose readings can cause improved quality of life for seniors (Andrich & Foronda, 2020). Patients with uncontrolled diabetes can suffer from devastating complications that limit their independence, functionality, and quality of life (ADA, 2021). Memory issues related to age and microvascular complications decreased seniors' ability to maintain diabetes survival skills (Cuevas & Stuifbergen, 2017). In a study of senior immigrants to the United States and their perceptions of self-care, researchers found that four major themes related to participants' experiences with diabetes self-care management, including that diabetes were genetic and inevitable, diabetes self-care is difficult, they had little understanding of their diabetes, and they were dependent on care providers, doctors, and nurses to facilitate self-care management (Le et al., 2018). They were dependent on their care team. These themes all influenced their quality of life. Adults perceive barriers to diabetes self-management, including problem recognizing physical changes, understanding diabetes, and high blood glucose on overall health and self-management implementation dilemmas that negatively impact the quality of life (Wu et al., 2019). Kim & Kim looked at health-related quality of life and diabetes self-management in elderly Korean patients in acute care (2017). They found that these patients had poor

quality of life related to depression and inability to manage their diabetes and overall health. Patients who experience the burden of diabetes and lack support and knowledge can have a poorer quality of life than peers with diabetes self-management support and education. The primary care team is a provider of diabetes self-management education and a patient supporter. The provider perspectives can influence a patient and affect their ability to engage in self-management.

Provider Attitudes on Patient Autonomy

Care providers can educate and support seniors in managing their diabetes (ADCES, 2020). Providers are responsible for educating and supporting patients on their disease status and treatments (ADCES, 2020). The provider can also teach seniors techniques that may help to compensate for age-related deficits. Care providers need to understand the senior's environment to help them overcome challenges and barriers while maximizing strengths and social supports. Aweko et al. (2018) completed a study examining provider views about diabetes self-management education. The patients' backgrounds varied from the providers, and this led to the conclusion that patients often found it difficult to operationalize the instructions given to them by the provider, where the providers felt that the patients did not completely follow the directions. The provider-patient relationship affected education. A positive relationship that supports and understands the patients' needs and views can positively impact a patient's self-management skills and quality of life.

Seniors look to maintain independence and autonomy. They are a special care group for providers. Pediatrics is also a special care group that is just learning about

autonomy in chronic disease self-management. There are articles comparing the provider perspective and patient perspective for diabetes self-management for type 1 pediatrics. This research includes family support and education. Parent and provider impact the child's ability to take accountability for and self-manage a complex disease (Ahmed et al., 2019; Goethals et al., 2020; Starkman et al., 2019). There is research on provider perspectives for the care of children with type 1 diabetes, focusing on the transition of care from pediatrics to adult providers.

Perceived Susceptibility

Perceived susceptibility is an individual's interpretation of risk (Becker, 1974). In this study, perceived susceptibility refers to the individual's perception of their individual vulnerability to diabetes complications. Complications can be severe and include heart failure, myocardial infarction, stroke, kidney disease, blindness, and amputations (Evans et al., 2021). Emotions, experiences, cultural beliefs may influence their perceptions and values (Becker, 1974). Both the provider and the patient need to understand the complications of diabetes and its impact on quality of life. The provider needs to effectively communicate the risk of complications and the patient's susceptibility to the complications (Anjali et al., 2021). By helping patients understand their susceptibility to the complications of diabetes, providers can support them in behavioral modifications and self-management skills.

Perceived Severity

Perceived severity is the individual's acceptance of the seriousness of diabetes complications. A lack of knowledge can minimize the severity of diabetes. Diabetes is

traditionally known as a sugar problem. It is often explained as just having too much sugar, which gives the impression that patients should stop using white table sugar to manage the disease (Swaleh & Yu, 2020). However, sugar or glucose is the major source of food for our body's cells. Food has glucose, and the body is able to store and make glucose (ADA, 2021). Diabetes is a body systems disease that is much more complicated than the concept of white table sugar. The severity of the disease can be misinterpreted without education (Swaleh & Yu, 2020). Patients who do not receive education on diabetes self-management may underestimate the severity of the disease (Swaleh & Yu, 2020). Providers are the primary source of education and support. They can develop relationships with their patients and provide diabetes self-management education on a level they understand to support them.

Perceived Benefits

The perceived benefits of diabetes self-management education can be underestimated (ADA, 2021). Most illnesses require doctors' visits and pills. Diabetes requires frequent doctors' visits, medications, monitoring, and lifestyle changes, including eating habits, regular exercise, and sleep habits (ADA, 2021). The perceived benefits of diabetes self-management can be underestimated if the patient does not have the foundational education about ways to control blood glucose (Putri et al., 2020). The benefits of blood glucose control are seen in the ability to put off complications. Providers need to understand the benefits of diabetes self-management for their patients and educate the patient about the benefits in a way that they can understand and operationalize the education (Putri et al., 2020).

Perceived Barriers for Patients

The perceived barriers to diabetes self-management can be numerous and influenced by internal and external factors, including physical and mental capacity, financial, beliefs, and values (Saunders, 2019). Seniors face additional barriers related to age-related deficits (Saunders, 2019). Care providers develop a trusting relationship with patients and provide education and support for diabetes self-management. They can also help address financial stressors and environment-related factors by assisting seniors to access community resources to support diabetes self-management (ADA, 2021). Diabetes self-management education programs that are individualized to the patient's needs help patients overcome barriers (Pinchera et al., 2018). The provider needs to understand the patient and their barriers to care.

Barriers for Providers

Also, clinical inertia is a well-documented provider barrier to diabetes management (AACE, 2020). Providers are slow to increase medication and aggressively treat diabetes, giving patients the perception that they are doing better than they really are (Alshoalah et al., 2018). The American Association of Clinical Endocrinology has prioritized clinical inertia, developed an easy-to-follow treatment algorithm, and provided education to providers on the appropriate treatment of diabetes to support PCPs in the appropriate treatment of seniors with diabetes. (AACE, 2020). The clinical treatment of diabetes is complex and consists of medication management and lifestyle modifications. There may be other language, culture, and values barriers that prohibit the care provider and patient from developing good communication.

Cues to Action

The cue to action for patients is a trigger to take action. Providers need to understand the patient motivators to engage them in education and diabetes management. This understanding requires the cultivation of a relationship and asking clear questions about the patient's goals (Nichols et al., 2018). Seniors may have very different motivators and goals than younger people. Their wish for longevity may not be as strong as their desire to have a high quality of life for the rest of their years. The motivator for patients is individualized (Burner et al., 2014). The provider has to assess the patient and determine motivators that will engage the patient in diabetes self-management.

Self-Efficacy

Self-efficacy is the belief that an individual can accomplish the task in question. Self-efficacy is affected by an individual's self-image and self-confidence. Providers need to explore not only patient motivators but also include the patient in decision making and care planning. By including the patient, the provider can increase the patient's self-efficacy (Vluggen et al., 2018). Patients who received diabetes education and maintained a relationship with their provider have a higher self-efficacy (Lee et al., 2019). Self-efficacy is a major component of the health belief model. Seniors may not even begin diabetes self-management if they do not believe that they can accomplish the tasks.

Summary and Conclusions

There are many research articles on diabetes. There are new defined standards of care for geriatric diabetes management; however, there is a gap in research for PCPs and their perceptions and attitudes about diabetes management and education for urban low

socioeconomic status seniors. As the guidelines change for geriatrics diabetes management, the primary care team needs to improve their care of geriatric patients. Very few articles consider the primary care team perspective of diabetes for urban low socioeconomic status seniors. The care team's management of diabetes for seniors only accounts for small points in time in the patient's life. Diabetes self-management skills are taught and supported by the care team. However, the patient goes back into the community and must decide how to operationalize those new skills. Urban seniors from low socioeconomic neighborhoods have distinct needs, barriers, and strengths. Diabetes self-management skills require multiple daily decisions that the patient makes by themselves. Care providers need to understand the internal and external influences and work with patients to provide education and tools to support diabetes self-management.

The burden of diabetes management may be overlooked by patients and providers but can contribute to continued independence and self-sufficiency in the community during the later years of life. The care providers can help patients engage and learn the diabetes self-management skills by reinforcing the susceptibility of diabetes and long-term complications, the perceived benefit of diabetes self-management in controlling diabetes and preventing complications.

Chapter 3 reviews the methodology for this quantitative study. The exploratory research design and rationale are discussed. The sample population is defined as well as participant recruitment. The survey tools and design are discussed in depth. The threats to validity and ethical procedures are discussed. All aspects of the project as they fall within the scope of the dissertation are described.

Chapter 3: Research Method

Introduction

The purpose of the study was to assess the attitudes and perceptions of primary care teams about the need for special training, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes, and patient autonomy for urban low socioeconomic status seniors. In this chapter, I describe the details of the research design and provide the rationale behind the design as it related to the scope of the study. The methodology is described, including the target population, sample, and sampling procedures. The procedures for sampling are explained and include a justification for the sample size. Also included in the chapter are the recruitment, participation, and data collection procedures. The data collection surveys are presented, and their alignment with the study is explored. The threats to validity, study constraints, and ethical considerations are also outlined at the end of the chapter.

Research Design and Rationale

An exploratory design was applied to assess the perceptions of the primary care team members on diabetes and urban seniors from low socioeconomic neighborhoods. Health educators can benefit from understanding the primary care teams' perceptions of diabetes so that they can build education programs that help primary care teams close gaps in knowledge and provide high quality diabetes care. A survey was used to explore primary care team members' perceptions about diabetes. To entirely understand the perceptions of care teams, I would have needed time for extensive interviews and shadowing in different primary care offices. Due to the scope of this study, I instead used

a survey method to collect data from primary care team members about their perceptions of diabetes self-management skills and education for their senior diabetes patients from low socioeconomic status urban communities. An online survey was an easy tool to administer and used to collect data in a timely manner (Warner, 2013). By being online, primary care team members easily completed the survey in 5 to 10 minutes and submitted their responses. The online tool also helped track and record responses (see Warner, 2013). The online tool allowed the response to be anonymous. The disadvantage of a survey was that questions could not be clarified, and responses could not extend beyond the response choices (see Warner, 2013). Participants were not able to explain their response or provide additional information because the survey used a Likert scale (see Warner, 2013). However, the tool allowed for the collection of data from a large convenience sample within a short period of time.

Correlation analysis was used to identify if there was a relationship between perceived need for special training, perceived seriousness, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care teams for low socioeconomic status seniors with diabetes. MANOVA was used to determine if there were differences in the ratings of perceived need for special training, perceived seriousness, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on the role in the primary care team among primary care teams for low socioeconomic status seniors with diabetes. Correlation analysis was also used to identify if there were differences in the ratings of perceived need for special training, perceived seriousness, perceived value of tight control,

perceived psychosocial impact, and perceived patient autonomy based on years of experience among primary care teams for low socioeconomic status seniors with diabetes. The dependent variables were the diabetes attitudes: the perceived need for special training, the perceived seriousness of diabetes, the perceived value of tight control, the perceived psychosocial impact, and the perceived patient autonomy. The independent variables were the role on the care team and the years of experience.

This study was an exploratory quantitative project with a survey design for the convenience sample of primary care team members. Data were collected through the DAS-3. The survey was distributed electronically, and responses were collected electronically.

Methodology

Population

The population of interest was the primary care team members for urban low socioeconomic status seniors with diabetes Type 2 in Atlantic County, New Jersey. The care team consisted of physicians, advance practice nurses, physician assistants, nurses, registered dieticians, and social workers. Physicians, advanced practice nurses, and physician assistants were placed into one category labeled PCP The team members varied in years of experience and professional role on the team. The survey was distributed electronically through email to primary care team members who practiced in Atlantic County, New Jersey. There were approximately 25 primary care offices and over 1,065 providers in Atlantic County (United States Census Bureau, 2019). The area had primary care interests' groups with email distribution lists. I used the email distribution lists with

the permission of the group administrators, see Appendix B. The first section of the survey required the participant to indicate their role on the care team and years of experience.

Sampling and Sampling Procedures

I used a convenience sample of primary care team members from area offices. Offices were within the county but not from the same healthcare organization. A simple random sample would have strengthened the validity of this study; however, due to the time constraints of a dissertation, a convenience sample met the scope of this dissertation (see Warner, 2013). The ideal size of the sample was 132 primary care team members. The convenience sample generated enough data to effectively analyze the differences in perception using multiple correlation and MANOVA. The population of primary care team members was estimated to be over 1,065. A sample of 132 was adequate for statistical analysis.

Effect size is a measure that determines the meaningfulness of the relationship between the variables (Faul et al., 2007). A large effect size can mean that the findings have more significance than a small effect size. The alpha value is the level at which the null hypothesis will be rejected. The statistical power of the significance was determined based on the number of participants recruited. Using G*Power (see Faul et al., 2007), the statistical power of the study was at 95%. I assumed that the sample represented the diverse backgrounds and perspectives of the primary care team and that the sample size was large enough to represent the population. There was the possibility of error if primary care team members who used the updated guidelines in their practice responded

to the survey. There was also the possibility of error because the four primary care roles did not respond uniformly to the survey. I sent the survey to lists of primary care team members from diverse roles and recruited 150 respondents to attempt to counter this error.

Participants were recruited by email invitation. The email list was generated from the local interest groups and primary care teams. To be included in the study, participants must have been one of the primary care team members and cared for urban patients over 55 with diabetes Type 2 with low socioeconomic status. Providers were aware of socioeconomic status from their assessments of the patients' resources. I recruited a sample of 150 participants to have an adequate number of valid responses.

Procedures for Recruitment, Participation, and Data Collection

Participants were voluntarily recruited from primary care offices. Recruitment was through mass email of all primary care team member distribution lists. Participation in the study was voluntary, and consent was obtained. The study was held over a 4-week time frame. The survey took approximately five to ten minutes to complete. The survey did not collect individual participant names. The demographic data collected included primary care team position, sex, age, and number of years of experience in their role. A form of consent was attached to the surveys in the introductory email. The survey was a link on the email. This was an anonymous electronic survey; consent was implied when the questionnaire was accessed and completed. Participants were assured confidentiality and anonymity. The DAS-3 is an established survey tool. The survey has a Likert scale,

so answers were ordinal. The survey was administered using the Survey Monkey tool (see momentive.ai, 2021).

The consent document informed participants that the study outcomes would be used to improve diabetes education in the primary care offices and included my contact information for specific questions. This was a one-time survey and did not require any follow-up by the participants.

Participants were included if they were a primary care team member who cared for urban low socioeconomic status seniors. Primary care team members were defined as clinical primary and preventive care providers in the community clinic, including physicians, advance practice nurses, physician assistants, nurses, registered dietitians, and social workers. Care providers who were not primary care or did not care for urban low socioeconomic status seniors were not included. I collected and maintained all data. Responses were excluded if the threshold for the scale was not met or if the response was outlier.

There were limitations to this research project. Design issues included not receiving the desired number of responses within the first week. Additional email reminders were sent out at week 2 and 3 to increase the response rate. Also, the responses were collected in a rating format and allowed for no further detail or elaboration from the participant. There was the possibility that participants chose random responses. Additionally, there may have been time and resource constraints related to the COVID-19 public health pandemic and the ability of the participants to complete the surveys in a timely manner. Care provider burnout was an issue during the public health emergency

(Kang & Hun Park, 2021), so I approached the care team in a supportive way to engage them in the project. There was a local surge or COVID-19 during the four-week survey period. I gave clear instructions and explanations of the study and an accurate description of the length of the survey. Completion of the survey took on average seven minutes.

Instrumentation and Operationalization of Constructs

The DAS-3 was developed by the University of Michigan Diabetes and Research Training Center in 1998 (Anderson et al., 1998). The project described was supported by Grant Number P30DK020572 (MDRC) from the National Institute of Diabetes and Digestive and Kidney Diseases. This was the third version of the survey. See Appendix C for permission to use the tool. The DAS-3 was a valid and reliable general measure of diabetes-related attitudes and was appropriate for comparisons in care team members (see Anderson et al., 1998). The reliability was broken down by the subscales. The need for special training had a reliability of 0.67, the seriousness of diabetes had a reliability of 0.80, the value of tight control had a value of 0.72, the psychosocial impact had a value of 0.65, and the patient autonomy had a value of 0.76 (Anderson et al., 1998). The validity was established by having the scale items developed by 22 diabetes experts, including physicians, nurses, dieticians, social workers, and patients (Anderson et al., 1998). The panel used a modified Delphi technique to develop and prioritize the items (Anderson et al., 1998). The tool measured attitudes of health care providers on diabetes. The instrument was designed for either patients or health care professionals. It had 33 diabetes-related statements that the respondent reviewed and indicated the level of their agreement or disagreement. The scale was a 5-point Likert scale that included the

responses *strongly agree, agree, neutral, disagree*, and *strongly disagree*. Some questions required reverse scoring, see Table 1. The developers of the DAS-3 divided the 33 questions into groups to create the categories of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy. For the purposes of this study, I used the tool on primary care teams. The tool had been used in different countries and languages; however, it had not been used to measure care team perceptions of diabetes for urban low socioeconomic status geriatric patients. The tool included a collection of demographic data at the beginning that included age, sex, profession, and years of experience.

Operationalization

The tool identified five general areas related to diabetes care and management. The five areas were the perceived need for special training, the perceived seriousness of diabetes, the perceived value of tight control, the perceived psychosocial impact of diabetes, and the perceived patient autonomy. The 33 statements were divided into these five categories, see Table 1 (see Anderson et al. 1998). Some statements required reverse coding as the degree of agreement was valued at the reverse response, see Table 1.

The need for special training was the sum of Statements 1, 6, 10, 17, and 20. The seriousness of diabetes was the sum of Statements 2, 7, 11, 15, 21, 25, and 31. Reverse scores was used for Statements 2, 7, 11, and 15. The value of tight control was the sum of Statements 3, 8, 12, 16, 23, 26, and 28. Reverse scores was used for Statements 3, 16, 23, and 26. The psychosocial impact of diabetes was the sum of Statements 4, 13, 18, 22, 29,

and 33. The reverse score was used for Statement 13. Patient autonomy was the sum of Statements 5, 9, 14, 19, 24, 27, 30, and 32. Table 1 shows the statement scoring.

Table 1

Table for Statement Scoring

Scale name	Scale equation	Special instructions
Need for special training	Sum of statements: 1, 6, 10, 17, 20	
Seriousness of diabetes	Sum of statements: 2, 7, 11, 15, 21, 25, 31	Reverse scores for statements 2, 7, 11, and 15
Value of tight control	Sum of statements: 3, 8, 12, 16, 23, 26, 28	Reverse scores for statements 3, 16, 23, and 26
Psychosocial impact of diabetes	Sum of statements: 4, 13, 18, 22, 29, 33	Reverse score for statement 13
Patient autonomy	Sum of statements: 5, 9, 14, 19, 24, 27, 30, 32	

Each RQ was addressed using the statement scales. If 50% of the items of a scale were missing, the scale was considered as missing for that respondent.

Data Analysis Plan

RQ1: Are there statistically significant relationships among perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$1: There are no statistically significant relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes.

H_a1: There are statistically significance relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes.

The variables were perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy. The alpha was 0.05, the power was 0.95, the effect size was 0.20, the calculated minimum sample size was 105, and the software G*Power was 3.1.9.7

The question was answered by correlation analysis in SPSS version 27 (IBM, 2020). The sum of each statement was entered into SPSS Version 27. The relationship

between perceived need for special training, perceived seriousness, perceived value of tight control, perceived psychosocial impact and perceived patient autonomy for primary care team members of low socioeconomic status seniors with diabetes was examined.

RQ2: Are there statistically significant differences in the ratings of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (provider, nurse, dietitian, social worker) among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$2: There are no statistically significant differences in the rating of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (provider, nurse, dietitian, social worker) among primary care team members for low socioeconomic status seniors with diabetes.

H_a2: There are statistically significant differences in the rating of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (provider, nurse, dietitian, social worker) among primary care teams for low socioeconomic status seniors with diabetes.

The dependent variables included perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy. The independent variable was the team role among primary care teams for low-socioeconomic status seniors with diabetes. The alpha was

0.05, the power was 0.95, the effect size was 0.20, the calculated minimum sample size 132, and the software: G*Power 3.1.9.7.

The question was answered by MANOVA in SPSS version 27 (IBM, 2020). MANOVA was used to predict the value of perceived need for special training, perceived seriousness, perceived value of tight control, perceived psychosocial impact and perceived patient autonomy based on the team roles among primary care teams for low socioeconomic status seniors with diabetes. The team roles were categorical data. Team roles were separated into PCP, nurse, dietitian, and social worker.

RQ3: What is the relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$3: There is no statistically significant relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes.

H_a3: There is a statistically significant relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes.

The dependent variable was perceived value of tight control. The independent variable was years of experience among primary care teams for low socioeconomic status seniors with diabetes. The alpha was 0.05, the power was 0.95, the effect size 0.20, the calculated minimum sample size was 111, and the software was G*Power 3.1.9.7.

The question was answered by correlation analysis in SPSS version 27 (IBM,2020). Correlation analysis was used to predict the perceived value of tight control based on the years of experience. The new ADA guidelines have changed for geriatric patients. The degree that experienced primary care team members learn and implement the new standards compared to less experienced team members who were taught the new standards in training is of interest. As standards of care and treatment guidelines evolve and improve, the ability of practicing primary care teams to learn and implement these standards is key. The years of experience was collected as a raw number.

Assumptions

The correlation analysis had a few basic assumptions. One is normality. Normality means that the data sets have a normal distribution (Warner, 2013). Another assumption for correlation analysis is homoscedasticity, which is equal variance, and this can be visualized using a scatterplot (Warner, 2013). Data points will be equidistant from the line on both sides of the line. There is also the assumption of linearity, which can also be visualized in a scatter plot. Data points will follow a liner line, and not a curve (Warner, 2013). Another is paired observations, for every independent variable observation, there must be a corresponding dependent variable observation (Warner, 2013). The final assumption was that there are no outliers (Warner, 2013). Outlier responses were discarded.

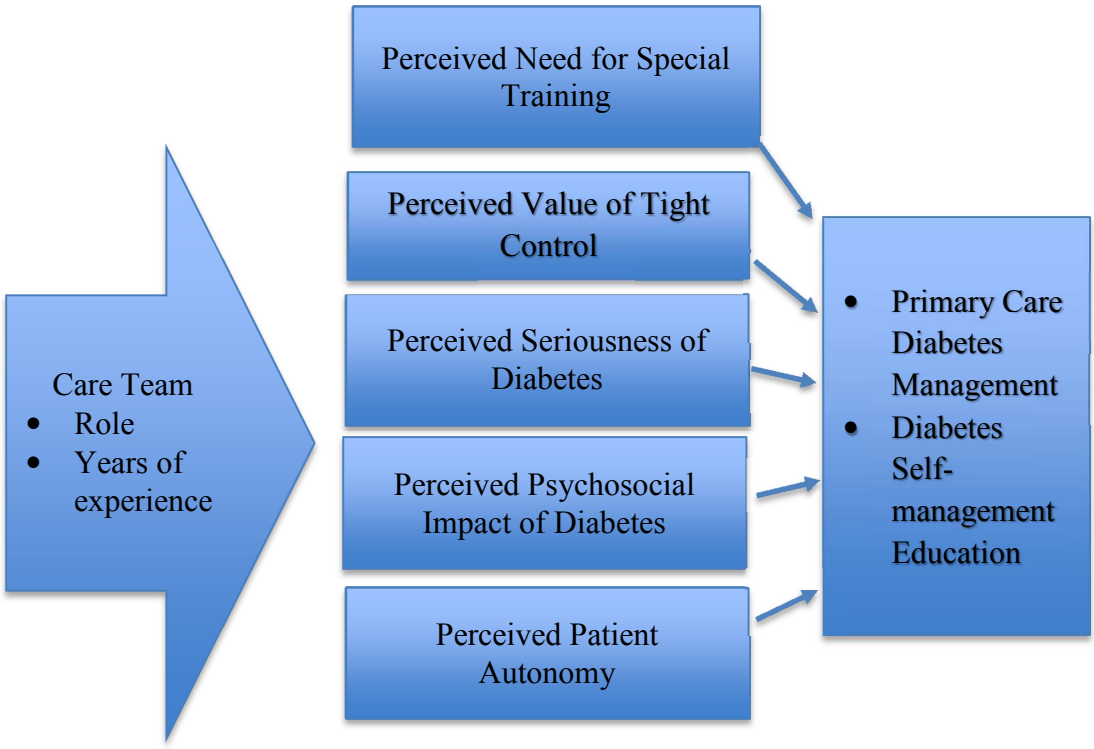
The MANOVA analysis determines if there are differences in independent groups when there is one dependent variable and has similar assumptions to correlation analysis (Warner, 2013). The assumptions were that the measures were in interval or ratio levels,

and that the independent variable had more than one category (Warner, 2013). There was independence of observations (Warner, 2013). Also, there was an adequate sample size and no outliers (Warner, 2013). For the current study sample, responses containing outliers were discarded.

The role and years of experience of the team members may impact the health beliefs about diabetes care and management. The perceived need for special training, perceived value of tight control, perceived seriousness of diabetes, perceived psychosocial impact of diabetes, and perceived patient autonomy each contribute to the way the primary care team members manage diabetes in urban low socioeconomic status seniors, and the way that they provide self-management education for urban low socioeconomic status seniors. Figure 3 shows the primary care team characteristics and perceptions and their relation to diabetes management.

Figure 3

Primary Care Team Characteristics and Perceptions



Threats to Validity

External validity is the degree in which a study can be generalized to the outside population (Warner, 2013). There were threats to external validity in this study. This study had an exploratory design with a convenience sample. This study was completed in the field and outside variables such as care provider burn out and staffing limitations due to COVID-19 that have caused staffing decreases will not be able to be controlled. To

address this threat, I calculated and obtained an adequate sample size for all three RQs based on the total number of predictors.

The exploratory design had weaker internal validity by nature of the design. Internal validity is the degree in which results from a study can be used as evidence for a causal connection between variables (Warner, 2013). Participants may have rated their responses based on other factors such as beliefs, values, and achievements. Improvement of diabetes self-management skills may not improve quality of life. In fact, improved diabetes self-management may be a burden to some and detract from quality of life.

Ethical Procedures

To maintain ethical standards, I obtained Institutional Review Board (IRB) provisional approval from Walden University, then additional IRB approval from the collaborating project site. Prior to formal IRB approval, verbal agreement was established by the nursing leadership from the Health System IRB and the chairperson of the Health System IRB. A letter of support was obtained from the project site and submitted to Walden IRB. Walden IRB gave first provisional approval, with full approval when the collaborating site gave full approval. The Walden IRB approval number was 12-23-21-066299.

There were minimal ethical concerns to the recruitment of subjects. All subjects were given information about the purpose of the study and completed informed consent. Their participation was voluntary. Many participants worked in the same healthcare facility where I worked and may have felt obligated to answer the survey in a favorable way, and this impacted the reliability of the study. I required their time and responses for

about five to ten minutes during a one-time survey. All data was collected electronically. I accessed the population through email and maintained a remote relationship to help decrease the pressure to answer the survey favorably. Data was collected through Survey Monkey. All data collected was confidential. Data was secured in a locked private laptop and will be maintained for seven years. The data was handled by this writer. The results of the project were shared with the primary care office and care team. This disclosure was included in the informed consent. Data collection did not include names of identifiers to protect the participants.

I completed the study on site at my work environment. However, I worked remotely off-site and behind the scenes as a staff member for the last five years. I had no physical presence in the work environment, and I did not communicate with the patients or primary care team members. I had no authoritative influence over the care team, and I had no relationship with the participants of the study.

Summary

This chapter covered all the details to the research design and provided rationale for the study. The design was an exploratory study that used multiple correlation and MANOVA to examine the perceptions of primary care team members about diabetes and urban low socioeconomic status seniors. This chapter reviewed the population which was care providers for urban low socioeconomic status seniors. This chapter also described the DAS-3 data collection tool. The methods of participant recruitment through convenience sampling and informed consent were discussed. The data collection technique and data analysis plan were explained.

Chapter 4: Results

Introduction

Advances in the standards of care for geriatric diabetes management will continue to develop, and it is important for primary care teams to stay current with the newest guidelines and offer high quality care to their patients (O'Donovan et al., 2021). The purpose of this quantitative exploratory study was to assess the attitudes and perceptions among a group of primary care team members about the need for special training for providers who educate and care for patients, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes, and patient autonomy for urban low socioeconomic status seniors. The RQs and hypotheses that guided this study were as follows:

RQ1: Are there statistically significant relationships among perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$1: There are no statistically significant relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial social impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes.

H_a1: There are statistically significance relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control,

perceived psychosocial social impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes.

RQ2: Are there statistically significant differences in the ratings of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (PCP, nurse, dietitian, or social worker) among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$2: There are no statistically significant differences in the rating of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (PCP, nurse, dietitian, or social worker) among primary care team members for low socioeconomic status seniors with diabetes.

H_a2: There are statistically significant differences in the rating of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy based on team roles (PCP, nurse, dietitian, or social worker) among primary care teams for low socioeconomic status seniors with diabetes.

RQ3: What is the relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes?

$H_0$3: There is no statistically significant relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes.

H_a3: There is a statistically significant relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes.

This chapter provides a description of the data collection procedures that were implemented, such as the time frames for data collection as well as participant recruitment and the inclusion and exclusion criteria. In addition, a detailed description of the sample is provided. The descriptive statistics and the statistical assumptions for the data analyses procedures are addressed. Further, the results from the statistical procedures are provided, including the correlation analysis and MANOVA procedures.

Data Collection

Data collection occurred over a 4-week period, January 10, 2022 to February 3, 2022. This was the week following approval from the collaborating IRB and Walden IRB. An invitation email was sent out to professional groups that included primary care team members. The invitation included a brief description of the study, the study consent, and a link to the survey. The email was sent to 1,659 primary care team members in the area. Reminder emails were sent in Week 2 and 3 of the data collection period to increase the response rate. From the 1,659 invitations, 150 primary care team members participated in the study and responded to the survey. The response rate was 11%. There were no discrepancies in data collection from the original plan.

Baseline and Descriptive Demographics of the Sample

A total of 32 PCP participated, including 13 physicians, 18 advanced practice nurses, and one physician assistant. In addition, 91 nurses, 15 dietitians, and 12 social workers participated. The total number of respondents equaled 150. The average years of experience was 17.19, and the average age of the respondents was 45.13. The majority of the participants were female, 93% (n = 140) and 7% male (n = 10). I expected more male respondents; this would have been more representative of the population. Males dominate primary care roles, but females dominate nursing, dietitian, and social work roles (United States Department of Labor Statistics, 2021). Table 2 displays a breakdown of participant demographics including ages, years of experience, and the totals of male and female participants, according to primary care team roles.

Table 2

Demographics of Participants

Profession	Age	Years of experience	Men	Women
PCP	48.54	12.72	5	27
Nurse	46.68	19.85	3	88
Dietitian	42.13	15.73	0	15
Social worker	38.16	13.41	2	10
Total	45.13	17.19	10	140

The values for the five key study variables (perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy) were calculated by using the scoring guide developed by the creators of the DAS-3 tool (see Anderson et al., 1998). Table 1 illustrated the scoring guide. Of the 33 questions, the level of agreement or

disagreement was distinguished by *strongly agree* = 5, *agree* = 4, *Neutral* = 3, *disagree* = 2, and *strongly disagree* = 1. Reverse coding was required for questions Q2, Q3, Q7, Q11, Q13, Q15, Q16, Q23, and Q26 because the level of agreement was determined to be valued at the reverse score by the DAS-3 creators. Table 3 illustrates the number of items used to calculate each variable and the possible response ranges. The possible minimum score was the number of questions in the variable if the rating was 1, and the maximum was the number of questions in the variable times a rating of 5.

Table 3

Possible Response Scoring Ranges

Variable	Number of statements in the variable	Minimum	Maximum
Perceived need for special training	5	5	25
Perceived seriousness of diabetes	7	7	35
Perceived value of tight control	7	7	35
Perceived psychosocial impact	6	6	30
Perceived patient autonomy	8	8	40

Table 4 illustrates the frequency distribution of the responses, including the mean, standard deviation, minimum response, and maximum response. The actual minimal responses are greater than the possible minimum responses because the minimum responses would have required all the answers for the variable to be of a value of 1. The perceived value of tight control and the perceived patient autonomy had more variation in the responses.

Table 4

Summary of Responses

	Statistic	Perceived need for special training	Perceived seriousness of diabetes	Perceived value of tight control	Perceived psychosocial impact of diabetes	Perceived patient autonomy
N	Vali	149	149	148	149	148
	Mis	1	1	2	1	2
	Mean	23.28	30.36	25.99	26.30	34.64
	Std. Deviati	1.83	2.88	3.07	2.59	4.39
	Minimum	19	20	18	19	24
	Maximum	25	35	33	30	40

Data Analysis

A correlation analysis was completed to explore the relationships between the variables of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact and perceived patient autonomy. A MANOVA was conducted to assess if there was a relationship between the dependent variables (perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy) and team role. A correlation analysis was conducted to determine if there is a relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes. The following paragraphs describe the data analysis process in detail.

In Step 1, I uploaded the Excel data file from Survey Monkey to SPSS version 27. In Step 2, I ensured all data transferred correctly and demographic variables were labeled

and coded appropriately. Males were coded as 0 and females as 1. To establish values for the study variables, I applied the scoring protocol for the DAS 3 (see Anderson et al., 1998). According to the scoring protocol, Questions 2, 7, 11, 13, 15, 16, 23, and 26 were reverse coded. The individual questions were transferred into variable groups of need for special training, seriousness of diabetes, value of tight control, psychosocial impact, and patient autonomy. In Step 3, I analyzed the variables (perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy) through correlation analysis to answer RQ1. In Step 4, I placed the roles into four categories of nurse, PCP (physician, advanced practice nurses, and physician assistant), dietitian, and social worker, and conducted a MANOVA using the variables of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy to answer RQ2. In Step 5, I used correlation to analyze the variable of years of experience and value of tight control. I visually inspected the data and found no missing data.

Results

RQ1 was as follows: Are there statistically significant relationships among perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes? To answer this question, bivariate correlation analysis was conducted to evaluate the relationships among perceived need for special training, perceived seriousness of

diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes. Pearson Correlation was used to determine the strength and direction of a linear relationship between the variables (see Warner, 2013). Table 5 illustrates the results of the bivariate correlation analysis. There was a positive correlation with the perceived need of special training with the perceived seriousness of diabetes (r = .34, p = .00), the perceived psychosocial impact of diabetes (r = .54, p = .00), and perceived patient autonomy (r = .49, p = .00). The perceived seriousness of diabetes was also significantly positively correlated with the perceived value of tight control (r = .43, p = .00), the perceived psychosocial impact (r = .44, p = .00), and perceived patient autonomy (r = .25, p = .00). The perceived value of tight control had a negative correlation with the perceived patient autonomy (r = -.19, p = .02). Because the p-values were less than 0.05, I rejected the null hypothesis and accepted the alternative hypothesis: There are statistically significance relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes. Table 5 shows the results for the correlation analysis of variables.

Table 5

Results for the Correlation Analysis of Variables

Variable	Perceived need for special training	Perceived seriousness of diabetes	Perceived value of tight control	Perceived psychosocial impact	Perceived patient autonomy
Perceived need for special training		.34**	.03	.54**	.49**
Perceived seriousness of diabetes	.34**		.43**	.44**	.25**
Perceived value of tight control	.03	.43**		.07	-.19*
Perceived psychosocial impact	.54**	.44**	.07		.52**
Perceived patient autonomy	.49**	.25**	-.19*	.52**	

** Correlation is significant at the 0.01 level
* Correlation is significant at the 0.05 level

RQ2 was as follows: Are there statistically significant differences in the ratings of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact and perceived patient autonomy based on team roles (PCP, nurse, dietitian, or social worker) among primary care team members for low socioeconomic status seniors with diabetes? To test the null hypothesis, a one-way MANOVA was conducted using SPSS software version 27 and post-hoc test using

the Tukey HSD test to evaluate pairwise differences between the means. The results from the MANOVA analysis revealed no significant difference in the rating of perceived need for special training (p = .54), perceived seriousness of diabetes (p = .98), perceived value of tight control (p = .12), and perceived psychosocial impact (p = .22) based on team roles of PCP, nurses, social worker for low socioeconomic status seniors with diabetes There was a difference in rating for perceived patient autonomy (p = .02) based on team roles of PCP, nurses, dietitians, and social workers. The results of the MANOVA are illustrated in Table 6. The null hypothesis is accepted, and we can conclude that there is no significant difference in the rating of perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact and perceived patient autonomy based on team roles (PCP, nurse, dietitian, social worker) among primary care team members for low socioeconomic status seniors with diabetes. Table 6 shows the MANOVA results.

Table 6

MANOVA Results

Variable	Sum of squares	*df*	Mean square	*F*	Sig
Perceived need for special training	7.36	3	2.45	7.29	.54
Perceived seriousness of diabetes	1.66	3	.55	.07	.98
Perceived value of tight control	55.79	3	18.60	2.01	.12
Perceived psychosocial impact	29.94	3	9.98	1.51	.22
Perceived patient autonomy	185.70	3	61.90	3.37	.02*

*Correlation is significant at the 0.01 level

RQ3 was as follows: What is the relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes? A bivariate correlation was conducted to evaluate the relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes. The results of the analysis revealed a statistically significant positive association between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes. The value of tight control was significant to the years of experience ($r = .43$, $p = .00$). Table 7 illustrates the results of the correlation between the years of experience and the value of tight control.

Table 7

Correlations

Statistic	Variable	Value of tight control	Year of experience
Pearson Correlation	Value of tight control	1.00	.23
	Years of experience	.23	1.00
Sig (1-tailed)	Value of tight control		.00*
	Years of experience	.00*	
N	Value of tight control	148	148
	Years of experience	148	148

*Correlation is significant at the 0.01 level

Summary

Chapter 4 focused on addressing three RQs by examining the associations between perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact and perceived patient autonomy based on team roles (PCP, nurse, dietitian, or social worker) among primary care team

members for low socioeconomic status seniors with diabetes. Correlation was used to determine that there is a statistically significant relationship between the ratings of the variables by the primary care team members. MANOVA was used to determine the differences in ratings for the variables based on team role. The analysis found that there is no statistically significant relationship between team role and ratings for the variables. The third RQ explored the relationship between the perceived value of tight control and years of experience among primary care team members. Correlation was used to determine that there is a relationship between value of tight control and years of experience. The analysis shows that there is an increase in the perceived value of tight control as the years of experience increase.

In Chapter 5, these results are interpreted using the theoretical framework of the health belief model. Also, the findings are compared to current research literature and the limitations of the study are discussed. Finally, the implications for positive social change are considered and recommendations for further research and practice are provided.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative exploratory study was to explore the attitudes and perceptions among a group of primary care team members about the need for special training about diabetes for providers who educate and care for patients, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes, and patient autonomy for urban low socioeconomic status seniors. The study findings reflected statistically significance relationships among the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy among primary care team members for low socioeconomic status seniors with diabetes when these variables were analyzed through correlation. The variables were then analyzed by team role, and the study findings were that there was no statistical significance to the team role, except for the variable of perceived patient autonomy. The perceived value of tight control was analyzed in association with the years of experience. The results showed a positive correlation between years of experience and perceived value of tight control. In recent years, the value of tight control has been minimized in the standards of care (ADA, 2021). Tight control of blood sugars is hard work that requires diligence and a set routine (Andrich & Foronda, 2020). Moreover, geriatric patients who have tight control can suffer from diabetes burnout and run the risk of low blood sugar complications (Carneiro Vicente et al., 2020). The diligence required to sustain tight blood sugar control can decrease their quality of life and can even become a burden with their age-related deficits

(Andrich & Foronda, 2020). The ADA has recognized that tight blood glucose control reduces long-term complications, but geriatric patients should focus on quality of life as they may not live long enough for the long-term complications to manifest (ADA, 2021).

This quantitative study was undertaken to better understand the perceptions of primary care teams about diabetes and urban low socioeconomic status seniors. The ADA (2022) diabetes standards of care for older adults continues to evolve on a regular basis as more is known about diabetes care and treatment. New diabetes medication and technologies give primary care teams new tools to treat patients with diabetes. These new treatments also need to be applied to the appropriate patient populations (O'Donovan et al., 2021). Older adults may have comorbidities that decrease their life expectancy. Even if the geriatric patient has been involved in their diabetes treatment and has maintained tight blood sugar control, that tight control may no longer be advisable due to the risk of hypoglycemia and falls or other injuries (Tu & Liao, 2021). Primary care teams are the main providers of diabetes care for the older adults. Thus, health educators can provide education to primary care teams to help them deliver high quality care based on the latest standards of care. It is important that they are knowledgeable about the new standards of care and that they implement them to help geriatric diabetes patients decrease the burden of diabetes management and enjoy a high quality of life in their later years (Harris et al., 2021). Providers need to understand the effects of aging and the risk of accidents related to hypoglycemia in geriatric patients.

In this chapter, I interpret the results presented in Chapter 4 using the theoretical and conceptual framework of the health belief model. Also, the results are compared to

existing literature and the limitations are discussed. Finally, the positive social change of these findings is considered, and recommendations for further research and practice are provided.

Interpretation of the Findings

The ADA Standards of Diabetes Care for Older Adults has revised their recommendations in 2022 (ADA, 2022). Providers have been directed to consider the feasibility of recommending older adults with physical or cognitive limitations to use diabetes technologies for blood glucose control (ADA, 2022). The new standards instead focus less on blood glucose control for older adults. The burden of care outweighs the benefits of tight control. The ADA (2022) still promotes healthy lifestyle interventions such as healthy eating and structured exercise to help older adults maintain their functionality. However, the new standards focus on the prevention of overtreatment with medications as the costs of medications can be a burden to older adults, and the number of medications can decrease medication regimen adherence (ADA, 2022). The ADA recommends an appropriate medication regimen that sufficiently controls blood sugars but decreases the incidence of hypoglycemia.

The correlation between the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, perceived psychosocial impact, and perceived patient autonomy revealed that there are significant relationships among the variables as rated by primary care teams who care for urban low socioeconomic status seniors. The positive relationships between the variables shows that primary care teams have the perceptions that these variables correspond to diabetes care for urban low

socioeconomic status seniors. The negative relationship between the perceived value of tight control and the perceived patient autonomy is noteworthy because tight control requires compliance with a strict treatment regimen, which often decreases patient autonomy and limits their ability to have variation in their care regimen (Sibounheuang et al., 2019). It is difficult to have high patient autonomy and a high value of tight control. These two concepts seem to be at odds with each other. This may be why the perception related to the value of tight control has a negative relationship to the perception of patient autonomy.

The perceived need for special training is important to recognize as primary care teams have recognized that they have identified limitations in their ability to teach diabetes self-management education to patients versus their ability to treat diabetes (Al-Ali et al., 2020; Calenda, 2020; De la Cruz et al., 2019). In recognizing the seriousness of diabetes, primary care teams need to teach and communicate the complex concepts of diabetes to their patients in a way they understand (Kanumilli et al., 2021). Primary care teams' perceptions of diabetes influence their patients' level of engagement in diabetes self-management (Chironda & Bhengu, 2018). The value of tight control is less important for seniors with diabetes (ADA, 2021). The psychosocial impact can be recognized in the measure of quality of life. Barriers to diabetes self-management, including problem recognizing physical changes, and understanding diabetes can negatively affect the quality of life for urban low socioeconomic status seniors (Wu et al., 2019). Patients often find it difficult to operationalize the instructions given to them by the provider, where the providers feels that the patients did not completely follow the directions

(Aweko et al., 2018). The perceptions of primary care teams about the need for special training, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes and patient autonomy influence the care and education that they provide to their urban low socioeconomic status senior patients.

When the variables were considered based on team roles (PCP, nurse, dietitian, or social worker), there were no significant relationships between variables of the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, and the perceived psychosocial impact of diabetes. There was a statistically significant finding related to perceived patient autonomy. These results indicated that the role on the team did not influence the perceptions of diabetes care among primary care team members on the perceived need for special training, perceived seriousness of diabetes, perceived value of tight control, and the perceived psychosocial impact of diabetes for low socioeconomic status seniors with diabetes. Team role did influence perceptions on patient autonomy. Primary care teams are comprised of different members who each play an important and influential role in the care of the patient (Guo et al., 2020). They have diverse skills and knowledge that benefit the patient (Guo et al., 2020). Primary care teams may consist of physicians, physician extenders such as advanced practice nurses and physician assistants, nurses, dietitians, and social workers. Because there were no significant findings except for the perception of patient autonomy, each role on the primary care team has similar perceptions of the need for special training, the seriousness of diabetes, the value of tight control, and the psychosocial impact of diabetes. This creates a cohesive team. Differences in the perception of patient autonomy

may be attributed to different educational frameworks that each profession is based on. This is an area that needs to be further explored.

There was a statistically significant relationship between years of experience and the perceived value of tight control. Team members with less experience did not value tight control as much as their peers with more experience. The more experience a provider had with the urban low-socioeconomic status senior diabetes patient, the more they valued tight control. However, the value of tight control contradicts the current ADA standard that prioritizes quality of life and safety over tight control (see ADA, 2022). The results showed that there is a positive relationship between the years of experience and the value of tight control. New medications can provide the appropriate amount of blood sugar control for geriatric patients without the susceptibility of hypoglycemia (Karagiannis et al., 2021). Furthermore, primary care team members with more experience have a higher perceived value of tight control. Thus, primary care team members need training on the new ADA standards of care for geriatrics that center on quality of life and place less of a focus on tight control. Studies have found that deintensification of blood glucose control in older patients with Type 2 diabetes has better out comes for their overall health and quality of life (Seidu et al., 2019). In this study, I found that primary care teams continued to value tight control for older adults despite the standards of care that have called for a deintensification of medication regimen and blood glucose control.

Theoretical Framework

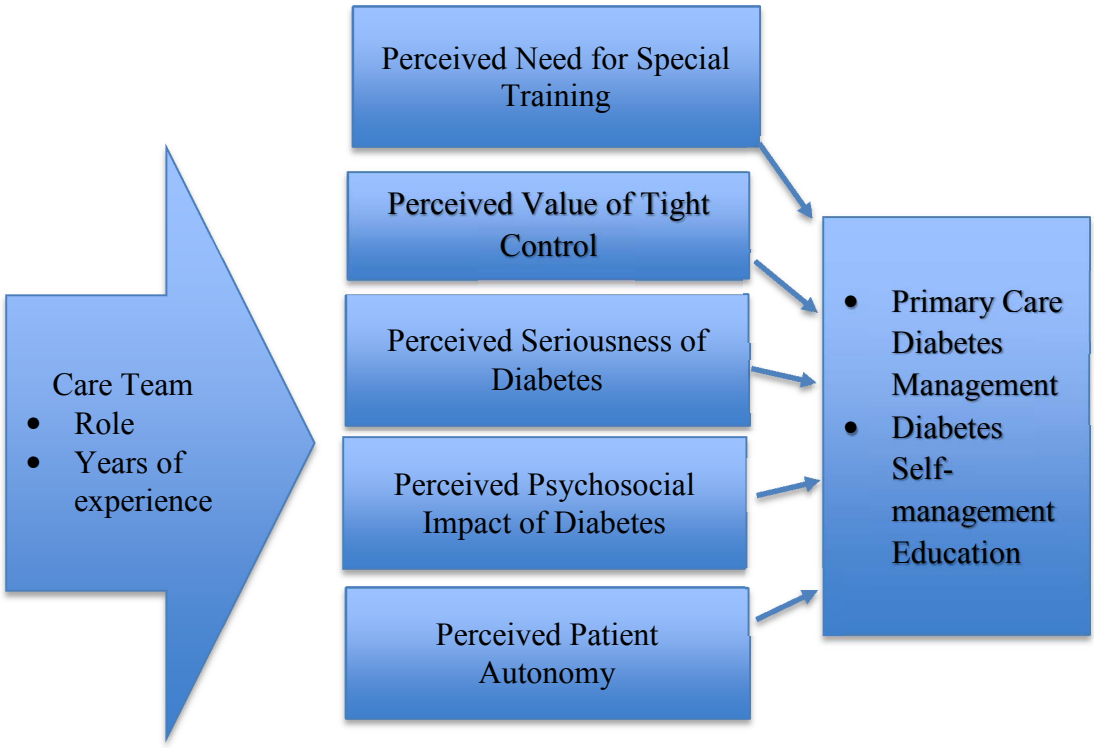
The health belief model was used to develop the conceptual framework that the role of healthcare providers in primary care impacted the way that they perceived diabetes in the urban low-socioeconomic status population. Using the DAS-3, the perceptions of the need for special training for care providers, the seriousness of diabetes, the value of tight control, the psychosocial impact and patient autonomy were considered. The health beliefs of the primary care team influence their management and treatment of diabetes (Koponen et al., 2017). Also, because of the changes in the ADA standards of care for older adults, the years of experience were considered with the perceived value of tight control. More experienced providers valued tight control and may be practicing under the old guidelines, while providers with less experience may have more exposure to the new guidelines in their education.

The care team's perceptions did not appear to influence their beliefs about the need for special training, the seriousness of diabetes, the psychosocial impact, and patient autonomy. Their role on the team only effected patient autonomy. In addition, their years of experience influenced their perceived value of tight control. The conceptual model seen in Figure 4 is not completely accurate. In contrast, the years of experience influenced the perceived value of tight control, and, therefore, influenced their management and treatment of diabetes. The perceived need for special training, perceived seriousness of diabetes, and perceived patient autonomy were not influenced by their role on the team. Instead, the care team's individual perceptions may influence their diabetes management and education, but these are not impacted by their role on the team. The

health belief model helps to understand how people make behavioral changes (Rimer et al., 2005). Diabetes management requires behavior change for treatment, and the primary care team provides the support and education for those changes. The perceptions of the primary care team on the value of tight control influence their urban low socioeconomic status senior's diabetes treatment and management plans. Figure 4 shows that the primary care team characteristics and perceptions influence diabetes management.

Figure 4

Primary Care Team Characteristics and Perceptions



The Standards of Care were developed to guide providers in the highest quality and safest care for their patients (ADA, 2022). The care team's personal health beliefs

and knowledge can affect their practice and the way that they care for urban low socioeconomic status seniors with diabetes (De la Cruz et al., 2019). The new standards allow for a holistic approach where consideration is given for comorbidities, quality of life, and life expectancy. Health educators can provide ongoing training on the standards of care.

Limitations of the Study

Due to the nature of this study, there were several limitations. This study was limited in nature by its correlational design. The variables that were included in the study were not manipulated; therefore, no causal relationship between variables can be inferred. Because correlational rather than causal results were obtained, this also limits the inferences that were able to be drawn from the results. The population selected to participate in the study was a convenience sample in the health system where I work. Because of the convenience sample, the generalizability of the results is limited. The results cannot be applied to other populations; instead, it is encouraged that the study is replicated to discover the results of other areas. The study was limited due to the time and scope of the dissertation process. The data collection period occurred during a large COVID-19 surge in the areas that placed further social distancing and professional burdens on the sample population. This may have affected their response to the survey as they were considering the heavy burden of COVID-19 on the older adults with poor health status. The use of the survey to collect data also increased the potential for missing data and errors in response selection by participants. Respondents missing more than half of the data were excluded from the variable when the variables were created and

excluded from the final sample. A sample of 132 was needed, and a sample of 150 was collected to account for any missing data. Data collection using interviews would have produced more detailed data, decreased the possibility of misinterpreting the question, and decreased errors in selecting the response. However, due to time constraints and the restriction of social distancing, the survey method was preferred for this study. Caution needs to be used when interpreting these results because of these limitations. Inferences can only be limited to this population. Additionally, the DAS-3 measured attitudes of the providers towards diabetes. It did not ask them directly about their practice of diabetes care. Their attitude towards diabetes could be different than their practice. For example, they may have the perception that older adults with diabetes should have less autonomy with their treatment regimen so that their blood sugars can be strictly controlled, but the provider understands that the practice standard is to allow the patient to have autonomy and participate in their care plan.

Recommendations for Further Study

The current study explored primary care team members perceptions of diabetes. The results of the study showed that there is a positive relationship between years of experience and value of tight control. This relationship needs to be explored further. More detail is needed to discover how primary care teams members of varying years of experience understand tight control. New technologies and medications are currently being developed. Updated diabetes standards of care are released yearly to include use of these technologies and medications for treatment. With new blood sugar monitoring technology and new medications that reduce the incidence of hypoglycemia, tight control

may be possible without increasing the burden of diabetes or increasing the urban low socioeconomic status senior risk for fall or other complication (Al-Ali et al., 2020). This study was designed as an exploratory study to determine if there were relationships between provider perceptions and diabetes. The role of an exploratory study is to formulate a problem for more precise investigation. More refinement is needed to better understand the relationships found in this study and develop causal relationships for the outcomes. Specifically, further research is needed to understand why there is a statistically significant difference in the rating of perceived patient autonomy based on team roles (PCP, nurse, dietitian, or social worker) among primary care teams for low socioeconomic status seniors with diabetes. More research is also needed to discover why there is a statistically significant relationship between the perceived value of tight control and years of experience among primary care team members for low socioeconomic status seniors with diabetes. More research will give insight as to how to approach education for experienced care team members. The standards of care for diabetes are updated yearly. Education needs to be provided timely and on an ongoing basis to keep working practitioners up to date on the latest care standards.

Implications for Social Change

This study explored the perceptions of primary care teams about diabetes in urban low-socioeconomic status seniors. Primary care teams are the front-line staff for senior populations. They provide ongoing care and treatments to help seniors stay out of the hospital and out of nursing homes. The primary care team plays an important role in providing relevant education at the appropriate learning level to seniors (Al-Ali, 2020).

The results of this study identified that there are differences in the value of tight control for senior populations based on the years of experience of the primary care team member. The changes in the standards of care call for looser blood sugar control for seniors with physical and cognitive impairments (ADA, 2022). The health beliefs of the provider may influence the care and treatment that they provide this population.

An opportunity for health educators is to provide education to primary care teams on the new standards of care for older adults. This education would increase the competency of the primary care team and the quality of care that they provide. Since the diabetes standard of care are released yearly, there is an opportunity to provide yearly education to the teams and increase provider engagement in adopting the latest standards of care. There is also an opportunity to provide health education to the urban low-socioeconomic status senior population. Education on their diabetes care can help them manage their disease and continue to live in the community. By working with this population, health educators can identify gaps in resources that may help seniors stay in their home environments versus going to the nursing home. Primary care teams can benefit from the resources of a health educator for both staff education and patient education.

This study identified primary care team members' perceptions of the value of tight blood sugar control increased with years of experience. This is not in line with the current standard of care. The primary care team members' perceptions of need for special training about diabetes for providers who educate and care for patients, the seriousness of diabetes, the psychosocial impact of diabetes, and patient autonomy for urban low

socioeconomic status seniors was not impacted by years of experience. The ADA standards of care for older adults has not drastically changed on these topics, instead the standards have evolved as current general practice has evolved. The ADA standards of care have changed for blood sugar control. Primary care teams need to understand the safety risks associated with tight blood sugar control.

Conclusion/Summary

This study explored the perceptions of primary care team members about diabetes in the urban low-socioeconomic status senior population. The perception of primary care team members influences their practice of medicine. Teams are mainly comprised of physicians, advanced practice nurses, physician assistants, nurses, dietitians, and social workers. The team functions to provide comprehensive care for the vulnerable population.

The RQs focused on primary care team members perceptions for diabetes based on team role and years of experience. I used the DAS-3 to collect information from 150 primary care team members who care for urban low-socioeconomic status seniors. The survey was administered over a four-week time fame in January 2022. Data was analyzed using SPSS version 27.

The study found that that there are relationships between primary care teams' perceptions of the need for special training about diabetes, the seriousness of diabetes, the value of tight control, the psychosocial impact of diabetes, and the patient autonomy. The study did not find a relationship between team role and the perceived need for special training, the perceived seriousness of diabetes, the perceived value of tight control, the

perceived psychosocial impact of diabetes, and perceived patient autonomy. However, the study did find an increase in the value of tight control with the years of care team provider experience. As the care and treatment standards of diabetes in the geriatric low-socioeconomic status patients evolves, health educators play an important role in teaching providers the new standards so that they can provide high quality and appropriate care to the populations that they serve.

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Appendix A: Personal Attitudes of Diabetes Questionnaire for Health Professionals

I am research provider attitudes about diabetes for urban low-socioeconomic status seniors. I am asking you to help by answering the questions in this survey. Participation is voluntary; you do not have to complete the survey. The questionnaire takes about 5 to 10 minutes to complete.

included with the survey. If you wish to participate in this research, please check the box below, and complete the survey. Thank you very much for your help.

- o I understand what I am asked to do in this research study and agree to participate.

Demographic Information

Please answer each of the following questions.

Q1. Profession:

1 Physician (please indicate area of practice)

2 Advanced Practice Nurse

3 Physician Assistant

4 Nurse

5 Dietitian

6 Social Worker

Q2. How many years have you been practicing your profession? __ __ yrs

Q3. Age: __ __ years old

Q4. Sex: 0 Male 1 Female

Diabetes Attitude Survey

Below are some statements about diabetes. Each numbered statement finishes the

sentence “In general, I believe that...” You may believe that a statement is true for one person but not for another person or may be true one time but not be true another time. Mark the answer that you believe is true most of the time or is true for most people. Place a check mark in the box below the word or phrase that is closest to your opinion about each statement for urban low-socioeconomic status seniors with diabetes. It is important that you answer every statement.

Note: The term “health care professionals” in this survey refers to doctors, nurses, and dietitians.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
In general, I believe that:					
1. ...health care professionals who treat people with diabetes should be trained to communicate well with their patients.	☐	☐	☐	☐	☐
2. ...people who do <u>not</u> need to take insulin to treat their diabetes have a pretty mild disease.	☐	☐	☐	☐	☐
3. ...there is not much use in trying to have good blood sugar control because the complications of diabetes will happen anyway.	☐	☐	☐	☐	☐
4. ...diabetes affects almost every					

part of a diabetic person's life.	☐	☐	☐	☐
5. ...the important decisions regarding daily diabetes care should be made by the person with diabetes.	☐	☐	☐	☐
6. ...health care professionals should be taught how daily diabetes care affects patients' lives.	☐	☐	☐	☐
7. ...older people with Type 2* diabetes do not usually get complications.	☐	☐	☐	☐
8. ...keeping the blood sugar close to normal can help to prevent the complications of diabetes.	☐	☐	☐	☐
9. ...health care professionals should help patients make informed choices about their care plans.	☐	☐	☐	☐
10. ...it is important for the nurses and dietitians who teach people with diabetes to learn counseling skills.	☐	☐	☐	☐
11. ...people whose diabetes is treated by just a diet do not have to worry				

about getting many long-term complications. ☐ ☐ ☐ ☐ ☐

12. ...almost everyone with diabetes should do whatever it takes to keep their blood sugar close to normal. ☐ ☐ ☐ ☐ ☐

13. ...the emotional effects of diabetes are pretty small. ☐ ☐ ☐ ☐ ☐

14. ...people with diabetes should have the final say in setting their blood glucose goals. ☐ ☐ ☐ ☐ ☐

15. ...blood sugar testing is not needed for people with Type 2* diabetes. ☐ ☐ ☐ ☐ ☐

16. ...low blood sugar reactions make tight control too risky for most people. ☐ ☐ ☐ ☐ ☐

17. ...health care professionals should learn how to set goals with patients, not just tell them what to do. ☐ ☐ ☐ ☐ ☐

18. ...diabetes is hard because you never get a break from it. ☐ ☐ ☐ ☐ ☐

19. ...the person with diabetes is the most important member of the diabetes care team. ☐ ☐ ☐ ☐ ☐

20. ...to do a good job, diabetes educators should learn a lot about being teachers ☐ ☐ ☐ ☐ ☐

21. ...Type 2* diabetes is a very serious disease. ☐ ☐ ☐ ☐ ☐

22. ...having diabetes changes a person's outlook on life. ☐ ☐ ☐ ☐ ☐

23. ...people who have Type 2* diabetes will probably not get much payoff from tight control of their blood sugars. ☐ ☐ ☐ ☐ ☐

24. ...people with diabetes should learn a lot about the disease so that they can be in charge of their own diabetes care. ☐ ☐ ☐ ☐ ☐

25. ...Type 2* is as serious as Type 1† diabetes. ☐ ☐ ☐ ☐ ☐

26. ...tight control is too much work.	☐	☐	☐	☐
27. ...what the patient does has more effect on the outcome of diabetes care than anything a health professional does.	☐	☐	☐	☐
28. ...tight control of blood sugar makes sense only for people with Type 1† diabetes.	☐	☐	☐	☐

Revised 12/18/98

Appendix B: Sample Population

Heather Santa Barbara <XXX@gmail.com> Mon, Sep 20, 2021 at 1:44 PM

To: XXX@gmail.com

Hi Lynda,

I am a RN and I am in a PhD program for Health Education and Promotion. My dissertation involves a 33-question survey about diabetes in the low-socioeconomic status senior population. I am looking for a sample size of 150 primary care team members from the area who work with this population. Team members include doctors, APNs, PAs, nurses, dieticians, and social workers. I was wondering if I could use your email group as one tool to get the survey out.

Please feel free to reach out to me with any questions. Thank you for your consideration,

Heather Santa Barbara RN, MSN, CDE, NEA-BC

Lynda Stiles <XXX@gmail.com> Mon, Sep 20, 2021 at 2:05 PM

To: Heather Santa Barbara <XXX@gmail.com>

Yes that would be fine

Heather Santa Barbara <XXX@gmail.com> Mon, Sep 20, 2021 at 2:31 PM

To: Lynda Stiles <XXX@gmail.com>

Thank you so much!

I will keep in touch when my proposal is accepted and the survey is ready to distribute.

Appendix C: Permission for Use

From: "Campbell, Pam" <XXX@med.umich.edu>

Date: June 27, 2021 at 1:43:25 PM EDT

To: Heather Santa Barbara <XXX@gmail.com>

Subject: RE: Diabetes Semantic Differential Scales (DSDS)

Dear Heather,

Of course, we just ask that you cite as indicated below.

Pam

From: Heather Santa Barbara <XXX@gmail.com>

Sent: Friday, June 25, 2021 2:56 PM

To: Campbell, Pam <XXX@med.umich.edu>

Subject: Re: Diabetes Semantic Differential Scales (DSDS)

External Email - Use Caution

Hi,

In reviewing the DSDS, I believe that the DAS-3 would better meet my needs. Is it possible to use the DAS-3 tool? Thank you, Heather Santa Barbara

On Tue, Jun 22, 2021 at 2:48 PM Campbell, Pam <XXX@med.umich.edu> wrote:

Dear Heather,

Please feel free to use our DSDS survey instrument located here: https://medicine.umich.edu/dept/diabetes/affiliated-centers/michigan-diabetes-research-center/resources/tools-health-professionals/survey-instruments

We just ask that you please cite our Center as follows: The project described was supported by Grant Number P30DK020572 (MDRC) from the National Institute of Diabetes and Digestive and Kidney Diseases.

Thank you,

Pam Campbell

Michigan Diabetes Research Center

Michigan Center for Diabetes Translational Research

University of Michigan Medical School

Remember to cite the Michigan Diabetes Research Center (MDRC) and/or the Michigan Center for Diabetes Translational Research (MCDTR) in publications:

"The project described was supported by Grant Number P30DK020572 (MDRC) from the National Institute of Diabetes and Digestive and Kidney Diseases" OR the project described was supported by Grant Number P30DK092926 (MCDTR) from the National Institute of Diabetes and Digestive and Kidney Diseases."

From: Heather Santa Barbara <XXX@gmail.com>

Sent: Tuesday, June 22, 2021 2:42 PM

To: Campbell, Pam <XXX@med.umich.edu>

Subject: Diabetes Semantic Differential Scales (DSDS)

Hi,

I am in the dissertation process at Walden University for a PhD in Health Education and Promotion. My interest is in diabetes self-management and the perspectives of providers. In my literature review I found mentions of the DSDS. I understand that you hold the

copyright. Would it be possible to get a copy of this tool and if possible use it in my dissertation? The purpose of the dissertation is to explore the primary care teams perceptions of diabetes self-management in the urban low-socioeconomic status senior population.

Thank you for your consideration,

Heather Santa Barbara RN, MSN, NEA-BC, CDCES