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Walden University
2019

Abstract

Cameroonian Immigrants ' Behaviors, Beliefs and Knowledge of Type 2 Diabetes: in Minnesota

by

Brendabell E. Njee

MA, Saint Cloud State University, 2011

BA, University of Douala, 1999

Dissertation Submitted in Partial Fulfilment

of the Requirements for the Degree of

Doctor of Philosophy

Health Care Administration

Walden University

June 2019

Abstract

Nondiabetic immigrants from Cameroon who migrate to Minnesota lack knowledge of risk factors associated with type 2 diabetes and face challenges accessing health care services. Nondiabetic immigrants from Cameroon lack culturally appropriate health care services and therefore find it difficult to follow providers' recommendations. This phenomenological study explored the perceptions and experiences of nondiabetic immigrants from Cameroon regarding access to affordable, quality health care services as well as their behaviors, beliefs, and knowledge of type 2 diabetes self-management. Bronfenbrenner's social ecological model provided the theoretical framework. Research questions addressed access to affordable health care services, knowledge, and perception of type 2 diabetes, dietary and activity behaviors, and awareness of diabetes self-management. A purposive sample of 13 nondiabetic Cameroonian immigrants participated in the study. Data were collected through in-depth personal interviews. Interviews were hand-coded, and NVivo was used to identify emerging themes. A key finding for this study is that participants leave their appointments without adequate information and continue living in poor health because they lack understanding of medical recommendations. The participants expressed concerns that their health care providers did not address their psychosocial needs in conjunction with physical needs. They also expressed interest in learning about healthy eating. Participants prefer to learn how to count carbohydrates and nutritional values of traditional food to help manage portion size. The social change implications indicate further training for health care professionals in physical and emotional needs of immigrant population from Cameroon.

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Dedication

This dissertation is dedicated to my family, my husband Joseph Ndombol Njee, who encouraged and supported me through this journey. Special thanks to my mother, Ma. Peggothy Eyindo Tong for your endless love and sacrifice towards your children's education. To my professors whose patience and dedication made this dissertation a success, I say thank you very much. To my late grandfather, Pa William Mbe Tong; my late cousin Susan Enowmbei; and my late aunty Ma. Agnes Orock Tong (all gone too soon), I hope our Lord Almighty God continues to grant you eternal rest.

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Thank you.

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Chapter 1: Introduction to the Study

Introduction

The 2014 National Diabetes Statistics from the Centers for Disease Control and Prevention revealed that an estimated 29 million people are living with diabetes in the United States (Li et al., 2014). Diabetes mellitus is a group of metabolic disorders characterized by an increase in blood glucose (Ogurtsova et al., 2017). Also featured is an inability of the islets of Langerhans in the pancreas to efficiently balance glucose with the hormone insulin (Bauer et al., 2017). The World Health Organization (WHO, 2014) reported a diabetes epidemic in different parts of the world with an estimated prevalence of 9%. There were approximately 50 million deaths reported from diabetes globally in 2015 (Ogurtsova et al., 2017). Ogurtsova et al. predicted a global diabetes prevalence of 642 million individuals by 2040.

An increased rate of diabetes creates social and economic burdens to individuals, families, and global society. In 2017, the American Diabetes Association (ADA, 2018) reported $327 billion spent on diagnosed diabetes patients. Further, in 2012, the United States spent about $245 billion on diabetes-related health care costs and loss of productivity (ADA, 2013). Given the amount of burden and impact that the risk of diabetes can have on individuals and families, immigrants from countries like Cameroon will benefit from early education and awareness of risk factors of type 2 diabetes as they settled in a new country. Diabetes preventive care knowledge is vital for U.S immigrants from Cameroon to maintain a healthy lifestyle and reduce health care costs.

Access to affordable quality and culturally tailored preventive health care services to immigrants from Cameroon may help reduce incidences of diabetes in this population. Individuals from Cameroon may also benefit from the 2010 Affordable Care Act (ACA), also known as Obamacare, with its focus on routine prevention and wellness. One of the ACA provisions was to provide affordable health care insurance to uninsured citizens to reduce costs and improve access to health care services for all Americans (Brown & McBride, 2015). Also, the Department of Health and Human Services supports an improved quality of life, preventing diabetes, promoting physical activity, and encouraging dieting to encourage weight loss (Florez et al., 2012).

The WHO (2016) identified diabetes as a chronic disease requiring effective policies and preventive strategies to support individuals in living healthy lifestyles. This includes healthy eating, physical activity, and access to affordable, quality health care. While type 1 diabetes is difficult to prevent, effective management of type 2 diabetes can help to avert other diabetes-associated chronic diseases, including heart attacks and strokes, which can lead to death (WHO, 2016). According to Abioye-Akanji (2015), individuals from African countries, including Cameroon, develop a strong attachment to traditional foods and face challenges adapting to eating different types of food after moving to a new country. Although African immigrants represent one of the fastest-growing immigrant populations in the United States, attending nurse practitioners still lack sufficient knowledge about Africans' health behaviors and beliefs.

Access to health care services and understanding of health care resources present a challenge to some African immigrants due to low literacy in the English language, an inactive lifestyle, and dietary problems (Njeru et al., 2015). Powers et al. (2015) recommended the inclusion of health education to inform cultural beliefs and individual behaviors in how people perceive diabetes. Primarily, culture plays a significant role in treatment. In this study, I explored the access to affordable quality health care services by nondiabetic Cameroonian immigrants living in Minnesota. I investigated access to affordable quality health care services and diabetes behaviors, beliefs, and knowledge of self-management of type 2 diabetes by immigrants from Cameroon now living in Minnesota.

Background

The American Community Survey of 2010-2012 reported a growth in the U.S. African immigrant population from 80,000 to 1.6 million (Gambino, Travelyan, & Fitwater, 2014). Among these African immigrant populations are people from Cameroon living in the state of Minnesota (Sewali et al., 2015). According to Sewali et al., African immigrants from six African countries, Cameroon, Somali, Kenya, Ethiopia, Liberia, and Sudan face health challenges such as obesity and diabetes because of an inactive lifestyle after living in the United States for more than five years.

Choukem et al. (2014) found the increased rate of type 2 diabetes among West African immigrants was closely associated with urbanization and a change in lifestyle. According to Choukem et al., the sample of West Africans reported limited physical activity along with a discussion of dietary concerns with clinicians. As a result, the researchers voiced concern regarding how much knowledge these African immigrants have about the risk factors of type 2 diabetes (Choukem et al., 2014).

According to Commodore-Mensah, Himmelfarb, Agyemang, and Sumner (2015), there is limited research about the U.S. African immigrant population separate from African Americans. Researchers grouping African immigrants and African Americans together can mask specific health risk factors directly related to recent immigrants from African countries. In this study, I focused on nondiabetic immigrants from Cameroon.

Individuals moving to cities from rural areas, both in Cameroon and in developed countries, change from consuming a diet of locally grown food to eating processed food. Choukem et al. (2014) reported Cameroonians who moved to developed countries like France were diagnosed with type 2 diabetes at a younger age than people living in Cameroon. Therefore, the change in diet may be a contributing factor to acquiring diabetes (Choukem et al., 2014).

In a study on the perception of dietary habits and risk for type 2 diabetes among Congolese immigrants, Ilunga, Tshiswaka, Ibe-Lamberts, Mulunda, and Iwelunmor (2017) found immigrants who traveled to developed countries underwent changes in lifestyle affecting both eating habits and physical activity. An inactive lifestyle and poor diet affect body metabolism, which may result in the onset of diseases like obesity and type 2 diabetes (Ilunga et al., 2017). Another risk factor for developing type 2 diabetes among immigrants from Cameroon is the cultural aspect of associating obesity with wealth and beauty. Ilunga et al. found American food, including fast foods, affects immigrants' health negatively while eating traditional Congolese food is more beneficial for participants' health. Participants also reported that before migrating to the United States, they ate indigenous greens and vegetables to help control blood sugar levels. They still prefer eating Congolese food as opposed to the American diet, the latter of which may be filled with condiments including ketchup, mustard, mayonnaise, salt, and pepper.

According to Sharma et al. (2007), people from Cameroon eat a wide variety of composite food using more than one ingredient without any record of nutritional content and measurement. The researchers surveyed 34 foods commonly eaten by Cameroonians to find any possible associations between diet and diabetes management. They noted a total of 197 recipes demonstrating the complexity of Cameroonian diets and variations from one region to another. Sharma et al. used the U.S. Department of Agriculture National Nutrient Database to calculate the nutritional content of these Southern Cameroon foods and identify the food nutrients consumed by participants. None of the Cameroonian dishes contained dairy products as commonly consumed in the United States. Also, only one composite Cameroonian dish included a type of fruit called plantains used in making plantain porridge. Since different tribes in Cameroon make different meals with these composite foods, the researchers had difficulty keeping track of the actual nutritional contents (Sharma et al., 2007).

Wafula and Snipes (2014) indicated that immigrants from Cameroon faced challenges in understanding and accessing U.S. health care because of low literacy rates and language barriers. Immigrants from Cameroon remain vulnerable to diseases like type 2 diabetes due to a lack of health care policies promoting access to health care services for these individuals. Thus, these people face challenges in receiving preventive care. Besides, although patients with limited English proficiency may benefit from interpreter services for medical care, Basu, Costa, and Jain (2017) advocated for the use of qualified medically trained interpreters to provide interpretation services to patients with limited English proficiencies, so they have an improved understanding of their medical conditions and treatment.

Sewali et al. (2015) found that individuals with low English literacy levels from countries such as Cameroon find it difficult to access health care and use healthcare resources because materials are printed in English. While some individuals may be educated in their home language, most may have difficulties comprehending the language used by health providers (Berger, 2013; Juckett & Unger, 2014). Since interpreters have not resolved this issue, one solution is to hire multilingual health care professionals.

Njeru et al. (2015) carried out a study about developing digital storytelling interventions to help African immigrants and refugees with limited English proficiency access health care for self-management of diabetes. In a partnership between researchers and community members, a collaborative approach facilitated understanding of community members' culture and lifestyle. In most cases, Njeru et al. found participants were unable to understand diabetes and received help from a family member who had a better understanding. Participants reported that cultural barriers to care included food cravings and giving up foods they enjoyed eating.

Problem Statement

Diabetes is a severe noncommunicable disease with global concerns regarding the prevalence of type 2 diabetes in different populations (Guariguata et al., 2014). Guariguata et al. conducted a data analysis of 174 countries in 2013 and reported a total of 381 million people had diabetes with an estimated growth to 592 million by 2035. Prevention of diabetes requires knowledge of risk factors and access to affordable, quality health care services. Immigrants and minority populations in the United States and Canada face challenges due to language and health literacy barriers that increase their risk factors and block healthy lifestyles (Shommu et al., 2016). In this study, I addressed the lack of accessible, affordable, and quality health care for nondiabetic Cameroonian immigrants in Minnesota resulting from cultural language barriers and behavioral differences in the areas of food, nutrition, and physical fitness. Minneapolis and St. Paul are among the cities with a significant African immigrant population increase (Venters & Gany, 2014). The 2010-2012 U.S. Census reported a total of 30,726 African immigrants from Cameroon and other African countries to the United States (Gambino et al., 2014).

According to Corrie (2015), 1,436 Cameroonian immigrants reside in Minnesota. However, this may not be an accurate representation, as a report from a 2008-2012 American Community Survey ranked Minnesota among the top 10 U.S. states with the fastest growing African populations (Gambino et al., 2014). According to Gele, Pettersen, Kumar, and Torheim (2016), immigrants from African countries lack knowledge of healthy eating and physical activity necessary for reducing the increasing rate of obesity and diabetes. In another study, Abioye-Akanji (2015) pointed out that immigrants from

Cameroon also lack the knowledge of meal portioning required for meal planning and proper management of diabetes. Franz, Boucher, and Evert (2014) reported that an evidence-based solution to diabetes self-management requires health care professionals' treatment of people as a whole person, which includes culture, beliefs, food, and religion.

Tsabang et al. (2016) found diet and inactivity were contributing factors to the rise of diabetes among Cameroonians. A typical diet consists of traditional foods such as fufu, ndole, plantains, and koki corn. Fufu is a grated and fermented carbohydrate meal extracted from plants like cassava, cocoyams, and yams. Ndole is a green leafy vegetable used in making soup with beef, smoked fish, and palm oil and eaten with starchy plants like cocoyams, plantains, yams, and rice (Mattei et al., 2015). Yams are starchy root plants with brown skin and usually yellow or white flesh inside. Some tribes in Cameroon use fresh black-eyed beans with cocoyam leaves and palm oil to make koki beans which are a source of protein eaten with boiled root plants like cocoyams, cassava, and plantains. These ingredients are commonly available in African and Asian stores in Minneapolis and St. Paul, Minnesota (Loots & Oh, 2016).

Another contributing risk factor to type 2 diabetes is physical inactivity. According to Gele and Mbalilaki (2013), inactivity is due to cultural beliefs and poverty among African immigrants. Gele and Mbalilaki advised that African women may benefit from the early intervention of physical education knowledge when they first arrive in developed countries to help maintain a healthy lifestyle. In their study, Gele and Mbalilaki found Africans residing in Oslo are plagued with poverty as most of these immigrants remain unemployed compared to other immigrants.

According to Akhidenor (2015), African American women come from a culture that tolerates unhealthy eating and inactivity, leading to an acceptable body image ideal for women. Connell et al. (2012) reported poor African American women living in poor neighborhoods to find it difficult to maintain active lifestyles due to a lack of resources. Gele and Mbalilaki (2013) recommended investment in culturally appropriate programs on healthy lifestyle for Cameroonian immigrants' upon arrival is necessary to help them remain healthy.

The U.S. health care system is responsible for taking care of its citizens, especially those suffering from chronic diseases such as type 2 diabetes. Li et al. (2014) described diabetes as a complex disease requiring the active involvement of patients learning about the disease and how to self-manage lifestyle with diabetes by improving glycemic control and reducing diabetes-related complications. Some examples of diabetes-related diseases include hypertension and cardiovascular disease for which patients are usually on long-term treatment to prevent death (ADA2015). The ADA requires patients diagnosed with diabetes to receive a diabetes nutritional education from a dietician to self- manage their disease and lifestyle (ADA, 2018).

Efforts by health care providers in Minnesota to reduce the risk factors of type 2 diabetes and obesity in the Cameroonian population require an understanding of type 2 diabetes, self-management, obesity, traditional foods, lifestyle, and access to quality affordable health care services. Most researchers who have studied diabetes knowledge have grouped African immigrants as one population (Abioye-Akanji, 2015). Therefore, Cameroonians merit investigations as a separate population from other Africans to identify their specific type 2 diabetes risk factors. This study filled this gap in the literature.

Purpose of the Study

The purpose of this qualitative phenomenological study was to explore (a) how well nondiabetic Cameroonian immigrants in Minnesota access affordable quality health care services; and (b) their behaviors, beliefs, and self-management knowledge in terms of type 2 diabetes. According to Mattei et al. (2015), although continuing to eat traditional staple foods when people move to a new country is acceptable, they must be mindful of consuming highly processed food with a high carbohydrate source. Mattei et al. concluded that a change in lifestyle such as a change in diet might result in increased rates of diabetes among African immigrants who consume many staple foods such as fufu made from cassava root plants and white rice.

Individuals' cultural beliefs and behaviors play a significant role in how people perceive diabetes because culture plays a vital role in treatment (Haas et al., 2013). To address cultural beliefs, researchers must pay attention to the type of food choices

included in nutritional education when working with patients who grew up in Cameroon and moved to the United States. In an acculturation study, O'Brien, Shuman, Barrios, Alos, and Whitaker (2014) found that Latino immigrants who moved to urban cities in the United States go through acculturation stages where family members experience changes in both eating and daily lifestyle. It is possible that Cameroonian immigrants follow a similar path of acculturation.

Majeed-Ariss, Jackson, Knapp, and Cheater (2015) recommended respect for the cultural eating habits of African American families when working with patients of this background. According to Majeed-Ariss et al., some African American patients with type 2 diabetes suffer from negative support motivation from family members who are overweight and do not see any reason to encourage healthy eating. On the other hand, some African American patients with type 2 diabetes receive positive support from family members to promote a healthy diet and lifestyle (Majeed-Ariss et al., 2015). While individual health behaviors play essential roles in the well-being of a person, the society and environment in which Cameroonian immigrants live can also affect the health of individuals as they struggle to adapt to the new host country (Abioye-Akanji, 2015).

Similarly, Al Sayah, Majumdar, Egede, and Johnson (2014) discussed the relationship between low health literacy and typed two diabetes care for low-income African American patients. The researchers found patients had difficulties understanding and filling out health documents due to low literacy. Besides, patients with lower health literacy were older, unemployed, and had low incomes (Al Sayah et al., 2014).

Research Questions

This study was guided by two main research questions and two sub questions.

RQ1: How do nondiabetic Cameroonian immigrants perceive access to services for the self-management of type 2 diabetes?

RQ2: How does the consumption of traditional foods influence nondiabetic Cameroonian immigrants' perception of type 2 diabetes?

SQ1: What connections do nondiabetic individuals from Cameroon living in Minnesota make between quality culturally appropriate health care services and behavior and self-management knowledge of type 2 diabetes?

SQ2: What connections do nondiabetic immigrants from Cameroon make between the consumption of traditional food and knowledge about type 2 diabetes?

Conceptual Framework

For this study, I used Bronfenbrenner's (1977) social ecological model (SEM) to explore the significant role of promotion of healthy human behaviors played by the five core levels; intrapersonal, interpersonal, organizational, community, and public policies (Bronfenbrenner, 1977; Sallis, Owen & Fisher, 2015). The health of an individual does not depend on the individual alone but undergoes influence by social interactions with other people, the environment in which one lives, and the different collaborative and coordinated care strategies for access to quality care available in the society (Bronfenbrenner, 1977).

According to Fisher et al. (2005), SEM is usable in the self-management of type 2 diabetes through an individualized plan with identified community resources and support to meet individual needs. SEM acknowledges that self-management is not something achievable by an individual alone; instead, self-management of a disease like diabetes requires collaboration and support from family members, friends, the community, health care providers, and the state through policies (McCormack, Thomas, Levis, & Rudd, 2017). For this study, I collected data on participants' access to health care services and their behaviors, beliefs, knowledge, and self-management of type 2 diabetes, which included food consumption, exercise, and lifestyle habits.

Nature of the Study

I employed a qualitative research method using a phenomenological study to explore the lived experiences of 13 nondiabetic participants from a Cameroonian community in Minnesota. I conducted in-depth interviews with open-ended questions asking about participants' access to and perceptions of health care, eating habits, behaviors, and lifestyle. These in-depth interviews were semistructured and lasted between 17 and 30 minutes.

Definitions

African immigrants: In this study, African immigrants are Blacks who were born in Cameroon and migrated to America (Ndukwe, Williams, & Sheppard, 2013).

Diabetes self-management: Powers et al. (2015) described diabetes self-management as including daily decisions individuals diagnosed with diabetes must practice by reducing the onset of other chronic illnesses.

Traditional food: Honfoga, N'tandou-Bonzitou, Vodouhe, Bellon, and Hounhouigan (2018) described traditional food as commonly consumed indigenous food associated with individuals in a given culture. In this case, consumption of these traditional foods and dishes plays a significant role in the lives of the people of Cameroon, with food culture usually passed from generation to generation (Honfeoga et al., 2018).

Assumptions

I made certain assumptions while conducting this research. I assumed respondents were cooperative and honest about their eating habits, physical activity, and other lifestyle habits. Since data collection depended on individual interviews, I assumed participants' honesty in responding to interview questions. I also assumed they had a command of the English language. I also assumed that Cameroonian individuals had formed cultural habits by age 25, which include eating and lifestyle habits that were difficult to change once they migrated to the United States. In a review of changes in eating habits among immigrant women, Popovic-Lipovac and Strasser (2015) reported that food habits are usually the last thing changed when immigrant women adapt to a new culture.

Scope and Delimitations

The scope of my research study was limited to nondiabetic Cameroonian immigrants ages 25 to 50 years and living in Minnesota. The geographic scope was limited to the state of Minnesota. Therefore, some issues may emerge went generalizing study findings across the entire population. All members of this chosen sample shared their experiences and perceptions of access to affordable quality health care services, as well as their behaviors, beliefs, and knowledge of self-management of type 2 diabetes. Delimitations are the factors I set for this study. I only interviewed nondiabetic African immigrants from Cameroon living in Minnesota, conducting all interviews in person at the participants' homes.

Limitations

To participate in this study, individuals had to be between the ages of 25 and 50 and be an immigrant from Cameroon who moved to Minnesota. One challenge was recruiting prospective participants who fit these criteria. Another limitation included some participants' shyness in responding to questions, resulting in short responses to some of the interview questions. Another limitation included the generalizability of results to other races and ethnicities.

Significance

Understanding Cameroonian immigrants' perceptions of access to health care services and their behaviors, beliefs, and knowledge regarding diabetes self-management and lifestyle could help health care providers identify risk factors of type 2 diabetes in this population. This could lead to improved access to health care services for immigrants from Cameroon. My research study provided additional information on the consumption of high carbohydrate traditional food by immigrants from Cameroon, which could assist health care professionals with interventions to support this population. I was able to gain a deeper understanding of participants' access to affordable quality health care services, and the impact on type 2 diabetes self-management knowledge, behavior, culture, and lifestyle concerning health and wellness.

Summary

Diabetes is a chronic noncommunicable disease with financial and emotional burdens on individuals from different populations across the globe. Nondiabetic immigrants from Cameroon living in the state of Minnesota need to learn about type 2 diabetes and have access to affordable quality health care services to prevent this disease. While immigrants from Cameroon have cultural attachments to traditional Cameroonian food, an understanding of healthy eating and practicing an active lifestyle are necessary for reducing the onset of type 2 diabetes (Abioye-Akkanji, 2015).

Because of the significant role culture plays in the lives of individuals, health care professionals must treat each patient as a whole person. Health care professionals working with immigrants from Cameroon must consider the educational background, family background, environment, and political influences affecting an immigrant's health

(Abioye–Akanji, 2015). While several type 2 diabetes researchers have focused on the African American population, the literature lacks studies that separated African immigrants from native-born African Americans. Therefore, this study fills this gap in the literature by focusing on Cameroonian immigrants. In this study, I explored how affordable quality health care programs should address the behaviors, beliefs, and self-management knowledge of type 2 diabetes in the Cameroonian immigrant population in Minnesota.

Using SEM (Bronfenbrenner, 1977), I showed how an individual's health is greatly impacted by the five core principles that are closely interrelated. According to this theory, some of the challenges in accessing health care include behavior, culture, low literacy, and ideas about obesity, wellness, and fitness. Immigrants from Cameroon also these challenges in addition to poverty in some cases, and a lack of English language proficiency (Derose, Escarce, & Lurie, 2007). African immigrants from Cameroon with low English proficiency depend on interpretation services and family members who understand health materials.

Using SEM requires attention to multiple levels of social interaction and takes into consideration personal knowledge, beliefs, and attitudes toward diabetes care (Schlüter et al., 2017). At the interpersonal level, SEM involves a focus on the social support people have, which includes that from family, friends, school, peers, and coworkers. At the organizational level, institutions and organizations are significant in supporting individuals. The community works in building relationships, cultural norms, and values (Bronfenbrenner, 1977). Finally, public policy comprises how different laws and regulations affect an individual's health at different levels by promoting social change within different communities (Bronfenbrenner, 1977).

In this chapter, I described the problem, purpose, research questions, significance, theory, assumptions, scope, delimitations and limitations, the significance of the study, and impact of the study. Chapter 2 includes a literature review to support my research and identify the gap in the literature.

Chapter 2: Literature Review

Introduction

The purpose of this qualitative phenomenological study was to explore (a) how well nondiabetic Cameroonian immigrants in Minnesota access affordable quality health care services; and (b) their behaviors, beliefs, and self-management knowledge regarding type 2 diabetes. Any study of this type must involve consideration of the cultural background of Cameroonian immigrants in Minnesota and the perceived knowledge of type 2 diabetes. Prevention of diabetes requires knowledge of risk factors, encouragement of a healthy lifestyle, and access to affordable, quality health care services.

According to Machi and McEvoy (2016), a literature review is a systematic critical analysis that includes the current scholarly knowledge on a topic synthesized from previous studies. I conducted this literature review to help identify gaps in the scholarly literature. The purpose of this review was to demonstrate the need for a study on the access to affordable quality health care services and the behaviors, beliefs, and self-management knowledge of type 2 diabetes for individuals from Cameroon. There are few specifically on Cameroonian immigrants and type 2 diabetes in the United States. Most of the researchers had grouped Cameroonians with African Americans under a single race instead of making distinctions by ethnicity. This gap in the literature pointed to the need for this study with participants who were nondiabetic Cameroonian immigrants. I found it necessary to review some studies older than five years because of the significant contributions they had to my research.

The sources I used for this literature review included research from articles, books, dissertations, and websites. The literature review comprised six sections; the theoretical framework of SEM, access to affordable health care, cultural beliefs, dietary preferences, barriers to affordable quality health care, and perceptions of type 2 diabetes. I used the Walden University library to access databases for initial searches with results from ProQuest, PubMed, Medline, and ScienceDirect. I also used Google Scholar to search for articles, linking the Walden University library to Google Scholar for more results.

Search terms and combinations of terms used included *social ecological model*, *(SEM)*, *access to affordable health care*, *prevalence of type 2 diabetes*, *World Health Organization (WHO)* and *type 2 diabetes*, *Cameroonian immigrants* and *type 2 diabetes*, *African immigrants cultural beliefs*, *African immigrants diabetes knowledge*, *Cameroonian immigrants cultural beliefs*, *Cameroon immigrants perception of type 2 diabetes*, *Cameroonian immigrants type 2 diabetes health behaviors*, *type 2 diabetes* and *Cameroonian traditional food*, *African immigrants language barrier to* health care *services*, and *literacy level*. The literature search returned a limited number of materials directly related to Cameroonian immigrants' knowledge of type 2 diabetes. A broad search, including *African immigrants* and *African Americans,* yielded a wider variety of information on type 2 diabetes to support this study.

Conceptual Framework

Bronfenbrenner's (1977) SEM theory guided this study. This theory is founded on the premise that the health of an individual depends on the interrelationship between people and the environment in which they live (Bronfenbrenner, 1977). Bronfenbrenner believed the health of an individual depends not only on the individual, but also affected on social interactions with other people, the environment one lives in, and the different health care policies in place in that area.

According to McCormack et al. (2017), SEM is a five-level health intervention approach useful for addressing health-related issues and promoting positive outcomes. McCormack et al. contended that the use of a combined multilevel intervention improved patients' engagement more than a single intervention. The five levels of intervention begin with an individual level of health-related knowledge, attitudes, health beliefs, perceptions of risk and benefits, values, and preferences (McCormack et al., 2017). The next level is interpersonal and contains patient-centered communication, skills, and social support from family and friends. The organizational level consists of infrastructure, implementation, and system integration to motivate patients in self-management. At the community levels, McCormack et al. encouraged the use of community-based programs, integrated public services, and health care systems. Finally, the macro level features a need to promote public policies, regulations, and incentives. The necessary accountability

is grounded in evidence-based strategies (McCormack et al., 2017). McCormack et al. stated a patient's health outcome should not rely solely on the individual, but on the engagement of different players from the five levels of SEM.

According to Sallis et al. (2015), the interrelation of intrapersonal, interpersonal, organizational, community, and public policies can influence the well-being of an individual. Therefore, people's social circle of family and friends can impact their health behaviors in positive or negative ways, depending on the socioeconomic background of the community. Sallis et al. added that the community could also influence an individual's behaviors in areas such as physical activity and diabetes self-management.

The daily self-management of diabetes requires that individuals take an active role in the treatment of type 2 diabetes by interacting with favorable organizations, community, and policies promoting people's health (McElfish et al., 2016). Bronfenbrenner (1977) stressed the roles individuals and their social environments play in diabetes, and its management, also with a focus on the availability of health resources (McElfish et al., 2016). Therefore, the guidance of diabetes self-management should include not only what an individual can do, but also a combination of individual efforts and environmental factors. McElfish et al. carried out a focus group with Marshallese population in Springdale, Arkansas, on diabetes self-management using SEM, with results showing barriers to diabetes self-management of the Marshallese society included those introduced by organizations, the community, and health care policies. Diabetes self-management requires collaboration and support from family members, community resources, the environment, health care providers, and state-level policies (McCormack et al., 2017).

SEM presents a framework for understanding how a multilevel system can affect individuals' behaviors and health outcomes (Albright, 2015). According to Albright, efforts to reduce the rapidly increased rate of type 2 diabetes requires addressing all four levels of human social interaction which include the individual, family, community and policy (Albright, 2015). According to Albright, each of these social groups has an impact on one's lifestyle and eating habits.

Cultural Beliefs, Dietary Preferences, and Barriers to Affordable Quality Health Care Services

There is still a lot to learn about barriers to affordable and quality health care for African immigrants relative to their cultural beliefs and dietary preferences (Wafula & Snipes, 2014). Wafula and Snipes searched over 150 databases on Black immigrants and health care access, including medical databases such as PubMed, Web of Science, Google Scholar, and Project MUSE. Their goal was to synthesize available data in the United States on quality of health care access among Black immigrants. Only 12 studies met the research criteria, which confirmed the gap in the literature associated with barriers to health care services access by Black immigrants (Wafual & Snipes, 2014). Their review showed factors such as low literacy among Black immigrants, language barriers, stigma regarding illnesses like HIV/AIDS, and lack of insurance until the passage of ACA (Wafula & Snipes, 2014). Cultural beliefs and religion stood out as the main reasons. Black immigrants delay accessing health care services, which often leads to a late diagnosis of serious illnesses such as cancer and HIV. Wafula and Snipes concluded that providing interpreters, cultural competency training for health care professionals, and community-based care helped to overcome barriers affecting Black immigrants in the United States. Immigrants from Africa are one of the fastest growing immigrant populations with an anticipated growth of 19% by 2050 (Wafula & Snipes, 2014). African immigrants face cultural barriers to accessing health care services when they migrate to the United States (Wafula & Snipes, 2014).

Like Wafula and Snipes (2014), Power et al. (20150 recommended that researchers include cultural beliefs and individual behaviors when examining how people perceive diabetes. Essentially, culture plays a significant role in treatment. Addressing the health care needs of individuals from different communities requires an understanding of their beliefs, attitudes, and customs (Issaka, Lamaro & Renzaho, 2016; Powers et al., 2015). More specifically, Cameroonian immigrants in Minnesota may carry cultural beliefs and attitudes that might hinder their physical activity. Researchers who explored exercise culture among African immigrants in the Midwestern United States found that immigrants from African countries have some cultural barriers affecting their ability to

exercise (Apiyo & Obeng, 2015). Cameroonians associate the size of a person's body with wealth and good living, which might act as a barrier to necessary physical activity. As Powers et al. (2015) showed, many African immigrants do not exercise because they do not want to lose weight.

Another cultural barrier to exercise and weight loss is that many Cameroonian women reported being unable to exercise in the presence of men (Apiyo & Obeng, 2015). Because of this, Issaka et al. (2016) and Apiyo and Obeng suggested using culturally appropriate programs to promote exercise for these African women. Issaka et al. believed individuals from Sub-Saharan countries benefited from programs targeting exercise, the risk of obesity, food choices, and practices to help dispel cultural myths of diabetes. One suggestion is that such women could exercise in a female-specific fitness facility. Gele and Mbalika (2013) reported physical inactivity because of cultural beliefs and poverty among African immigrants is a risk factor for type 2 diabetes. Another area of concern included immigrants from Sub-Saharan countries such as Ghana, Sudan, Zimbabwe, and Burundi finding ways of addressing communication and literacy issues affecting access to quality and affordable health care services (Issaka et al., 2016). It is essential to dispel beliefs implying diabetes is beyond an individual's control based on cultural values with respect for large body sizes (Issaka et al., 2016).

Cameroonian culture affects behavior changes, including nutrition and weight loss. Jack, Luburd, Tucker, and Cockrell (2014) noted the need to change behavior in patients who self-manage diabetes to prevent the onset of microvascular diabetes-related diseases. Changes in the patient's behaviors include nutrition change, drug therapy, and other health-seeking behaviors (Jack et al.,2014). Jack et al. recommended the use of culturally appropriate physician and patient discussions such that patients understand the health situations and recommendations for a lifestyle change. Also, the researchers suggested culturally tailored community approaches to address the cultural and economic conditions of African American women suffering from type 2 diabetes

Sewali et al. (2015) surveyed 996 African immigrants focusing on the prevalence of cardiovascular risk factors across six African immigrant groups in Minnesota, including Cameroonians. Some of the health-related problems faced by immigrants from

Cameroon were immigration-related, such as the length of stay in the United States, poor English language proficiency, and obesity leading to diabetes in some cases (Sewali et al., 2015). The lack of English language proficiency makes it difficult for immigrants from Cameroon to understand and use most of the health literature commonly written in English. Participants self-reported health behaviors like smoking and engaging in physical inactivity, leading Sewali et al. to examine these risk factors for immigrants from African countries to help design culturally appropriate health interventions to address immigration-related problems and behaviors of these populations. According to Aweko et al. (2018), language barriers between patients and physicians may also lead to poor diabetes self-management as it becomes difficult to design specialized care.

Cultural differences between the American health care system and the health care practices of some African countries can be challenging for Cameroonian immigrants. Following a qualitative study to explore African immigrant families' experiences of accessing health care services in Manitoba, Canada, Woodgate et al. (2017) found cultural differences posed barriers to health care services. Some of the female participants reported feeling uncomfortable having a male health care provider because their culture does not permit another male seeing their private parts (Woodgate et al., 2017). Their discomfort could be circumvented by having a female health care provider available to the female Cameroonian immigrants. Some African immigrant families reported having difficulties understanding the health care system because of having low income, a lack of knowledge of health care services, no health insurance, and feelings of being judged as a parent by health care providers (Woodgate et al., 2017). Wafula and Snipes (2014) also reported cultural and religious beliefs as the main reason African immigrants delayed seeking health care. The immigrants believed health care providers lacked cultural competency when working with the African immigrant population.

Inclusion of religious beliefs and attention to their effects on individual behaviors in managing type 2 diabetes is essential when providing African immigrants access to quality care. These religious practices and beliefs play significant roles in diabetes management. For instance, residents of the Marshallese community in the United States

believe diabetes has cursed their community, and that no matter what they do to prevent it, they will have it at some point in their lives (Wilkinson, Whitehead, & Ritchie, 2014).

Health care providers must show an understanding of patients' cultural background and health to foster partnership among the patient, community, and providers Jack et al. (2014) carried out a study using an illness narrative framework for health care providers to use in collecting information on patients' health behaviors to address their needs better. Therefore, health care providers working with immigrants from Cameroon need to understand patients' cultural and religious perspectives regarding type 2 diabetes to comprehend patients' health behaviors better. Sewali et al. (2015) also reported Cameroonian cultural and religious beliefs negatively affect an individual's effort to engage in physical activity. Such cultural and religious beliefs include a lack of conscious efforts in doing exercise and unhealthy eating of traditional foods.

Refugees and immigrants from West African countries may face challenges in adapting to a new country when they first move to the United States. Such problems may include adjusting to eating unhealthy food and being inactive as they can no longer walk to places like the farmers market and church—everyday habits in their country of origin. Ludwig and Reed (2016) reported refugees and immigrants from West African countries go through a change of diet after moving to the United States, which is a partial reason they develop chronic diseases and symptoms like diabetes and hypertension. Participants also reported that because of poverty, they are forced to eat cheap American food readily available at local stores (Ludwig & Reed, 2016), possibly leading to obesity and diabetes. African refugees and immigrants believe eating the American diet is unhealthy and can lead to diabetes. This confirmed Wilkinson et al. (2014) position that individuals' illness belief of diabetes can positively or negatively affect their life.

Perceptions of Type 2 Diabetes

The perceptions and sociocultural values individuals from Sub-Saharan African countries attach to body size image is essential when designing health interventions (Issaka et al., 2016). Issaka et al. conducted a focus group in Melbourne, Australia, with nondiabetic adult immigrants and refugees from Sub-Saharan African countries to explore participants' beliefs, perceptions, and attitudes on type 2 diabetes management.

The participants reported living a more sedentary lifestyle because of easy access to transportation (Issaka et al., 2016). Before their immigration, the immigrants from Cameroon were more active, walking to the farmers market to buy fresh food. After moving to countries such as Australia, and the United States, many Cameroonians, like other African immigrants, live a sedentary lifestyle which is closely linked to type 2 diabetes (Issaka et al., 2016). Results of the study indicated that practitioners and policymakers need to inform individuals from Sub-Saharan African countries early on about personal risk factors for type 2 diabetes while promoting healthy behaviors (Issaka et al., 2016).

The status of Black immigrants and perceptions of health care workers can sometimes act as a barrier to accessing health care services. Some immigrants believe health care workers assume the immigrants come from a population of illegal immigrants living without insurance (Wafula & Snipes, 2014). Wafula and Snipes noted that the negative perceptions Black immigrants have of American health care workers, and the health care system can affect appropriate assessment by health care service, providers.

Knowledge of Type 2 Diabetes and Barriers to Self-Management

Powers et al. (2015) described diabetes as a chronic disease. Those afflicted need daily self-management in terms of a diet and exercise to maintain a healthy lifestyle. Management of diabetes also requires personal knowledge of diabetes and the health care provider’s understanding of patients’ cultural and religious beliefs or the family to benefit from community resources (Powers et al., 2015). Creation of the diabetes self-management plan, according to ADA (2015), should be a collaboration between the individual, family members, physician, and other members of the care team. The ADA also recommended regular assessment of patients’ psychosocial and social well-being regarding the illness, including their knowledge, perceptions, attitudes, and beliefs about the disease and treatment. Some recommendations for type 2diabetes self-management include physical activity, smoking cessation, immunization, assessment for glycemic control, A1C testing, and healthy eating (ADA, 2015). Franz et al. (2014reported an evidence-based solution to diabetes self-management requires health care professionals’

treatment of the patient as a whole person, which includes culture, beliefs, food, and religion.

Barriers to quality and timely health care services can lead to late diagnosis of type 2 diabetes and chronic diabetes-related complications like hypertension. In a qualitative study on social ecology, McElfish et al. (2016) found that Pacific Islanders in Arkansas faced significant environmental barriers to diabetic care. Participants also reported barriers within the community, organizational problem, and policy barriers to health care. One hurdle to health care services as indicated by participants was not understanding the use of medical concepts and terminology during their doctors' appointments (McElfish et al., 2016; Woodgate et al., 2017). Further challenges included difficulties faced by the Marshallese when their insurance status changed from private to Medicaid. To this end, participants reported being unable to continue seeing the same primary care physician because most primary care offices do not accept Medicaid insurance (McElfish et al., 2016).

Behavioral and Psychosocial Characteristics

Behavior is influenced by the social, cultural, economic, and environmental factors contributing to a person's life (Salllis et al., 2015). Resources available within the community and the number of motivation people receive from family members, and friends can influence positive health behaviors. To prove the benefits of multilevel health care intervention, Haughton et al. (2015) carried out a four-level physical activity and cancer screening intervention of women from 16 churches in San Diego, California principally serving Christians from the Latina population. Their sample included 27 women enrolled in each of the 16 churches in addition to two to three women trained as leaders for the interventions. Through moderate to vigorous physical activities, participants used the church premises to take walks, perform cardio exercises, and build strength. The physical activity was open to all members of the church, which also played a role by announcing class schedules to remind participants and including information about physical activities in church bulletins. Results of these interventions included improved participant self-esteem and positive behaviors, a sense of empowerment, and the development of friendship (Haughton et al., 2015). Challenges to address in

promoting the use of SEM included an environmental change in areas of available rooms to encourage changes in health behaviors.

Jack et al. (2014) also acknowledged the need for behavior changes by patients who were self-managing diabetes to prevent the onset of microvascular diabetes-related diseases. Changes in patient behaviors included nutrition changes, drug therapies, and other health-seeking behaviors (Jack et al., 2014). Jack et al. recommended a culturally appropriate physician and patient discussion to the level where patients understood the health situations and recommendations for change.

Access to Affordable and Quality Health Care to Improve Health Outcome

Access to affordable and quality health care remains one of the goals of Healthy People 2020 to "to achieve health equity and eliminate disparities" (Koh, Blakey, & Roper, 2014). Challenges in accessing quality health care can harm people's health. In a qualitative study of 83 families, Woodgate et al. (2017) explored the challenges and barriers faced by the growing African immigrant population in Winnipeg, Manitoba, in accessing primary health care services. The researchers reported that, although immigrants from the African communities presented with more challenging health care problems, they continued to face barriers to access to health care services struggling to acclimate to the new environment and the weather (Woodgate et al., 2017). Wafula and Snipes (2014) also mentioned the African immigrants' challenges of English language proficiency as a barrier to accessing quality health care services. This barrier must be addressed to improve the quality of health for African immigrants. Other reported barriers included lack of employment, language barriers, cultural differences, and lack of social support (Woodgate et al., 2017). Participants stated their expectations were not quite met when they went to the hospital because of long wait times, challenges with navigating a new health care system, and shortages in health care providers (Woodgate et al., 2017). To address these issues, participants recommended a "let's buddy up" approach to promote networking among health care providers and African immigrant communities (Woodgate et al., 2017).

Access to affordable and quality health care services remains a significant challenge for African refugees and immigrants from West African countries such as

Liberia, Sierra Leone, Ghana, and Senegal (Ludwig & Reed, 2016). According to Ludwig and Reed, while many researchers have focused on African refugees' and immigrants' initial health on infectious and sexually transmittable diseases, a lack of literature exists on chronic diseases and how immigrants have fared with these conditions after resettlement in the United States. As Ludwig and Reed found as the number of refugees and immigrants from West African countries increases, experts must focus on access to health care services for those with chronic illnesses like diabetes and hypertension which participants reported as their primary concern in their community. In a qualitative study, refugees and immigrants from West African countries living in Staten Island reported having difficulties accessing health care services due to the high cost, their low literacy skills, and difficulties understanding instructions given in American English by health care providers (Ludwig & Reed, 2016). Powers et al. (2015) recommended having a system to address barriers to health care and education for people receiving regular self-management education. As part of the system, Powers et al. advocated easy access to social services and social factors such as medical care, housing, basic living needs, and safe living environments.

Chapter 2 comprised of literature reviews relevant to this study for exploring access to affordable quality health care services and the behaviors, beliefs, and knowledge of self-management of type 2 diabetes by immigrants from Cameroon living in Minnesota. The literature review included the theoretical framework of SEM cultural beliefs, dietary preferences, and barriers to affordable quality health care and perceptions of type 2 diabetes. SEM also pertains to knowledge of type 2 diabetes and barriers to self-management, which includes behavioral and psychosocial characteristics, and access to affordable quality health care. Chapter 3 contains the methodology research design, different procedures for the study, the role of the researcher, and ethical considerations.

Chapter 3: Research Method

Introduction

The purpose of this qualitative phenomenological study was to explore (a) how well nondiabetic Cameroonian immigrants in Minnesota access affordable quality health care services; and (b) their behaviors, beliefs, and self-management knowledge regarding of type 2 diabetes. Type 2 diabetes self-management among immigrants from Cameroon can be useful if health care providers have a better understanding of this population's diabetes behaviors, beliefs, and knowledge of self-management, as well as their limited access to affordable, quality health care services. Government and regulators should implement policies that reduce barriers to the access to quality health care by recognizing cultural and linguistic barriers. This may help in improving African immigrants' knowledge of diabetes and access to health care services.

Chapter 3 includes a detailed description of the qualitative method and design of the study, with an explanation of how I addressed the research questions: How do nondiabetic Cameroonian immigrants perceive access to health care services for the self-management of type 2 diabetes? And How does the consumption of traditional foods influence nondiabetic Cameroonian immigrants' perception of type 2 diabetes? Also, in this chapter, I explain the rationale for choosing a qualitative phenomenological approach for my study.

Research Design and Rationale

Phenomenological research design, according to Hailemariam, Fekadu, Prince, and Hanlon (2017), is a way to explore the experiences of participants during a phenomenon to analyze the situation. I selected a phenomenological research approach because it would enable participants to explain their experiences more naturally for information extraction. I used a semistructured interview approach with open-ended interview questions asked in the same sequence for all participants (see Ramani & Mann, 2016). I followed the open-ended one-on-one interview questions with probes when necessary to elucidate details and gain clarification about participants' responses (see Ramani & Mann, 2016). Information collected from participants served as a guide to how health care administrators and other health care professionals could collaborate to provide

affordable and accessible health care services to individuals who immigrated from Cameroon and other African countries with similar cultures.

Next, I conducted a descriptive data analysis of interview transcripts, identifying codes, and emergent themes to explore the details of participants' lived experiences (see Zhang, Yan, & Wildemuth, 2016). Beverly, Ritholz, Wray, Chiu, and Suhl (2017) described the qualitative methodology as a means to explore the meaning of people's experiences, cultures, and behaviors within a given environment to understand a given phenomenon. Qualitative research does not deal with randomization in the selection of participants. In most cases, the researcher can reach participants in a natural environment. Qualitative researchers use words, pictures, and various objects to carry out data analysis, which can be detailed and descriptive (St. Pierre & Jackson, 2014). Qualitative researchers embrace a study with a broad picture in mind and use words to analyze information collected from participants before reporting findings.

This study involved 13 nondiabetic immigrants from the Cameroonian community in Minnesota. I conducted interviews to collect information on participants' experiences with access to affordable health care services, as well as their behaviors, beliefs, and knowledge of self-management of type 2 diabetes in relation to consumption of traditional foods and lifestyle while living in Minnesota. All interviews took place at participants' homes, as per their preference. Participants were all between 25 and 50 years old. My underlying assumption was that by age 25, the individuals had developed certain cultural eating habits and lifestyles before migrating to the United States.

Role of the Researcher

Because of the small size of the Cameroonian population in Minnesota, I recruited participants using a purposeful snowball approach. I conducted all interviews and took field notes to help me remember time, place, nonverbal cues, and things happening in the environment at the time of the interviews (Sutton & Austin, 2015). I completed the transcriptions immediately after each interview, while the information was still current. Waller, Farquaharson, and Dempsey (2015) recommended using an easily accessible location with limited noise and distractions as provided at participants' homes. Also, I reported both positive and negative data collected to avoid any researcher bias. I

maintained participant privacy and anonymity with the use of pseudonyms for individuals and places (see Creswell & Creswell, 2017). Additional efforts to protect the human research participants included my completion of the National Institutes of Health Office of Extramural Research web-based training (certification number 2386256).

In any qualitative design, an increased chance of interviewer or participant bias can negatively impact the validity and reliability of the research study (Miles, Huberman, & Saldana, 2013). However, I controlled my personal bias throughout the study with the use of gender-neutral languages and avoided influencing the participants' responses by remaining objective. I remained neutral and avoided voicing my own opinions while collecting data from participants. I played the role of a good listener and observer, granting audience to participants as they responded to the interview questions (see Creswell & Creswell, 2017).

Methodology

Participant Selection

The selected population for this study was adult immigrants from Cameroon living in the state of Minnesota. The participants must have been nondiabetic African immigrants who grew up in Cameroon and moved to the United States after the age of 18 years. All selected participants had lived in Minnesota for at least one year, allowing me to assume the participants had some experience of life in the United States and Minnesota. Another reason for limiting the age of U.S. arrival at 18 years or higher was the assumption that individuals have formed lifestyle habits by age 18. Such lifestyle habits include cultural beliefs, perceptions, eating habits, exercise, health, and social networks, which might be hard to change (O'Brien et al., 2014). By 18 years, individuals likely have cultivated steady eating habits and attachments to traditional Cameroonian foods. They also have culturally relative attitudes and behaviors that may be difficult to abandon because of a change of health and the environment (Dickson, McCarthy, Howe, Schipper & Katz, 2013).

I used purposeful sampling and a nonprobability method of selecting participants for this qualitative study (see Etikan, Alkassim, & Abubakar, 2016). Participation in the study was on a volunteer basis. According to Etikan et al., qualitative researchers use

purposeful sampling to recruit participants based on specific characteristics. I used a recruitment flyer posted and distributed within the Westminster Presbyterian church, Minnesota, and community. A snowball sampling method allowed me to identify better participants who met the study criteria based on ethnicity, race, and health habits (see Etikan et al. 2016). The target population for this study included individuals between the ages of 25 and 50 years. The interview protocol was semistructured and in-depth, with interviews lasting between 17 and 30 minutes. I held only one interview with each participant, and all received a $10 incentive for their time. A self-designed interview protocol guided the collection of data from 13 nondiabetic Cameroonian immigrants in Minnesota. Participants had the option to withdraw from the study if, at any time, they became uncomfortable and distressed. However, all participants took part in the study without withdrawing. At the start of each interview, each participant completed and signed a consent form which featured a detailed explanation about the study, including participants' rights to voluntary participation and withdrawal.

Although a larger sample size has more credibility, O'Reilly and Parker (2012) argued the number of participants for a qualitative study is not superior to the quality of data collected. Researchers are ethically bound to follow ethical standards and report all data collected (Creswell & Creswell, 2017). The sample size for this study was 13 nondiabetic Cameroonian immigrants living in Minnesota ages between 25 and 50 years. To take part in this study, individuals must have been nondiabetic immigrants from Cameroon who volunteered to participate. According to Fusch and Ness (2015), saturation in data collection occurs when data collection from the sample no longer produces new information.

Instrumentation

Data collection took place throughout the interview process, with interviews preserved using an electronic audio recorder. Interviews were focused on participants' lived experiences. According to Hoover, Strapp, Ito, Foster, and Roth (2018), a qualitative research protocol should include identifying information such as date, time, setting, interviewer, and interviewees. Before conducting each interview, I established

specific instructions and guidelines to use throughout the dialogue. I also informed participants of the purpose of the study before the interview began.

Procedure for Pilot Study

A pilot study is an initial review that takes place before the planned study to test the instrument (Dikko, 2016). For the pilot study, I administered the interview questions to the first two participants to check if they understood the questions, making sure that I was getting the right type of data I was looking for. Both participants did not recommend any changes to the interview questions. I would have made changes if both pilot study participants recommended any change. I used their data in the study.

Procedure for Recruitment, Participation, and Data Collection

Data were collected through one-on-one interviews with each participant. Before each interview, participants were required to sign an informed consent form permitting me to audio record interviews. Data was collected through interviews, which lasted between 17 and 30 minutes. Interviews were recorded using an electronic audio recorder and were stored on a computer with a secure passcode. Data were later uploaded on Google Drive, where I will store them for five years before discarding. At the end of each data collection, I offered thanks to participants for taking the time to take part in the study.

Data Analysis Plan

According to Graue (2015), qualitative data analysis is about reducing data collected from participants to a manageable size without losing meaning. Data analysis consisted of reviewing audio-recorded interviews and then transcribing interviews verbatim into Word documents. Printing and hand coding transcripts allowed me to identify appropriate responses to the research questions to gain a full understanding of the meaning people attached to their experiences (Sutton & Austin, 2015), subsequently, grouping together recurring themes and categories. The purpose of identifying recurring themes was to find clusters of salient words or short phrases with meanings to answer the research questions. Developing identified themes from data came from describing participants' experiences based on their responses to interview questions. Data also facilitated a comparison of similarities and differences in participants' experiences with type 2 diabetes. I used

NVivo to aid in data analysis. Identified themes then helped in writing a detailed review of the immigrants from Cameroon and their lived experiences, behaviors, beliefs, and knowledge of self-management with regards to type 2 diabetes and access to health care services in Minnesota. All data collected for this study is included.

Issues of trustworthiness

I used interview probes and sort clarification from some of the participants' to ensure that I understood what they said in their responses. Some of the words repeated back to participants for clarity included phrases like what do you mean by that, is that correct, anything else, or did you mean? The participants were told they could have access to the published study if they wished.

Ethical Procedures

While a researcher might have good intentions when interviewing participants, a participant can become emotional due to the topic of discussion and past experiences. I made sure to not harm participants by respecting their views and protecting their well-being throughout the interviews (Flick, 2014). Researchers also must understand that depending on the topic of discussion. Interview sessions could become tense and uncomfortable for respondents. Therefore, I reminded participants they had the right to withdraw from the study at any time if they chose, and that if at any point during an interview, they felt uncomfortable, they had the right to stop and reschedule or cancel the interview. I made available a list of names and phone numbers of counselors and health care professionals if any of the participants needed their services; however, none of the participants did.

I followed the principles of the Belmont Report (1974; U.S Department of Health and Human Services, 2016) to protect the rights of human subjects in a biomedical and behavioral research study. I started recruiting prospective participants only after receiving the Walden University Institutional Review Board (IRB) approval, 01-04-19-049877. Participants received information about the security of personal data and the use of pseudonyms to maintain individual privacy throughout the research study. All male participants received an alias beginning with the letter J, while female participants are receiving pseudonyms starting with the letter M. Participants also learned of the benefits

of taking part in the study, which included providing diabetes behaviors, beliefs, knowledge of self-management and access to health care services from a Cameroonian immigrant viewpoint. This evidence-based knowledge could help health care providers deliver quality services when working with individuals from Cameroon. All participants signed consent forms and agreed to an audio recording of the interviews; besides, I took some notes during the interviews.

Summary

Chapter 3 included discussions of the research method and design for this qualitative phenomenology research study, the research method, and the use of open-ended interviews to collect rich research data from participants. Chapter 4 includes discussions of data collection, analysis, and implementation, and details about the analysis techniques. Also, I address each research question and present data to support the findings.

Chapter 4: Results

Introduction

The purpose of this qualitative and phenomenological study was to explore the accessibility if affordable and quality heath care by non diabetic Cameroonian immigrants in Minnesota. The study also discusses the immigrant's behaviors, beliefs, and self-management knowledge of type 2 diabetes. In this chapter, I examine the findings from 13 semistructured interviews with nondiabetic immigrants from Cameroon living in Minnesota. I used open-ended questions to gather data on participants' experiences related to access to affordable, quality health care service, in Minnesota, and their perceptions and knowledge of type 2 diabetes. I developed open-ended questions in the interview protocol to draw out answers to two research questions which framed this qualitative study.

This chapter includes an analysis of the main themes derived from interviews centered on Cameroonian immigrants' knowledge of type 2 diabetes and their access to affordable quality health care services. This chapter includes information on the pilot study, setting, and participant demographics. It also includes discussions of data collection, qualitative data analysis, and evidence of trustworthiness, a presentation of findings, and a summary.

Pilot Study

The pilot study and data collection began after I received IRB approval. The pilot study included the first two participants recruited from flyers posted in the community. According to Dikko (2016), qualitative researchers can use a pilot study to test the validity and reliability of instruments used to collect data. The pilot study results should confirm instrument validity and reliability and increase the reliability of the collected data.

Mary and John, the two participants in the pilot study, have each lived in the state of Minnesota for over ten years. I scheduled both pilot study interviews according to the participants' choice of place and time, which happened to be their homes. Each participant received a consent form, followed by an explanation of the purpose of the study. Each had time to ask questions before signing the consent form. Pilot study

participants were both nondiabetic immigrants from Cameroon who consented to participate. Each also agreed to the use of audio recording during the interview session. The pilot study participants said the interview questions were clear and did not need any improvement. As a result, I made no changes to the interview questions, which I had designed to align with the research questions. I used all the interview questions to test for clarity and feasibility.

I recorded interviews via an audio recorder on my phone and used a notebook to write down field notes. I used Microsoft Word to transcribe each interview verbatim to maintain participants' voices. I read through the transcripts several times and underlined repetitive words and patterns, and generated themes from the transcript responses to interview questions.

Setting

The research took place in the Minneapolis-St. Paul, Minnesota metropolitan area where the participants lived. I distributed flyers in churches and community centers. Potential participants contacted me face to face or by phone to share their interest in taking part in the study. During the initial screening, I told participants I would use pseudonyms to maintain privacy so that they would remain anonymous.

All interviews took place at the participants' location of choice, which, because it was an unusually cold time with temperatures in the -20 F range, was their homes. I planned trips accordingly, conducting the interviews in quiet places to provide privacy, avoid distractions, and reduce noise. In all but one case, the interview area lacked any noticeable noise. The one exception being a small child who wanted to be around his parents. None of the participants were distracted during interviews.

Demographics

The sample consisted of 13 immigrants from Cameroon living in the state of Minnesota. I used purposeful snowball sampling to select individuals who knew about the phenomenon being studied. I discussed particular criteria for this study with each participant, including the age range between 25 to 50 years and time living in Minnesota of not less than one year. Of all 13 participants, three were male, and ten were female. Only one female did not have health insurance at the time of the interview. All had lived

in the United States and Minnesota for at least three years before the interview dates. Six participants said they had a history of family members diagnosed with diabetes, although none could identify what type. Six participants also identified having friends with diabetes in their community. Only one participant said she did not know anyone in her community with diabetes because people from her immediate circle try to eat healthy (see Table 1).

Table 1

Patiet Demographics

Pseudonyms	Gender	Health insurance	Family history of diabetes	Friends history of diabetes
Mary	Female	Yes	No	Yes
Magdalene	Female	Yes	Yes	Yes
Martha	Female	Yes	Yes	Yes
Monica	Female	Yes	No	No
Maggie	Female	Yes	No	No
Mirabel	Female	Yes	Yes	No
Melissa	Female	Yes	Yes	No
Molly	Female	Yes	No	No
Megan	Female	No	No	No
Miranda	Female	Yes	No	no
John	Male	Yes	Yes	Yes
Jacob	Male	Yes	No	Yes
James	Male	Yes	Yes	Yes

Data Collection

I interviewed 13 immigrants from Cameroon who have lived in Minnesota for at least one year with data collection occurring over 20 days. The interviews, which ranged from 17 to 30 minutes in length, occurred in a quiet place in participants' homes using the same interview protocol for all participants. I used a field notebook to record observations and followed the semistructured interview guide (see Appendix D) to maintain consistency between participants. Digital audio recorded facilitated recording of individual interviews. Each participant had the same interview protocol and the same set of interview questions. I used probes to obtain more information and clarification of shared information. Data collection occurred as outlined in my IRB application. At the end of each interview, I thanked each participant for contributing to the study and provided a $10 stipend for their time.

Evidence of Trustworthiness

To maintain the credibility of the study, I used a digital recording of the interviews to transcribe participants' responses verbatim into a Word document making sure to keep the originality and accuracy of their answer. I used probes during interviews for clarity. I listened to audio recordings several times during the transcription process to make sure I understood what they said. To ensure the transferability of the study, I provided an overview of the research method, data collection process, and results from data collection. I used a phenomenological qualitative research method to provide rich descriptive data of the Cameroonian immigrants' lived experiences with access to health care services, perception of health care services, knowledge of self-management of type 2 diabetes, and behaviors and beliefs associated with type 2 diabetes.

I ensured the dependability of the study by conducting a pilot study with two immigrants from Cameroon who received and assessed the interview questions. I achieved confirmability in the study through triangulation and detailed descriptions of the research method to increase validity and reliability and reduce bias. The process involved using participant's interviews feedback from different cities in the Twin Cities area of Minnesota.

Results

Nine themes emerged from participants' interview responses. After reviewing each transcript and underlining codes, I grouped codes and came up with the nine core themes: (a) awareness, (b) experience, (c) knowledge (d) beliefs (e) change in lifestyle, (f) behaviors, (g) adaptation, (h) perception, and (i) motivation.

Research Question 1

I used data collected from all 13 interviews to answer the two research questions. The first research question was: How do nondiabetic Cameroonian immigrants perceive access to health care services for the self-management of type 2 diabetes? The nine themes that emerged from this research questions were (a) awareness, (b) experience, (c) knowledge (d) beliefs (e) change in lifestyle, (f) behaviors, (g) adaptation, (h) perception, and (i) motivation.

This question addressed the perceptions and lived experiences of immigrants from Cameroon related to their access to health care services in Minnesota. To answer this research question, I asked a series of open-ended interview questions from the interview guide.

Research Question 1 theme correspond to the following interview questions:

1. What does access to health care services mean to you?
2. What are your experiences with accessing health care services?
3. What does type 2 diabetes mean to you?
4. What do culturally appropriate health care services mean to you?
5. Do you think the health care services you receive from health care providers are culturally appropriate?
6. What are some examples of culturally appropriate health care services you have received to help you stay healthy?
7. How has your health and lifestyle improved since you started using health care services in Minnesota? If they haven't improved, can you tell me why you think this?
8. In your opinion, what are dietary behaviors? What are activity behaviors? How do you think these behaviors affect the risk of type 2 diabetes?
9. Would you please tell a story about trying to follow health care advice on staying healthy and preventing type 2 diabetes?
10. Tell me, how often do you go for an office visit with your health care provider? When do you go, what are your concerns? In your opinion, are the responses understandable? If not, why not?

Theme 1: Awareness. All 13 participants responded to the questions presented in the interview protocol. When asked "What does access to health care services mean to you?" participants revealed that, when they first moved to the United States, they did not know anything about access to health care services and health insurance. Now, access to health care services meant a lot to them, especially after living in the United States for some time. Mary said, "It means I know how to apply and get approved and how to use it." John said, "Health care services are important, and everyone needs a health care

service." Martha said, "Like proximity and how affordable it is." Jacob said, "How easy it is for me to get medical assistance if I need for one." Magdalene said, "Access to health care services should be top of your list." Monica said, "It means how soon you can get health care services," and "As a Black woman, it depends on how they interact with me and how the doctors and nurses take care of me." Maggie said, "If you have access to health care, you will be treated on time." Mirabel said, "It is the ability to get help from health care when you need one," and basically, "You must have health insurance to get help." Melissa said, "When you have access to health care services, you can have enough knowledge about what is going on with you, and you can seek preventive measures on how to take care of yourself." Molly said, "Here in the United States, you need health insurance, but where I come from in Cameroon, one does not need health insurance to access health care services because you have to pay out of pocket." Megan said, "Access to health care services means going to hospital or clinic to get help with the health problem." Miranda said, "I have a job, and I have health insurance, which is important to my family and me." James said, "Health care services means a lot as compared to where I come from, Cameroon."

A follow-up question to participants was, "What do you mean by I take access to health care services seriously?" In response, six of the participants said it was essential to have health insurance to access quality health care services. Mirabel said, "Basically, you must have health insurance." Molly said, "You need health insurance, but where I come from in Cameroon, one does not need to have health insurance to access health care services." Megan said, "It could be looking for health insurance." Miranda said, "I have a job, and I have health insurance that is good for my family and me." Two participants said access to health care services is vital to them because they go for yearly checkups. Two people stated that access to health care services helped them improve their lifestyles, with one person also noting access to health care services helped determine how soon one could get treated.

Theme 2: Experiences. All participants responded to the interview question, "What are your experiences with accessing health care services?" Six participants said they had good experiences with accessing health care services. Mary said, "I have a

regular doctor, I call my clinic every time I am sick, and then I get an appointment, and I go for checkup." Martha said, "I have access to health care, and like every three months, I can go to the hospital." Jacob said, "I have a lot of medical issues. I have issued health insurance, which I have been using." Maggie told a story about her mother coming from Cameroon to attend her wedding and becoming sick. Although her mother did not have health insurance, she was able to receive medical attention. Maggie said that "I thank God for where we are because we have access to health care no matter what your status is." Melissa said, "I have been here going to 14 years, and I have had four kids over the years. Having access to health care has been a big deal because I had to have prenatal services to get screened." James said, "So far, it's been good. We have a family doctor who is from India, and she is doing a good job explaining our health care services in a way that we understand."

Six participants said they had had some difficult experiences with accessing health care services. John said, "I guess it's been a long story, especially in the beginning when you are in the process of having your paper and having a permanent job before you can access health care. John added, "It has been a bittersweet experience, because if you do not have a social security number yet or you are still waiting for your green card, then it is difficult for you to have full access to health care services." Monica said it was challenging for her at first because "I was still in the process of getting my immigration papers." Mirabel said, "Normally as an immigrant and a new person who has been here only for three years, it is hard for people to understand you when you call to book an appointment." Mirabel added, "Sometimes you don't have the right number, and sometimes they do not understand you because of your accent." Molly said, "My experiences initially were different and challenging because the system is different from that of Cameroon because you need insurance, but when you first arrive, you don't even know how to get health insurance and go through the health care system." Megan said, "It has been difficult because when I had a full-time job, I had health insurance and could access health care services. Since I lost my job, I have not had insurance and have not been able to access health care services because the amount they are asking me to pay is so much that I cannot afford." Miranda said, "As an immigrant, when I first moved here,

I did not see health care services as important. When I had my first child, I saw how expensive it was. Then I realized the importance of having insurance. If I don't have insurance, then you must pay upfront out of pocket." One participant said she had mixed feelings about accessing health care services. Magdalene said, "Where ever I go, I see health care services, but at the same time, access to health care services is not that easy, so I turn to stay back sometimes because I see them, but they are not easy to access them because of the cost of services."

All 13 participants responded to the interview questions, "Would you please tell a story about trying to follow health care advice on staying healthy and preventing type 2 diabetes? Six participants related a story about trying to follow health care advice on staying healthy to prevent type 2 diabetes. Mary said, "I have been advised by my health care provider to exercise at least 30 minutes a day. I have also been advised to eat at least three meals a day because avoiding food will not make you lose weight." Magdalene said, "I was told to do exercise more and try to cut down on carbohydrates because the sugar will aggravate someone who has diabetes. I have been told to cut down on carbohydrate intake and to reduce the amount of fat intake." Maggie said, "I remember a time when I had put on a lot of weight. I went to my annual physical, and when I stepped on the scale, I was told that I was obese. I was told to start exercising and eat healthily." Melissa said, "When I first came to the United States, I became pregnant for my first child. I had gestational diabetes. I was monitored, and when I had the baby, it came back to normal. Since then, I continued to monitor what I eat. I did not take it for granted because it came back to normal." Megan said, "Some advice I have received included modifying your diet, do exercise, and always make sure to check your blood sugar to make sure that you are okay." James said, "My doctor talked to me about staying away from drinking pop, do exercise, and I have been trying to follow these bits of advice."

Three participants stated they had not received any advice from a health care provider to stay healthy. Martha said, "I have never had a story, but I am trying to avoid having type 2 diabetes by eating healthy." Jacob said, "I don't know, because I do not have too much information on the different types of type 2 diabetes." Monica said, "I have not worked with someone with diabetes, and I don't have diabetes, so I do not have

a story on that." Miranda said, "I have never gone through anybody who has given me health care advice to stay active. I am used to eating when we grew up because we are confident that they are natural."

Three participants responded by giving an example of an experience they had concerning diabetes, without saying if they had personally been advised to stay healthy. John said, "I will say I have a friend who has tried as much as possible to stay healthy, and he went to the hospital about two years ago and was told he is borderline diabetic. It has been difficult for him to lose weight and stay healthy, but it is tough for him to keep fit and cut down on eating stuff like rice." Mirabel said, "The health care advice I once had was in Cameroon that it is not good to overeat starchy food. It is good to eat protein food, do exercise, drink a lot of water, and avoid sugar." Molly said, "Yes, I am trying to stay healthy by staying away from sweet, especially as recently a lot of people I work with have diabetes. I am trying to avoid having diabetes in the future."

Theme 3: Knowledge: During the interview, all 13 participants responded to the question, "What does type 2 diabetes mean to you? Five participants knew type 2 diabetes. Mary said, "It means your blood sugar is high and needs control. You need to regulate your diet, exercise, and do some things that will bring them under control." Maggie said, "Diabetes comes based on certain conditions like obesity and hypertension. It may also come as a result of people just eating and not doing enough to take care of them self." Maggie added, "However, the good news is that you can maintain type 2 diabetes as opposed to type 1." Melissa said, "I know that it is very prevalent, and African Americans are predisposed to diabetes. Diabetes is a silent killer, and a lot of people don't know that they have it. Eating healthy and exercise also helps." Megan said, "Type 2 diabetes is a person that manages his/her blood sugar with dieting." Miranda said, "In a lay person's point of view, type 2 diabetes is based on your lifestyle, which includes what you eat and if you exercise. Another thing I know is that it is inherited."

Four participants said they did not know what diabetes was but gave examples of diabetes-related experiences with a family member or a friend. John said, "I am not sure," but "It had come to my experience when some of my relatives suffered from that, which is when I learned about it." He added, "They need to have access to health care services

to make sure that they are well controlled. They have the medications to control that and a health service provider to help with controlling that." Magdalene said, "I have a close relationship with people who suffer from the disease." She also offered "Type 2 diabetes means a disease or an illness that can be easily managed if the resources and services are readily available, and then you can live with it." Mirabel said, "From my understanding, type 2 diabetes is when your body can no longer produce insulin. When you are diagnosed with type 2 diabetes, as an African, there are some things that we have to stop eating and live your life with insulin." James said, "It means a lot to me because my father died from diabetes-related complications. Diabetes is one of those diseases that I am meticulous not to have. I am aware of what I eat. I stay away from drinking pop." Three participants said they do not know what type 2 diabetes is. Jacob said, "I have no idea of what is type 1 or type 2 diabetes, but I can't tell what they are." Monica said, "I am not informed about type 2 diabetes,", and Martha said, "I don't know for sure." Finally, Molly said, "I have very shallow knowledge of type 2 diabetes. From what I have seen, type 2 diabetes is a challenging illness that needs to be controlled with a lot of medical attention."

Theme 4: Beliefs. During the interview, all 13 participants responded to the "What do culturally appropriate health care services mean to you?" Five participants reported having some knowledge of what culturally appropriate health care services meant to them. John said, "My thinking is that if you have a health service that the people in that service know your culture, your background, and where you are coming from, I think it helps the patient to be free to explain to the health services provider to explain what they are eating and what they are doing." Magdalene said, "It means that my culture and background is being taken into consideration, which includes my tradition." Magdalene added that "I feel secure and confident once I know that there are health care programs which are designed with consideration of my culture." Magdalene went further to explain that "there is a lot that includes culture, such as language and how we translate certain things. In my culture, it is not easy because when we go to see a doctor and the doctor ask us how we are feeling, we answer that we are fine, or I am OK. We usually forget that we are at the hospital because we are not feeling well. This means that when

working with individuals from my culture, you must probe to get responses." Maggie said, "I will like someone to treat me concerning my religion." Melissa said, "When providers understand your culture, it gives them the ability to provide more focused care." Miranda said, "This means that you are receiving health care services that incorporate your way of life and your culture to help serve you better." Miranda gave some examples of culturally appropriate care to include "the food you like and what you do not like and how we can better serve you" Miranda also gave some examples of services such as "Interpreters for people who do not speak/understand English language to explain things in a language that they can understand." Monica said, "You are being treated and taken care of according to the culture of where you from. They understand that you are not from here, which includes your nationality and your race."

Two participants related culturally appropriate health care services to beliefs. Mirabel said, "I think that since I am from Africa and we have our own beliefs like if you are diagnosed with diabetes, then you don't need to eat certain food like starchy food." Megan said, "We believe in the use of natural herbs when we are sick, not going to the hospital. My first experience with the hospital was here at age 26 when I had my first child. I don't go to the hospital. Some examples of these natural treatments we had include a combination of pawpaw leaves, guava leaves, bitter leaves, and some other leaves that my grandmother used to cook and cover us under so the vapor can get into our body. At the end of this process, she will rub our body with a locally processed palm kernel oil, which is locally called miyanga. Sometimes my grandmother will boil bitter leaf and give use of the water to drink." Four of the participants said they did not know what culturally appropriate health care services meant.

Some Cameroonians felt health care providers were not sensitive to their culture because the providers did not use a holistic approach. Some participants felt the health care providers were only interested in the specific medical complaint at the time and not treating the person as a whole body, including the individual's background. Some participants commented subjects like diabetes were not discussed in their culture and were considered shameful.

During the interviews, all 13 participants responded to the question, “Do you think the health care services you receive from health care providers are culturally appropriate? To answer this interview question, three of the participants said yes, they believed the health care services they received from providers were culturally appropriate. Mary said, “Yes, I always tell my health care provider that I am a Christian, and he honors the fact that I’m a Christian, and he will treat me according to my faith.” Jacob said, “Yes, because most of the time when I go to the hospital, they ask me if I have a certain cultural belief that I don’t want a certain type of treatment.” Maggie said, “I will say yes because we are in a diverse society.” She added, “in health and schools, they are trying to teach people how to be aware of different cultures including diet, beliefs, and what you will expect and how to treat patients from certain backgrounds.”

Four participants said the services they received from health care providers were sometimes culturally appropriate. Mirabel said, “I can say it is 50/50 because some people will understand it, and some do not. Some health care providers will take time to explain things to you in a way that you will understand, knowing that you come from another culture.” Melissa said, “Sometimes, because when you meet with a provider who understands your culture and they will respect your culture. Providers who understand your culture will respect and treat you accordingly.” Melissa continued, “If you must pray several times a day, they will respect that and give you the services that are needed. This advice has mostly been about food, with examples like njamanjama that we like to eat. Njamanjama is a is vegetable that we cook and eat with fufu.” Miranda remarked,

> Some of the services are culturally appropriate, and some are not. I come from a society that we are not used to popping pills. For example, I had an experience once that I was having some back pain and was referred to meet with a pain specialist. When I went to the pain clinic, I was hoping that they were going to do something physically to get the pain off me, but to my greatest surprise, the provider went straight and ordered some steroid medication. This provider did not try any other method of treatment and did not even examine the area. I told the provider that I will not take steroid because I did not come here to get medication.

> I was hoping to at least try other types of interventions first like therapy because my primary care provider could have given me that medication.

Six participants said they did not think the health care services they received from health care providers were culturally appropriate. John said, “No, because sometimes providers do not understand my background and where I come from and the kind of things I do and like to help me.” Martha said, “No, I have never received any health care services, which relate to my culture.” Monica said, “I cannot say they are appropriate. One example I can give is that when I go to get a tuberculosis vaccine, the results always come out positive, and that is not correct because of where I am coming from. This result is not correct because I have never had TB disease and have never been treated for it.” Molly said, “Because we are from a different culture, I think it will be nice if the health care system will know a little about our cultural background because there are different health care challenges that we face.” Megan said, “I will say no, the health care services I received here are not culturally appropriate, we call such treatment the White man treatment, but we must go with it because this is what they have here. I call it White man treatment because where I come from in West Africa, we are used to using herbs.” James said, “I sometimes get frustrated, like when I took my son in who was sick. They said that he had low blood count, but they checked and could not tell us what the cause was.” One participant said she had to adapt to the health care services. Magdalene said, “It is culturally appropriate to the Americans, so I had to adapt to the American ways to get the services that I need, but from my culture, the answer is no.”

During the interviews, all 13 participants responded to the question, “What are some examples of culturally appropriate health care services you have received to help you stay healthy.? Three participants said they received culturally appropriate health care services to help them in staying healthy Maggie said

> “Include like the food, where they will teach about the portion and carbs amount on your plate. I think this is difficult to calculate the carbs because our foods are not well known. If I say something like corn chaff, which is made up of corn, beans, and other things like smoked fish, crayfish, and palm oil, this is not a well-known meal, so it is difficult to count all the carbohydrates.”

Melissa said, “My provider recommended I eat a smaller portion of fufu. This is difficult because there are no nutritional contents for me to go by. We eat until we are full.”

Nine participants said they had never received examples of culturally appropriate health care services to help them stay healthy. John said

> Well, here I can’t think of any health care services that are available coming from Cameroon cultural structure. Apart from just asking you where you come from and what you were doing where you were growing up, there is nothing that I can think of culturally that has to help me apart from talking to other people.”

Martha said, “Never.” Jacob said, “Most of the time when I go to the hospital, they only ask me about family history and diseases that are common in Cameroon and sicknesses common in my family.” Magdalen said, “The fact that I must think about it tells me that I can’t think of any culturally appropriate health care services I have received. Most of the time, I must adapt to receive the health care services that I need.” Mirabel said, “The only advice I have had is to reduce the amount to sugar and eat more protein.” Molly said, “I have not received any culturally appropriate health care services because when I go to the hospital, they only treat me according to what I am complaining about without any history or background knowledge about me Miranda said, “I haven’t received any here. What I am doing is trying to incorporate my way of growing into my lifestyle.” James said, “My doctor once told me that if I do not watch my weight, I could eventually suffer from diabetes. So, I try to eat healthily

Theme 5: Change in Lifestyle During the interviews, all 13 participants responded to the interview “How has your health and lifestyle improved since you started using health care services in Minnesota? If they haven’t improved, can you tell me why you think this.? In response, eight participants said their health had improved since they started using health services in Minnesota. Mary said,

> “I would say my health has improved because I have access to health care. I can see my health care provider every six months for regular check-ups, and I would think my health is improving because if anything is coming up just for the fact that I see my health care provider every six months, that can be addressed.”

Jacob said,

"I will say yes, it had improved because when I first came here and went to the hospital, I was introduced to so many things that I had never used. Especially, when I first got here, I was approaching 40years, and I was advised to do certain tests that I wasn't even aware of, like eye examination, sugar level, and high blood pressure."

Magdalene said, "I think they have improved. I have learned to be proactive with my health." She added, "I must see my primary care provider at least once a year. This has helped me to manage some of the illnesses that I had and some that I did not know that I had by seeing her frequently." Maggie said"

I think it had improved because when I was pregnant, we had follow-up feedback with other resources and programs to help you. I had gestational diabetes, and I had to see a dietician to help me with my diet. I became concerned about what I eat."

Magdalene added,

"The dietician advised me not to change my diet a whole lot, but to make sure not to overeat towards bedtime. The dietician also told me not to overeat food at the same time, and to try to change what I eat regularly because I told her I eat things like plantains, corn fufu, vegetables, and whole grains.

Mirabel said, "My health had improved because when I came, I had some minor illnesses. I took some medications, and I have been doing fine since then." Melissa said, "I think it has improved because I had healthy pregnancies." Miranda said, "I can say it has improved because so far, I have learned about some basic few basic things that I never knew about." Miranda added,

"I still have a problem with the health insurance system where even though you have health insurance; you cannot choose from where you want to go for help. This means that our choices are limited because you are limited to a specified location."

James said, “It has improved because I take care of what I eat and drink, and I feel like I have more energy.” Molly said she had both positive and negative experiences since she started using the health care services in Minnesota.

> When I first came here, I did not have a primary care doctor who knew me, but as times went by, I secured myself a primary care doctor. I had to explain more about myself because she did not know my medical history. Some of the experiences with health care providers were good, and some were bad. Whenever I had a bad experience, I never went back to that provider. Some good experiences include when I was pregnant; my provider made me feel comfortable and stress-free, especially as it was my first pregnancy.”
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> Four participants said they were not sure if their health had improved. John said, “I wouldn’t say that my health has improved because it is not like I had some health issue in the past to say that it has improved after moving here in Minnesota. I can say I have learned a great deal the things that I can do to improve or make my life better, rather than say that it has improved from one stage to another.”
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> Monica said,
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> “I don’t think I have had the best experience because I have gone to the hospital several times because of constipation and the problem has never been resolved, and this is over a year. I don’t think I have had a good experience with having access to health care services here in Minnesota.”
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> Megan said,
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> “I will not say they have improved because here we don’t do much activities and exercise. Back home, we do a lot of walking. We walk to the market, we walk to church, and sometimes we even walk to our job site. The only time we usually use a car is when we are traveling from one city to another, here, we go grocery shopping in a car, and use a cart for grocery shopping. I will say all these have impacted my health because I have put on so much weight.”

Martha said, “There have not been any real circumstances that I can say they have improved or not because I usually just go for checkup.”

Theme 6: Behaviors. During the interviews, all 13 participants responded to the question. "In your opinion, what are dietary behaviors? What are activity behaviors? How do you think these behaviors affect the risk of type 2 diabetes.? Nine participants expressed knowledge and awareness of what dietary and activity behaviors meant and how these two behaviors could affect their risk of type 2 diabetes. Mary said,

> "Dietary behaviors are behaviors we inculcate in our eating habits, like the type of things we eat, how we eat, the time, and how much we consume. Activity behaviors are how we behave and the things we do during our daily life or how much activity we include in our daily life."
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> John said,
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> "Dietary behaviors, I think of what things are we eat. Do you know what type of protein, the nutrients that you take? When it comes to daily activities, I have learned a lot, because back home, I used to play sports to keep fit, but I didn't know these things can help with your health."
>
> Martha said"
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> Dietary behavior means what you eat and how it affects your behaviors. Activity behavior is what you do. Some examples of foods I enjoy eating includes fufu and eru, which is one of our traditional foods from back home in Cameroon. This can affect your risk of type 2 diabetes and by overeating sugar, like cake."
>
> Magdalene said,
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> "Dietary behaviors are those behaviors you must take into consideration when it comes to your nutrition and well-being, being conscious of the amount of oil and fats that I consume, the amount of sodium that I consume. I also try not to eat after a certain hour. Activity behaviors include the activity that I do. I try to exercise at least three days a week so that I can have better health. It does have a positive influence because in some cases, type 2 diabetes depends on what you eat."

Monica said, "Dietary behavior includes the way you eat. Activity behaviors include exercise, like going to the gym. Both dietary and activity behaviors can affect

your risk off type 2 diabetes when you do not control your exercise and diet." Maggie said,

> Dietary behavior is how you manage what you eat. It is better to eat five smaller meals than to sit down at once and eat one big meal. Activity behaviors include exercise. I work overnight, so I go to the gym daily for an hour after work for me to maintain myself. Your diet and exercise help to prevent or reduce your risk of type 2 diabetes."

Melissa said,

> "Dietary behaviors include eating certain healthy diets that are appropriate to one's self. Activity behaviors include exercise, like walking. If you do not eat healthily, you can become overweight and obese. Becoming obese can present a risk of developing type 2 diabetes."

Megan said,

> "Dietary behavior is what you eat and the type of food you eat at a time of the day. Some examples of dietary behaviors include eating rice all the time, or someone who likes to eat fruits and vegetables all the time. Activity behaviors are behaviors that you intentionally want to change. These behaviors can affect your risk of type 2 diabetes, because if you eat a lot of carbohydrates, then this can cause your blood sugar to go up, then it will affect your health."

Miranda said,

> Dietary behaviors are the things you eat, the times you eat them, and how you eat them. Activity behaviors are your regular routines during the day, with examples like, do you stay home and sleep? Or you get up and do some activities like going to the gym and walking.? These behaviors play a significant role with diabetes, because if you are inactive and eat without finding ways to burn out those calories, then your chances of getting diabetes are high."

Four participants expressed some knowledge and awareness of what dietary and activity behaviors are, but we're not sure how these behaviors could affect the risk of type 2 diabetes because they were not sure of what type 2 diabetes is. Jacob said,

"What I eat and how the food I eat can affect me. Activity behaviors are things that I do that can affect my health. Example of the weather. During winter, I get joint pain, so I don't stay a lot outdoors. I do indoor activities. I do not know how these behaviors affect your risk of type 2 diabetes because I do not know what type 1 or type 2 diabetes is."

Mirabel said,

"Dietary behaviors are what you eat and the kind of food you eat matters to your health. Activity behaviors include your activity of the day, like sport, what you do during the day, like laundry. These behaviors affect your risk of type 2 diabetes in that if you do not exercise and you overeat sugar without doing activities, it can sometimes result in type 2 diabetes."

Molly said,

"Dietary behavior includes being on a diet or having to follow a particular diet because of an illness. It is challenging, especially when you are from a different country when you are used to eating certain delicacies. When you come here, you have to adapt to what is available to you here. Delicacies, to me, means the cultural foods that I grew up eating, such as ekwang, fufu, khatikhati, and ndole. I don't know what activity behaviors are. These behaviors can affect your risk of type 2 diabetes by overeating sugar and drinking a lot of soda."

James said, "I think it is when you eat certain things. Activity behaviors, I don't know."

All participants responded to interview question 10: "Tell me, how often do you go for an office visit with your health care provider? When do you go, what are your concerns? In your opinion, are the responses understandable? If not, why not.? Three participants said they took office visits and check-ups seriously and went for yearly check-ups. John said, "I go for check-ups every year, and I try to go every January. I think I have got some good responses. When you go for these visits, and you have an illness, they can catch it earlier." Magdalene said,

Like physicals, I do go once a year, but for other aspects that I have concerns with, like nutritional concerns, I go two to three times a year. The responses are

> understandable because my primary care has made me understand that my health depends on what I eat."

Miranda said, "I take my yearly check-ups seriously, and I make sure I go for this check-up to make sure something is not developing. Yes, I have been fortunate to have doctors that understand me and are encouraging."

Three participants said they went for offices visits twice yearly. Mary said, "I go to visit my health care provider every six months, and as needed when I get sick. All the responses are understandable." Melissa said, "went

> about once every six months, but if I have something like strep throat, I try to go for a follow-up visit to make sure that it is gone. I also go once a year for an annual general body checkup. An example is like every time I go to the hospital with an infection, and they give me an antibiotic with an explanation that is understandable.

James said, "I go about every six months; most of the time, I do not have any specific concerns. They are understandable because she takes time to explain things to me." Jacob said, "I go to see my provider at least about once every two months, but I see my psychiatric doctor once a month. My concerns sometimes include high blood pressure and my weight, which the doctor is trying to help me control." Martha said, "I go for office visits every Three months. My concerns are to check my blood sugar, blood pressure, and other things. Yes, I have been able to understand the responses." Molly said, "I try my best to go for check-ups, and if something comes up, I go and get it checked up. The responses are understandable because they carry out examinations, and most of the time, the results are being proven." Monica said,

> "I go for office visits once in a while, mostly because I am a healthy person. Also, because every time I go to the hospital, I try to explain myself, but I come out with the feeling that they did not understand my explanation of the problem."

Maggie said,

> With my routine of eating healthy and going to the gym, I have been able to stay healthy and don't even go for my yearly routine checkups. Sometimes when I

have concerns, I usually call for advice on what to do. The responses that I get are generally understandable.

Megan said,

"I have not gone to the hospital for a year because I do not have health insurance. The advice I used to get were understandable but difficult to follow because of the lifestyle we are living here, of always being busy with no time to exercises

Mirabel said, "I don't go for office visits."

Theme 7: Adaptation. To continue receiving health care services here in Minnesota, some participants decided to adapt to the American ways. All participants responded to interview question #5: "Do you think the health care services you receive from health care providers are culturally appropriate.? One participant, Martha said that "it was not appropriate to her culture." "It is culturally appropriate to the Americans, so I have decided to adapt to the American ways to get the services that I need, but from my culture, the answer is no."

In response to interview question #2, "What are your experiences with accessing health care services? Some participants said that when they first moved to the United States, they did not see the benefit of having health insurance because they were coming from a country without health insurance and they had to pay cash. These immigrants adapted to the American health care system. Miranda said, "When I had my first child, I saw how expensive it was, then I realized the importance of having insurance."

For question 6: "What are some examples of culturally appropriate health care services you have received to help you stay healthy? One participant said she had not received any culturally appropriate health care services. Instead, Miranda said, "What I am doing is trying to incorporate my way of growing into my lifestyle."

In response to interview question #8: "In your opinion, what are dietary behaviors? What are activity behaviors? How do you think these behaviors affect the risk of type 2 diabetes?" One participant said it was challenging for an immigrant like her to adapt to eating different food choices other than the delicacies from her home country. Molly said, "It becomes challenging when you come over here in the United States, and

you can no longer eat some of these delicacies. Delicacies to me, mean the cultural food that I grew up eating, such as ekwang, khatikhati, and ndole."

Theme 8. Perception: During the interviews, some participants presented different viewpoints on access to health care services and their experiences. On interview question 1, James said, "access to health care services means a lot to him as compared to where he came from Cameroon. "I go for yearly check-ups which I never did back home. I am aware of what I am eating, which back home we go with what we have."

In response to interview question 6, John said,

> 'I can't think of anything culturally that has helped me here to stay healthy, because, people just want to understand where you come from, the food you ate when you were young, or back home cultural dishes, apart from that, nothing else culturally."

Research Question 2

Research Question 2 was, "How does the consumption of traditional foods influence nondiabetic Cameroonian immigrants' perception of type 2 diabetes? The following themes emerged from this question (a) behaviors (b) experiences, (c) change in lifestyle, (d) awareness, (e) knowledge, (f) adaptation, (g) perception, and (h) motivation. These themes corresponded with the following interview questions:

1. What types of food do you eat to stay healthy?
2. What kind of exercise do you do to stay healthy?
3. Do you face any challenges, if any, in eating healthy and staying active here in Minnesota?
4. What do you know about type 2 diabetes?
5. What are some challenges in maintaining a traditional diet?
6. What are some concerns about type 2 diabetes in your community?
7. Tell me about a time you were told to eat healthily? What were some suggestions for a healthy diet?
8. Have you ever have a recommendation of the type of food to eat by a health care provider? If yes, what are some examples of food listed? Did the food listed include traditional food that you like to eat?

9. Tell me about your experience to learn about type 2 diabetes?

10. What effect does type 2 diabetes have on Cameroonians living in your community? What are you doing to prevent the onset of type 2 diabetes?

1. Is there anything you would like to mention that was not shared in this conversation?

Theme 1: Behaviors. All 13 participants responded to the question, "What type of food do you eat to stay healthy? Eleven participants reported they liked to eat traditional foods. Mary said, "I like to eat legumes and nuts. Legume is a boiled vegetable mostly with carbohydrates, like fufu with njamanjama." Martha said, "I eat vegetables like a bitter leaf, which we do not have here. We mostly buy them from Cameroon." Jacob said,

> "I have a mixed cultural food that we eat because my wife is from a different African country. We eat vegetables that we get from Africa, such as eru, and pumpkin leaves that we get from the farmers market. We buy these vegetables and freeze them. Sometimes we get dried bitter leaf from Cameroon."

Monica said,

> As an African woman, I mostly eat our traditional food. We eat African food not because they are different, but because we prepare them in our way. We believe in organic and healthy eating. Some examples of these African foods include plantains, bitter leaf, and cocoyams, fufu, and eru."

Maggie said, "I make healthy choices, like eating vegetables such as huckleberry, fufu, and plantains. I also like to eat vegetables and salads." Mirabel said, "Normally,

> I eat African food to stay healthy because we believe we have mostly organic food instead of food that is made with fertilizers. African food like yams, plantains, bananas, corn fufu, and rice sometimes, even though they are expensive. We buy them from African sops, which are exported from Africa, as we do not grow them here.

Melissa said, "I try to eat fruits and vegetables daily, like njamanjama and fufu corn." Molly said, "I eat vegetables like spinach and bitter leaf, which is a vegetable we get from Africa." Megan said, "I eat bitter leaf soup and huckleberry." Miranda said, "I

eat our African food. My children are all born here, but we eat mostly African food." James said, "I eat vegetables and stay away from things like pizza, even though I like pizza. I eat traditional food most of the time, such as huckleberry, corn fufu, and plantains."

Two participants said they ate everything but paid attention to the portion. John said, "I eat almost any type of food that I can, but I try to stay healthy. I try to manage the portions that I eat and how often I eat them. "Magdalene said, "Right now, I eat almost everything, I don't have any diet I follow. I, however, pay attention to the amount of food I eat."

All 13 participants responded to interview question 2, "What type of exercise do you do to stay healthy? Eleven participants reported they do some exercise to stay healthy. Mary said, "I do walks and dance. I try to dance and go for a walk at least three times a week." John said, "I walk, run a little bit, and play basketball once in a while. Walking is part of my habit." Jacob said, "I have a treadmill at home, and I try to exercise at least for 10minutes daily." Magdalene said, "I do a lot of weight lifting and strength exercise. I ride a bicycle a lot and walk. I try to walk at least seven to eight thousand steps daily." Monica said, "I do a lot of walking and a little bit of jogging. I do this about three times weekly." Maggie said, "I start up with the treadmill, yoga, dance, plank, and running at least three to four days a week." Mirabel said, "I go to the gym once or twice a week." Melissa said, "I like to walk. I used to go for a walk almost every day, but now that it is cold, I only go for a walk at least once a week. Most of the exercise I do during winter is in the house. I do a lot of stretches and walking inside the house." Molly said, "I run, jog, and I also do some yoga." Megan said, "I go to the gym and walk on the treadmill. During winter, I exercise at home. I do stretches, abdominal exercises, and walk." Miranda said, "I do walk, and a little bit of stretching. At work, I use mostly stairs instead of using the elevator, especially during winter." James said, "I go for a walk, I jog, and I do some push-ups. One participant said she does not exercise.

Theme 2: Change in Lifestyle. All 13 participants responded to interview question 3: "Do you face any challenges, in eating healthy and staying active here in Minnesota? Four participants experienced some challenges in this area. Mary said,

> "It is when I am unable to find the food I like to eat locally where I live. I have to drive very far to get them. Sometimes I end up eating things that I don't consider as nice because I have to drive far to go get them."

Melissa said, "I do have some challenges eating healthy and staying active here in Minnesota because of the crazy cold winter." Megan said, "Yes, especially during winter, when because of the cold, it is hard to get outside and do some exercises. Also, because of my work schedule of working nights, it is hard to get up and exercise, as I do a lot of running around." James said, "Sometimes yes, it is difficult to eat healthy because of finances. We do not have money to buy healthy food all the time."

Three participants reported using different ways to overcome their challenges in staying healthy and active in Minnesota. Jacob said, "I rarely eat out. We make mostly homemade food." Maggie said, "I buy fresh produce at farmers markets during summer and freeze them to eat during winter." Molly said, "I try to balance eating foods from back home and foods from here."

Five participants reported they did not face any challenges in staying healthy and active in Minnesota. John said, "I don't have any challenges of eating healthy food in Minnesota." Martha said, "No, because I don't follow anything like I want to eat healthily." Monica said, "I choose wisely what I eat and what goes into my system." Mirabel said, "I do not have any challenges that I am facing now." Miranda said, "No, I don't." Magdalen reported having some challenges at the beginning "Initially it was difficult because of the weather and not walking outside. Then I bought a treadmill that I use at home."

All 13 participants responded to interview question 7: "Tell me about a time you were told to eat healthily? What were some suggestions for a healthy diet? Five participants responded they had positive recommendations to eat healthy, including suggestions of what to eat. John said, "I was told to eat healthily and to cut down on rice consumption." Magdalene said,

> Let's talk about your diet. In the place of things like rice and yam, you can eat things like cauliflower. He asked me to increase the amount of vegetables like

broccoli and spinach. He also recommended I eat dark fruits like blueberries and raspberries, which are excellent in antioxidants."

Maggie said, "I was told to eat healthily and control my portion size." Melissa said, "When I had gestational diabetes, I was terrified about it. I was advised to rest and get enough sleep. Some suggestions for healthy things to eat were fruits and vegetables." Molly said, "I was told by my doctor to eat vegetables and have a balanced diet in my meals."

Four participants reported being told to eat healthily but were never given recommendations of what to eat. Mary said, "I was told to eat healthy at a time when I put on a pot of weight, and my doctor told me to control my diet." Jacob said, "My doctor once told me my weight was too much and asked me to try as much as possible to try and reduce my weight." Megan said, "I was told to eat a healthy diet and to try not to eat late at night." James said, "One time, my doctor told me to eat healthily, but did not give me specific examples of the type of food to eat."

Three participants reported they were not told by a provider to eat healthily and had never received a recommendation of what to eat to stay healthy. Martha said, "No, I cannot remember any time being told by a provider to eat healthily." Monica said, "I have never been told to eat healthily." Miranda said, "I have never been told to eat healthy, because the people that I am usually with other than those in my community, know nothing about my cultural food." One participant reported she had never received a recommendation to eat healthy by a provider, but she received advice from a family member to eat healthily. Mirabel said, "I got to learn about type 2 diabetes when I was living with one of my aunts who as a diabetes patient was telling me to mind what I eat to avoid having diabetes like her."

All 13 participants responded to interview question 8: "Have you ever have a recommendation of the type of food to eat by a health care provider? If yes, what are some examples of foods listed? Did the foods list include traditional food that you like to eat? One participant said she received recommendations of which foods to eat, including examples of traditional foods she enjoys, Maggie said, "We talked about palatines and peanut butter soup that I like. She told me that those I can continue to eat." Eight

participants stated they had recommendations of the type of foods to eat, but the given examples did not include traditional foods. Mary said,

> I was encouraged to eat healthy things like salad and exercise for at least 30 minutes every day. I try to exercise at least five days a week and drink lots of water, fluid, and eat nuts, and I also stay away from sugary foods.

John said,

> To cut down on rice, because I told my provider that I like eating rice, which is shared as a lot of Cameroonians want to eat rice. Traditional food recommendations are difficult because most of them do not know our traditional food. No, I haven't had any recommendation of what to eat, including traditional food."

Magdalene said, "He asked me to increase the amount of vegetables, like broccoli and spinach. He also recommended I eat dark fruits like blueberries and raspberries, which are good in antioxidants." Melissa said, "They told me that if I don't take care of myself, I will end up with diabetes." Molly said,

> "They were foods like spinach because that is a vegetable that is being grown here. I was asked to eat broccoli, which we do not have it in Africa. She mostly specified vegetables and fruits that are grown here."

Megan said,

> "They never include traditional foods, because some of the vegetables listed include things like broccoli and asparagus, which I never knew what it was. I went to the market, bought it, came home, but did not know how to cook it. So, I abandoned it."

Miranda said,

> I have once been told to lose weight, but I did not follow through because they were talking about the type of foods that I am not used to eating. I did not see any reason why I should be eating only salads, which in the first place, I am not used to eating because although I may lose weight, it will come right back when I go back and start eating my African food."

James said, “My family care provider just said, “eat vegetables.” And I asked her any vegetables? She said yes.”

Four participants said they never received any dietary recommendation from their provider. Martha said, “No, I have never had any dietary recommendation from my provider.” Jacob said, “No, I have not had that.” Monica said, “No, I have not had any.” Mirabel said, “I never had any recommendation from a provider.”

Theme 3: Knowledge. All 13 participants responded to the interview question, “What do you know about type 2 diabetes? Five participants reported knowing type 2 diabetes? Mary said, “Type 2 diabetes is when the blood sugar becomes high in the system.” Magdalene said, “I just know that once you have type 2 diabetes, your pancreases do not produce or regulate enough insulin as it should, then you must rely on medications or insulin that goes into your bloodstream.” Maggie said, “It is diabetes that you get along as you age based on your diet, weight, and other conditions like high cholesterol and hypertension.” Melissa said, “Diabetes is a silent killer and a lot of people don’t know that they have it. Eating healthy and exercise also helps.” Megan said, “Type 2 diabetes is that you can manage it with your diet of what you eat. Diabetes is when your body insulin is not working effectively, and then you must try to eat less carbohydrate food to balance it up.”

Six participants reported having some vague knowledge of diabetes without knowledge of the difference between type 1 and type 2. John said,

> “What I have taken note is if someone has diabetes, there are some things to do when certain things happen. In some situations, if someone is sweating too much, it might be the blood sugar is low and can help when you know what to do.”

Jacob said, “I don’t know about the different levels, which is type 1 and 2. I know sometimes the sugar is high or low. Sometimes people will need sugar in their blood, and sometimes they don’t need sugar in their blood.” Martha said, “Like overeating food containing sugar. Like drinking things like tea and cake, putting much sugar.” Mirabel said, “Type 2 diabetes means you have to start taking insulin, and you do not have to overeat carbohydrate food.” Molly said, “I know there are different types of diabetes, but I don’t know much about type 2 diabetes.” Miranda said, “I don’t know much about type

2 diabetes. It has something to do with your insulin imbalance. It has something to do with balancing your blood sugar by knowing what to eat and when to eat." Two participants responded they had no idea about what type 2 diabetes is. Monica said, "Nothing much, I know little or nothing about type 2 diabetes." James said, "I don't know."

Theme 4: Experiences. All 13 participants responded to interview question 5: "What are some challenges in maintaining a traditional diet?" All 13 participants reported facing challenges in maintaining a traditional diet. Mary said

> challenges include the accessibility to food, the kind of food. Traditional food is expensive, and sometimes we have to drive far away to go and buy the things that I cannot find locally in all stores in the US or my locality."

John said, "They are expensive and difficult to eat." Martha said, "They are expensive to get from here, so we wait when someone is coming from Cameroon to bring them." Jacob said, "We have difficulties getting some of the native food that we used to eat back home here." Magdalene said, "It is hard, costly." Monica said, "Driving for long distances to go and buy food. It takes a lot of time to find what we need to be able to cook the traditional food the way we like it." Maggie said, "It is expensive." Mirabel said, "Sometimes it is hard to find what we want to cook." Melissa said, "It is hard to figure out the carbohydrate content." Molly said, "It is time-consuming to cook because the foods are not processed." Megan said, "It is more expensive, and it is difficult to get it fresh because we usually get it dried from Cameroon." Miranda said, "Difficulties knowing how to measure the carbohydrate intake." James said, "Having the finances and also where to get it. We have a few stores that we can buy these traditional foods."

All 13 participants responded to interview question 9, "Tell me about your experience to learn about type 2 diabetes? Ten individuals reported having some experiences in learning about type 2 diabetes. Mary said,

> "When I took a food and nutrition class, and we learned some stuff about type 2 diabetes. I also have some friends who are giving with diabetes, and I also talk and visit with them, and they tell me stuff about it."

John said, “Family members, which has been quite a good experience for me as I learn about type 2 diabetes.” Jacob said, “Other than the stories we usually picked up from Facebook, I don’t have too much information on this type 2 diabetes.” Magdalene said, “I have had minimal experience, especially because my dad died of diabetes.” Maggie said, “Knowing about the causes of type 2 diabetes with an understanding that if you work hard on your diet and exercise, it can be stabilized.” Mirabel said, “I have attended conferences where they educate people about type 2 diabetes.” Melissa said, “It was when I was pregnant, and I had gestational diabetes.” Molly said, “It is prevalent right now.” Megan said, “My experiences of learning about type 2 diabetes from my doctor is that if you manage it well with proper dieting, then you can become diabetic free.” James said, “My doctor talked to me about diabetes and to try to eat healthily and stay away from drinking things like pop.”

Three participants reported they did not have experiences with learning about type 2 diabetes. Martha said, “I have never learned about it and have never had the opportunity to learn about diabetes.” Monica said, “I have learned nothing about type 2 diabetes.”

Theme 5: Awareness. All 13 participants responded to interview question 6, “What are some concerns about type 2 diabetes in your community? Eight participants mentioned they had concerns about type 2 diabetes in their community. Mary identified this as “when I see a lot of people from my community indulging to drinking.” John said

> “It is the perception that it might be running in your family and not that it might also be at risk of having type 2 diabetes, even if you do not come from a family with a history of diabetes. People are not well informed in some cases, and in some cases, it is that people only think is food eating the wrong food that can cause diabetes in general.”

Jacob said, “My wife has concerns about my weight.” Magdalene said, “People need awareness.” Maggie said, “People don’t like to talk about it. People see it as private and do not like talking about it.” Mirabel said, “I hope people are informed about the risk of type 2 diabetes.” Melissa said, “It is something that people don’t talk about it a lot in

my community, but we need to." Megan said, "There is so much lack of knowledge in our community about diabetes and diet."

Four participants reported not being aware of any concerns of type 2 diabetes in their community. Martha, Monica, and James each said, "I don't know." Molly said, "I don't know in my community because I don't know who has it or not." One participant also reported her immediate family was doing something to reduce the risk of type 2 diabetes in her community. Miranda said, "We only have about two people with diabetes, except there are some that I do not know of. We eat healthily."

Interview question 10: All participants responded to "What effect does type 2 diabetes have on Cameroonians living in your community? What are you doing to prevent the onset of type 2 diabetes? Nine participants reported type 2 diabetes had some effect in their community, and they were doing something to prevent its onset.

Mary said,

> "It makes you weak sometimes; you don't have the energy like you used to have when you did not have diabetes and need to limit your ability to be able to eat just what you like, because then your diet is restricted."

Martha said, "I know I have been living with some friends and family members with restrictions on certain types of food with sugar." Jacob said,

> "Myself, my prevention is on my food and exercise. On the Cameroonian community, I know a lot of people are diagnosed with it, and most of them advise us to eat healthily, reduce sugar, oil, and meat. So, we are trying to go organic now, or most of the time."

Monica said, "Diabetes comes from mostly not eating healthy. I advise people to eat a healthy diet." Maggie said,

> It is on a single base to create awareness. Two main things that people need to modify, in my opinion, is to take care of your diet and exercise. Also, staying away from things like cigarettes and alcohol will help you from having organ failures like liver and kidney failure, which can eventually lead to complications like diabetes."

Mirabel said,

> "In my community, I try to tell them about the impact of overeating sugar. I live with my sister who likes to eat things with a lot of sugar; I also tell her to reduce it. I have some relatives with diabetes who sometimes neglect their health, and I try to educate them about things like getting a diabetic shock."

Megan said, "Just educating my parents and my children." Miranda said, "In our community, we are focused on preventive cures by educating our parents on healthy eating." James said,

> My dad died of diabetes. It was challenging to manage the disease and also to get medications. Challenges managing the disease include eating the right food and having medical drugs. I try to stay healthy by doing exercise and also save some money to eat healthy things like vegetables."

Two participants said they did not know if people have type 2 diabetes in their community because people did not like talking about it. However, they tried giving some advice to people when they could to create awareness. John said,

> "This is one thing we have to work hard to bring awareness about these illnesses because it is hard to talk about the illness, as most people don't want to talk about it as there is stigma and people are ashamed. As a community, we need to work hard for people to start talking about it to spread the message and awareness to others. Also, with people's permission, we need to start talking about it. We can also create a forum where people can start talking about this type of diseases to help others in the community."

Molly said,

> I don't know how many people have type 2 diabetes in my community. However, some people are suffering from it, and some advice I can give concerning type 2 diabetes is for people to become aware of what they eat and what not to eat."

One participant reported that, although she was aware of the effects of type 2 diabetes in her community, she was not doing anything at this time to prevent the onset of type 2 diabetes. Magdalene said,

> "There is little I do about it because those that have it, don't talk about it, so it is hard to hear about the effect of it. You only hear about it, when those that have it

> are at their end stage of dying at that very last stage. Then you go like, oh, diabetes, then you were eating and dying. Many Cameroonians and other Africans do not understand that diabetes is an illness that you can manage. People will say that it is a White man disease, and they do not follow advice from the doctors."

Theme 6: Adaptation. All 13 of the participants responded to interview question 1: "What type of food do you eat to stay healthy?" One participant responded she had decided to adapt to buying food during the summer and save it for winter, making sure she had the food she liked throughout the year. Megan said,

> "I eat bitter leaf soup, which is a type of vegetable that we grow back home in Cameroon, and huckleberry, which we buy from the farmers market during summertime and process to keep in the fridge to use throughout winter."

All 13 participants responded to interview question 3: "What challenges, if any, do you face in eating healthy and staying active here in Minnesota? Three participants reported that despite the challenges, they decided to adapt to the climate and availability of food choices that they like to eat. Mary said, "Sometimes I end up eating things that I don't consider as nice because I have to drive far to get them." Maggie said, "I will say no because I use the farmers market to my advantage. I do have two freezers that I buy fresh produce from the farmers market during summer and freeze them to eat during winter." Molly said, "I try to balance eating foods from back home and foods from here." James said, "Sometimes, yes, it is difficult to eat healthy because of finances. We do not have money to buy healthy food all the time."

All participants responded to interview question 5: "What are some challenges in maintaining a traditional diet? Four participants reported facing some challenges in maintaining a traditional diet but had decided to adapt their eating habits. Jacob said, "We have been able to defeat that challenge because we have resolved to buy some local things that are like those foods we used to eat back home" Monica said, "Sometimes we have to send money to another state to for someone to buy and send it to us here in Minnesota." Molly said, "We do not have a wide variety of African food here because only some of it is being sold here, and they are expensive." Megan said, "It is difficult to

get it fresh because we usually get it dried from Cameroon when we travel of family members and friends bring it from Cameroon."

All 13 participants responded to interview question 8, "Have you ever have a recommendation of the type of food to eat by a health care provider? If yes, what are some examples of food listed? Did the food listed include traditional food that you like to eat? Three participants reported deciding to adapt their eating habits to stay healthy. The examples of food recommended by their providers did not include the traditional food they like to eat. Jacob said, "No, I had not had that, except when the doctor asked me to work on my weight. My wife and I decided to do some research on the things we need to cut out." Magdalene said,

> "I had just had a baby and had put on a lot of weight, which was affecting my posture. I talked to my medical doctor. He said that I am not going to put you on any medication, but let's talk about your diet. In the place of things like rice and yam, you can eat things like cauliflower. He asked me to increase the amount of vegetables like broccoli and spinach. He also recommended I eat dark fruits like blueberries and raspberries, which are good at antioxidant."

Molly said, "I was asked to eat broccoli, which we do not have it in Africa. She mostly specified vegetables and fruits that are grown here."

All 13 participants responded to interview question 9: "Tell me about your experience to learn about type 2 diabetes? Jacob reported adapting to a new lifestyle of healthy living.

> "All I know is that it is helpful to reduce oil intake, consumption of Maggi cube that we put in our soups. We are also trying to reduce our meat intake and oil intake. But not really on a specific type of diabetes, but just trying to reduce my risk of getting diabetes."

All 13 participants responded to interview question 10: "What effect does type 2 diabetes have on Cameroonians living in your community? What are you doing to prevent the onset of type 2 diabetes? Miranda reported, "adapting to educate her family members on healthy eating. Saying,

> "In our community, we are focused on preventive cares by educating our parents on healthy eating. The focus is on teaching them how to eat more njamanjama, which is a type of vegetable with less fufu corn, which is the opposite of what we are used to doing back home. Back home, we normally eat more carbohydrates like fufu and rice and less protein. We teach them to start reducing their portions gradually. For example, if you are used to eating five taro per meal, you can start reducing to four, and eventually down to two and more vegetables."

Theme 7: Motivation. All 13 participants responded to interview questions 1, "What type of food do you eat to stay healthy? Three participants said they were motivated to stay healthy. Maggie said, "I also think that you can seek advice from family members and friends who are into health care services to get some advice." Melissa said, "I try to eat a lot of vegetables and fruits to stay healthy." Molly said, "I eat more of vegetables, less sodium, less of sugar, and try to reduce some of those African foods that can cause you to develop diabetes. Some examples of vegetables we eat include spinach and bitter leaf."

All participants responded to interview question 2: "What type of exercise do you do to stay healthy? Five participants reported being motivated to doing exercises to stay healthy. Magdalene said, "For activities, I do a lot of weightlifting and strength exercise. I ride the bicycle a lot and walk. I try to walk at least 7000 to 8,000 steps a day." Monica said, "I do a lot of walking and a little bit of jogging. I do this about three times weekly because part of my job is walking, but I do walk at least three times away from my job." Maggie said, "I run, jog, and I also do some yoga. I do this at least twice a week." Melissa said."

> "I like to walk. I used to go for a walk almost every day, but now that it is cold, I only go for a walk at least once a week. Most of the exercise I do during winter is in the house. I do a lot of stretches and walking inside the house."

Molly said, "I ran, jog, and I also do some yoga. I do this at least twice a week."

All 13 participants responded to interview question 3: "What challenges, if any, do you face in eating healthy and staying active here in Minnesota? Two participants reported that, although they faced some challenges in eating healthy and staying active in

Minnesota, they were motivated to staying healthy. Monica said, “I choose wisely what I eat and what goes into my system.” Molly said, “I try to balance eating foods from back home and foods from here.”

All 13 of the participants responded to interview question 4: “What do you know about type 2 diabetes? One participant reported being motivated to eat healthily. Melissa said, “Eating healthy and exercise also helps.”

All 13 participants responded to interview question 6: “What are some concerns about type 2 diabetes in your community? One participant reported having some external motivation in staying healthy to prevent the onset of type 2 diabetes. Jacob said, “My wife has concerns about my weight and is helping me to maintain my weight by eating healthy and exercising.”

All participants responded to interview question 7: Tell me about a time you were told to eat healthily? What were some suggestions for a healthy diet? One participant reported being motivated to eating healthy Maggie said, “when I go to the store, I started reading labels and make sure to buy healthy choices, like the type of cereal I buy.”

All 13 participants responded to interview question 8: “Have you ever have a recommendation of the type of food to eat by a health care provider? If yes, what are some examples of the food listed? Did the food listed include traditional food that you like to eat” Two participants reported being motivated to change their eating and activity behaviors to stay healthy? Jacob said, “My wife and I decided to do some research on the things we need to cut out. Because we eat a lot of fufu, we decided to start eating oatmeal fufu instead of consuming fufu.” Maggie said,

> “I feel like starving yourself is not a good thing, because it makes your body to work a lot. It is better to eat about five smaller meals than sitting down and eat one big meal which might make you bloated. Activity behaviors include exercise. I work overnight, so I go to the gym daily for an hour after work for me to maintain myself. In the evenings, I might do my workouts like push-ups at home. I do these exercises about three to four days a week.”

All 13 participants responded to interview question 10: “What effect does type 2 diabetes have on Cameroonians living in your community? What are you doing to

prevent the onset of type 2 diabetes? Three participants reported being motivated to create awareness about type 2 diabetes in their community. John said, “As a community, we need to work hard for people to start talking about it to spread the message and awareness to others.” Jacob said, “On myself, my prevention is on my food and exercise.” Melissa said, “While our traditional foods have a lot of carbohydrates, then it is added with the too many sugar foods in America. The temptation is too big that if you don’t manage your health properly, you might become big.”

Theme 8: Perception. All participants responded to interview questions 1: “What type of food do you eat to stay healthy? Three participants gave their perception of what they considered healthy food. Monica said, “I mostly eat our traditional food. We eat African food not because they are different, but because we prepare them in our way. We believe in organic and healthy food.” Mirabel said, “Normally, I eat African food to stay healthy because we believe we have mostly organic food instead of foods that are made with fertilizers.” Miranda said, “I eat our African food. My children are all born here, but we eat mostly African food.”

All 13 participants responded to interview question 5: “What are some challenges in maintaining a traditional diet? One participant stated financial challenges made it difficult for him to maintain a traditional diet. James said, “Having the finances and also where to get it. We have a few stores that we can buy these traditional foods. Sometimes you drive to the store, and you can’t find it, then you have to drive to another store.”

All participants responded to interview question 6,” What are some concerns about type 2 diabetes in your community? Two participants expressed negative worries they had about type 2 diabetes. Jacob said,

> “Since we know that diabetes can also come from some of the food that we get from back homes, like the palm oil we like to put in our native food can make one put on weight, we try to reduce the quantity we put in our soups.”

Miranda said, “We only have about two people with diabetes, except there are some that I do not know of.” All of the participants responded to interview question 10: “What effect does type 2 diabetes have on Cameroonians living in your community? What are you doing to prevent the onset of type 2 diabetes? Two participants stated they

did something positive to change their lifestyle with the hope of preventing the onset of type 2 diabetes. Miranda said,

> “In our community, we are focused on preventive cures by educating our parents on healthy eating. The focus is on teaching them how to eat more njamanjama and less fufu corn, which is the opposite of what we are used to doing back home.”

James said, “I try to stay healthy by doing exercise and also save some money to eat healthy things like vegetables.”

All participants responded to the final question “Is there anything you would like to mention that was not shared in this conversation? Eight participants stated it was an interesting study on type 2 diabetes to create awareness in the community. Mary said, “If we can just cut off some of these things that can throw you into this predicament, it will be more helpful, as prevention is better than cure, you know.” John said,

> I believe what you are doing in your research might be very helpful in the future in our community. I hope that at some point, there should be a task force may be by the Department of Health in Minnesota because we have a big community. Individuals from such community who understands our culture can go out and educate people about these types of diseases.”

Jacob said, “Because I know of the type 2 diabetes issues today, I will do some research about it to know what I need to prevent to reduce my risk of having diabetes.” Magdalene said, “I think what you are doing is good and will help to create awareness in our community on how to manage diabetes.” Melissa said, “I think this is a great topic of the research you are doing, and I think people will benefit from such education in our community.” Mirabel said,

> “If there is a way to educate the Cameroonian community may be once or twice a year on type 2 diabetes, that will be nice. This is because I have a lot of bad experiences about people with diabetes complication, mostly because the people around them were not informed.”

Molly said,

> I will like that those of us who are new in the country from Africa should be informed about the health care here. It will be helpful to know how to get health

insurance. I had an awful experience when I first came and became sick and went to the hospital."

Miranda said, "This interview has opened my brain a little bit to learn about type 2 diabetes." Four participants reported not having anything else to add to the interview.

Summary

A review of interview questions and participant transcripts provided a clear picture of the participants' viewpoints and experiences. All participants viewed access to health care services and health insurance as essential elements to staying healthy. Although participants stated having good health without diabetes was outstanding, they reported challenges in eating healthy and staying active in Minnesota. All 13 participants expressed a love for their African food but faced difficulties in maintaining this traditional diet. Some considered it as healthy food.

All participants reported they did not know the significance of having health insurance when they first moved to the United States but now understood health insurance was cheaper than paying out of pocket. Participants' responses demonstrated a lack of culturally appropriate health care services to meet health care needs. All participants reported a need for a lifestyle change to encourage healthy living and prevent the onset of diseases like type 2 diabetes.

Chapter 5 provides greater insight into the study findings, limitations of the study, implications for social change, and recommendations for future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative phenomenological study was to explore how well nondiabetic Cameroonian immigrants in Minnesota access affordable, and quality health care services, and their behaviors, beliefs, and self-management knowledge of type 2 diabetes. A sample of 13 nondiabetic individuals from Cameroon participated in this study. The objective was to gain a better understanding of participants' perceptions and experiences with access to health care services. In this study, I also aimed to learn the extent of participants' knowledge of type 2 diabetes. In Chapter 4, I examined data collected for interpretation of participant responses. Chapter 5 contains a thorough discussion of the study findings, including themes I identified in participant responses, the relationship of the themes to existing literature, limitations, recommendations to current and future political leaders for further research, implications, and conclusion.

Interpretation of the Findings

The findings in this study could help improve access to health care services for immigrants from Cameroon living in Minnesota and throughout the country. The results could also help raise public awareness of the incidence of type 2 diabetes for immigrants from Cameroon. From the research findings, I highlighted significant perceptions concerning access to affordable quality health care services. Part of the problem could involve the multilevel system of interaction upon which individuals depend for support to stay healthy (Schlüter et al., 2017). In Chapter 2 I also discussed that although Black African immigrants face health challenges in need of health care attention, they continue to face challenges in accessing health care services because of low literacy levels, language barriers, stigma regarding illness, and lack of insurance (Wafual & Snipes, 2014).

Unfortunately, I did not find much data to aid in improving access to health care services for immigrants from Cameroon. Findings showed that they continue to have negative experiences at different levels of access in Minnesota. According to Albright (2015), efforts to reduce the rapidly increasing rate of type 2 diabetes requires addressing all four levels of human social interaction with individual, family, friends, small groups,

system groups, culture, community, and policy. In general, experts assume each of these social groups impacts on one's lifestyle and eating habits (Albright, 2015). By exploring Cameroonian immigrants' experiences and challenges, health care professionals may better understand the gaps in care and the pressing need to provide timely and quality health care services to these immigrants. The gap in the literature showed the impact that the lack of culturally appropriate health care service could have on the health of a given population. While some individuals from Cameroon reported some knowledge of the risk of type 2 diabetes, others said they did not know about the illness. Therefore, they continued to eat traditional food without an understanding of the nutritional content, such as high carbohydrates that could lead to insulin resistance and high blood sugar levels.

The emerging themes from this research study closely corresponded with findings from the literature presented in Chapter 2. These themes were (a) awareness, (b) experiences, (c) knowledge, (d) beliefs, (e) change in Lifestyle, (f). behaviors, (g) adaptation, (h) perceptions, and (i) motivation.

I used the SEM as a framework for this study, a model that includes five interrelated levels of components working together to promote healthy human behaviors: intrapersonal, interpersonal, organizational, community, and public policy (Bronfenbrenner, 1977; Sallis et al., 2015). The health of an individual does not only depend on the individual alone but is also affected by social interactions with other people, the environment in which one lives, and the different collaborative and coordinated care strategies for access to quality care available in the community (Bronfenbrenner, 1977).

Research Question 1

The first research question for this study was: "How do nondiabetic Cameroonian immigrants perceive access to health care services for the self-management of type 2 diabetes?

Awareness. The data collected from participants' responses revealed a lack of awareness of the meaning of access to health care services and knowledge of type 2 diabetes. Most of the participants used the phrase *I don't know*. Other words and phrases used included*; people in my community don't talk about it, it is a taboo, stigma, I know*

little or nothing about type 2 diabetes,I need to learn about type 2 diabetes, lack of understanding, neglect health, eat too much, lack knowledge of nutritional content, and White man's illness. These words and phrases indicate a need for someone to provide information on accessing health care services, changes in lifestyle, and diabetes risk factors. The phrases also showed a need for providers to understand the Cameroonian culture to tailor health care services to meet Cameroonian patients' health care needs.

Although most of the respondents were aware of type 2 diabetes, some were confused about what it is. Type 1 occurs when the Islets of Langerhans in the pancreas cannot produce insulin to balance out glycogen in the blood. Type 2 diabetes means the Islets of Langerhans in the pancreas cannot provide this hormone efficiently (Bauer et al., 2018).

Many Cameroonians in this study had become aware of the U.S health care insurance system and the Western medicine practice of prescribing medications as opposed to providing holistic treatments with herbs and treating the whole person. These findings are consistent with Choukem et al. (2014), who stated a change in lifestyle could increase the risk of type 2 diabetes. The results of this study were also consistent with Ludwig and Reed (2016) who noted how accessing health care services informs the support individuals receive from health care system within an environment to reduce the risk of chronic illnesses.

Although most participants reported having health insurance and access to health care services, they said the health care providers lacked knowledge about their cultural background, something they felt should be an essential component of their treatment. This supports Wafula and Snipes (2014), who identified cultural and religious beliefs as the main reasons African immigrants delayed seeking access to health care as they believed care providers lacked cultural competency in working with the African immigrant population.

Experiences. The data collected from participants' responses corresponded with the definition of expertise. Some words or phrases used in describing the different experiences included "my dad died of diabetes" and "people will say that diabetes is a white man's illness." Most respondents reported having experiences with access to health

care services. Although most of them had health insurance, they continued having negative experiences with accessing health care services. Many Cameroonian immigrants were not used to health insurance because most health care services are paid out of pocket in Cameroon.

However, many of the participants liked having insurance because they saved money and had better access to health care. Their stated issues with health care included the idea that American society had “pill poppers” and Cameroonians were used to being touched and having their bodies manipulated as in chiropractic or physical therapy. Besides, Cameroonians used a lot of herbs and conventional medicine. Many respondents shared their experiences with the health care system in Minnesota, including one participant who discussed her gestational diabetes and others who shared experiences of friends or family members with diabetes.

The respondents also shared personal experiences when they went for check-ups with their primary care physicians. Most had positive experiences since they felt the care was better in the United States than in Cameroon. Participants had fewer positive experiences when health care providers were not sensitive to their culture or religious needs. The findings of this study are in line with Wafula and Snipes (2014), who reported cultural and religious beliefs as the main reason African immigrants delayed seeking access to health care services. The immigrants believed health care providers lacked cultural competency in working with the African immigrant population.

Knowledge. Although some respondents lacked knowledge of diabetes, many were willing to learn. The first level of the SEM supports an individual’s willingness to gain an understanding of any health-related issue (McCormack et al., 2017). Many of the participants gained knowledge about the American health care system and the use of pharmaceuticals and surgery to treat illnesses. Despite this knowledge, some respondents still believed in the use of herbs to treat some symptoms like they did back home in Cameroon because they had learned this method from their grandparents. Some respondents also reported resisting going for regular office visits and only scheduling appointments when they were sick. They felt the health care providers did not understand them because of their accent. Besides, participants also felt members of the health care

system overall lacked knowledge about their culture and religion. According to McCormack et al. (2017), self-management of a disease such as diabetes requires collaboration and support from family members, friends, community, environment, health care providers, and the state through policies. Findings from McCormack et al. were inconsistent on the issue of support, because the respondents lacked adequate support to stay healthy, and diabetes is a disease requiring assistance from others.

Beliefs. Some respondents felt that U.S. health care providers and the health care system are not sensitive to their religious beliefs and values. The providers never asked about religious beliefs. Respondents used words or phrases like “White man treatment” or “do not understand your culture.” Also, they made comments such as “they don’t care to know about your values and your beliefs.” The participants felt the system did not care about their beliefs, custom, traditions, and culture. Some respondents reported they believed in natural herbs, which would be beneficial if health care providers integrated the knowledge and use of natural herbs in their care. These findings were consistent with Franz et al. (2014) who reported an evidence-based solution to diabetes self-management requires health care professionals’ treatment of people as a whole person, which includes culture, beliefs, food, and religion. This study added value to existing definitions of individual values and beliefs and the critical role they play in the health of a person.

Change in lifestyle. Many respondents were motivated to change their lifestyle to prevent diabetes and obesity by reducing carbohydrates and sugar and eating more fruits and vegetables more often. Some words and phrases used to describe lifestyle changes included “activities, “diet,” American food, and “expensive,” While some respondents were willing to make a lifestyle change, they found it challenging because they lacked information on the nutritional values of most of the traditional food they ate. The findings from my study supported Powers et al. (2015), who postulated that the effective use of diet and exercise are essential components in maintaining a healthy lifestyle when dealing with a chronic disease like diabetes. Respondents from Cameroon who enjoyed eating traditional food found it hard to monitor portions and carbohydrate counts. Some were frustrated by the lack of time to exercise because of work, family responsibilities, and the fast-paced American lifestyle.

Behaviors. Many of the respondents altered their behaviors by changing their diet and increasing their physical activities. Also, they were willing to reduce carbohydrates to prevent diabetes and obesity. This finding was consistent with Sallis et al. (2015), who showed the social circle of family and friends could influence an individual's health behavior positively or negatively depending on the socioeconomic background of the community. Other participants reported they would do better with activity and diet if they had a support group for motivation. This finding also aligns with McCormack et al. (2017), who emphasized a patient's health outcome should not be from reliance on the individual, but on the engagement of different players from the five levels of SEM.

Adaptation. According to Jack et al. (2014), an understanding of patients' cultural perspectives and behaviors is essential in building a culturally appropriate physician and patient discussion to the level where patients understand the health situations and recommendations for a lifestyle change. Most of the respondents in this study mentioned the services they received were only occasionally culturally appropriate, and many times, insensitive to the Cameroonian culture. However, the participants decided to adapt to American methods to receive health care services.

Some participants, including Jacob and James, reported that part of the reason why they decided to adapt to eating more American food was that traditional diets were costly. Mary added that sometimes she had to drive a far distance to find some of these foods. The participants also sought low fats and sugars in the African foods they obtained. To continue eating traditional food, immigrants from Cameroon had adapted by sending money to other states or Cameroon when people traveled home to buy and transport some traditional condiments and dried vegetables. Although respondents believed in using herbs for healing, they were forced to adapt to the American health care system of having insurance and taking medications because it was the only option available.

Perceptions. Some participants reported having gained weight because of easy access to transportation, which differs from life back home where they walked everywhere. This finding supports Issaka et al. (2016), who noted African adult immigrants and refugees in Melbourne, Australia, reported living a more sedentary

lifestyle with easy access to transportation as a risk factor to diabetes. While individuals from Cameroon cooked most of their traditional foods with palm oil, some believed the consumption of palm oil was harmful because it contained high-fat levels. On the other hand, participants had the perception that traditional Cameroonian foods were healthy and tasted better. Many Cameroonians felt they were outsiders in the American health care system because they were immigrants, and the health care providers were only interested in the condition being treated and not the entire person. Many agreed that although health care professionals were knowledgeable about treating illness, they were insensitive to African culture. Study participants also perceived some Cameroonian foods were healthy, and others were fattening and full of carbohydrates.

Motivation. During data collection, several participants reported they were motivated to make some lifestyle and behavioral changes such as reducing carbohydrates and sugars. Jacob reported an external motivation from his wife to eat healthily. Others said they were motivated to exercise more and make changes in their diet by eating more fruits and vegetables.

Research Question 2

RQ 2 was: How does the consumption of traditional foods influence nondiabetic Cameroonian immigrants' perception of type 2 diabetes?

Behaviors. According to Abioye-Akanji (2015), the well-being of an individual does not only depend on the individual's behaviors but on a combination of the individual, society, and environment in which people lived. With SEM, Bronfenbrenner (1977) promoted interrelated support from individual, interpersonal, organizational, community, and public policies to promote collaborative and coordinated care for healthy living. During the analysis of the data collected from all 13 participants, I found several had identified their eating habits dominated mostly by consuming traditional foods. Participants mentioned traditional foods such as eru, bitter leaf soup, plantains, cocoyams, fufu, and huckleberry or njamanjama. This finding supports Sallis et al. (2015), who showed a person's life and behavior could be influenced by social, cultural, economic, and environmental factors. Most participants reported that during summertime, they bought fresh vegetables from farmers markets and froze them to have them available

throughout the year. A majority also identified maintaining a certain level of outdoor activities was difficult because of the cold weather in Minnesota.

Experiences. Several participants mentioned encountering challenging experiences while navigating the health care system in Minnesota. Participants indicated that although they had health insurance through their jobs or state medical assistance services, they continued experiencing barriers to receiving quality health care services because of their accents and communication issues between patients and providers. This agreed with the findings of Woodgate et al. (2017) and Wafula and Snipes (2014) who noted African immigrants faced challenges in accessing quality health care services because of lack of English language proficiency, cultural differences, and lack of social support. Participants felt their health care needs were not being met because of these challenges. Most mentioned having some experience with diabetes but were unable to differentiate between the different types of diabetes. Most experiences reported were about family members and friends who were diagnosed with diabetes.

Change in lifestyle. All 13 participants reported struggling with lifestyle changes. Some of the words and phrases they used included “insurance,” “cold weather,” “driving,” “American foods,” “immigrant,” and “accent.” According to Jack et al. (2014), individuals with health challenges benefit from a change in lifestyle, which includes both nutrition and other health behaviors. Jack et al. recommended the use of culturally appropriate physicians and patient discussions to the level where patients understand the health situations and recommendations for change. Participants mentioned receiving recommendations from the providers on changing their diets, but they did not follow the recommendations because the lists did not include traditional foods. Mattei et al. (2015) also believed a lifestyle change of limiting African immigrants’ large consumption of staple Cameroonian foods such fufu made from cassava root plants and white rice is necessary as this diet presents a risk of type 2 diabetes in this population. Other participants reported a lack of motivation to exercise because of the cold winter weather in Minnesota and the easy access to transportation. The findings for this study closely aligned with the promotion of the SEM model in which the environment and available

resources can affect the health outcome of the people (Bronfenbrenner, 1977; Woodgate et al., 2017).

Awareness. Immigrants from Cameroon reported lack of knowledge and stigma to chronic illnesses, which prevented them from learning about type 2 diabetes. Another concern raised by participants was the lack of nutritional contents and how to measure carbohydrates in the traditional foods they enjoyed. This supported similar findings by Sharma et al. (2007) who found people from Cameroon eat a wide variety of composite foods that are combinations of more than one ingredient without any record of nutritional content and measurement. While these traditional foods taste good, some respondents reported they wanted to learn about the carbohydrate content to control their portion sizes.

Knowledge. Some respondents lacked knowledge of type 2 diabetes but were willing to learn. Others have already started educating their immediate family members and friends on how to reduce carbohydrate intake and reduce portion size to stay healthy. This supported similar findings by Albright (2015) who promoted use of the SEM framework to help reduce the rapidly increasing rate of type 2 diabetes through all 4 levels of human social interaction which include the "individual," "family," "friends and small groups," "system," "groups and culture," and "community and policy."

Adaptation. Some respondents decided to adapt their eating behaviors to some American foods that were similar to traditional foods since traditional foods were difficult to find and expensive to buy in the US. In one example, instead of melon seeds, Jacob now eats pumpkin seeds to make a special pudding he used to eat back home. Although the taste is not the same, it is at least good. Like Jacob, others also decided to change their diet and adapt by using healthy oils, increasing fruits and vegetables, and reducing carbohydrates and sugars. This supported similar findings from Popovic-Lipovac and Stresser (2015), who showed a change in nutrition is usually the last change immigrant women make when they move to a new country.

Perception. Some participants had some concerns about the fast-paced life they had since moving to the United States. Miranda complained about her weight and how difficult it was to lose weight since she used a car to drive to the grocery store and other

places like the farmers market. She used to walk more back home. This was in line with Issaka et al. (2016), who reported African immigrants and refugees in Melbourne, Australia also lived a more sedentary lifestyle because of easy access to transportation. Before moving to the United States, immigrants from Cameroon lived an active lifestyle where they walked to the farmers market to buy fresh food. After moving to Western countries, Cameroonians, like other African immigrants now live a sedentary lifestyle closely linked to type 2 diabetes (Issaka et al., 2016).

Motivation. Most respondents reported motivation coming from oneself, a friend, or a family member. While most respondents lacked culturally appropriate diet recommendations from their health care providers, some had an internal motivation to conduct some Internet research on how to eat healthily. For example, Mirabel said, “I try to Google what I am supposed to be eating.” Several participants stated some of their traditional foods are oily and fatty as such; they were motivated to eat healthier by reducing the amount of oil they used in these conventional foods. The findings supported Majeed-Ariss et al. (2015), who performed a systematic review of research into Black and ethnic minority patients views of self-management of type 2 diabetes. They found African American patients with type 2 diabetes received positive support from family members to encourage healthy eating and lifestyle.

Limitations of the Study

Limitations of this study include the ability to generalize findings from this population of nondiabetic immigrants from Cameroon living in Minnesota. Study themes emerged after one interview with each of the 13 nondiabetic Cameroonian immigrants. All interviews occurred during a week of 20 F□ temperatures, which made it difficult to drive in Minnesota suburbs. Because many participants could not meet away from home, I drove to their homes to conduct all interviews.

The smaller sample size of 13 does not reflect the entire population of nondiabetic immigrants from Cameroon in Minnesota. To generalize results a larger population, I suggest the use of a quantitative research method with the potential of being an accurate representation of the nondiabetic Cameroonian immigrants. The data collected in this study allowed for potential participants to contact me if they were interested in the study.

The inclusion criteria for this study included nondiabetic immigrants from Cameroon who were between the ages of 25 and 50 years and living in Minnesota for at least one year.

Recommendations

The emerging data and themes from this study added new information about the need for culturally appropriate access to health care services of nondiabetic immigrants from Cameroon in Minnesota. According to the research findings, a lack of health provider knowledge about the cultural background of nondiabetic immigrants from Cameroon, individuals' lack of knowledge about type 2 diabetes, and their experiences accessing affordable health care services could affect the health of Cameroonian immigrants. This is particularly true for those who perceived dietary recommendations as disconnected from their cultural foods and had lack of trust health professionals. Many participants saw having health insurance and access to health care services as essential factors.

Recommendations from the findings include the following: (a) culturally appropriate services: (b) capable provider and patient communication without language or accent barriers; (c) culturally relevant training for staff and patients; (d) early patient education on the American health care system; and (e) knowledge and awareness patient training and education on risk factors for type 2 diabetes.

Culturally Appropriate Designed Services

According to the findings, a need exists for designing culturally appropriate health care services to meet the needs of nondiabetic immigrants from Cameroon. An immigrant from Cameroon may find it challenging to adapt to the culture of the new country. Based on the cultural background and beliefs of immigrants from Cameroon, health care services should be tailored to meet their needs to encourage access to health care services and promote healthy living. One example includes making lifestyle change recommendations, including traditional foods patients, enjoy eating but making them with healthy oils and fewer carbohydrate. Findings indicated providers do not take time to learn about their patients, providing dietary recommendations the patients will not follow because they are not used to some of the American foods.

Effective Provider and Patient Communication

Effective communication is an essential component in accessing health care services. Patients should understand what the provider is saying. Likewise, providers must understand patients concerns. The issue of a language barrier should not affect patients' access to health care services because translators are available to assist patients with limited English proficiency. Medically trained translators should be available to provide interpretation for medical visits. At the time of data collection, none of the participants reported using a translator, and some expressed frustration from feeling they were not being understood during appointments. This was the principal reason why some of their medical complaints were not solved according to participants. For example, one participant said she went to the hospital with the claim of constipation and was still having the same problem because the providers did not understand her accent. Providers must learn about the patients' background, cultural beliefs, and family background to provide holistic health care services.

Culturally Appropriate Training for Staff and Patients

The growing immigrant population in Minnesota requires health care professionals to have background training on how to work with immigrants from different parts of the world. In line with SEM is the recommendation of multi-levels of health intervention including individual, family, community, and state policies. An understanding of a patient's cultural background, beliefs, religion, and behaviors is vital for a care team when providing collaborative patient care. It is also important to tailor all treatment to be patient-centered, with the patient and family members involved in decision making as much as possible.

Early Patient Education on the American Health Care System

Immigrants from Cameroon reported they came from a country with different health care from that of the United States. All participants said they never had health insurance in Cameroon, and they had used traditional herbs to cure most of their illnesses. Even when they went to the hospital, they paid all medical bills with cash. This type of patient would benefit from early training on the American system of health care services and the benefits of having health insurance. One respondent said she was shocked at the

amount of medical bills she received when she first came to the US and knew nothing about health insurance. In this study, I found participants had a lack of knowledge about the American health care system. Future immigrants from Cameroon could also benefit from education on preventive care and reduction of the risks of type 2 diabetes. They are at higher risks of type 2 diabetes upon introduction to American fast foods.

Knowledge and Awareness Patient Training on Risk Factors of Type 2 Diabetes

Knowledge and awareness training on risk factors of type 2 diabetes may help reduce the prevalence of type 2 diabetes in the Cameroonian population. At the time of data collection, some participants said they did not know anything about type 2 diabetes and that the only opportunity they had to learn about the disease was through family members or friends diagnosed with diabetes. In this study, I found nondiabetic immigrants from Cameroon need education and awareness of type 2 diabetes. They should not wait to be diagnosed with type 2 diabetes before learning about the risk factors. One participant reported that as an African American woman, she understood individuals from her population are predisposed to diabetes.

Social Change Implications

This qualitative study involved an exploration of the lived experiences of Cameroonian immigrants regarding their understanding of type 2 and their access to affordable, quality health care services. Research studies regarding Cameroonian immigrants' access to health care services and knowledge of risk factors to type 2 diabetes were limited at the time of data collection. However, the need for this knowledge was growing due to the increased African immigrant population in Minnesota. Hopefully, this new knowledge will help to improve and change the quality of life for immigrants from Cameroon.

From the data analysis, nine themes emerged in response to the research questions. Also, these themes included new understanding and knowledge to address the gap in the literature regarding the needs of nondiabetic immigrants from Cameroon. Findings from this study, together with the available literature, show a strong need for health care providers to develop culturally appropriate services to create health awareness as well as provide knowledge of access to health care services along with increasing

awareness of risk factors of type 2 diabetes. Health care professionals must understand the importance of early intervention by providing background knowledge of the American health care system to nondiabetic immigrants from Cameroon. Many participants shared their lack of understanding of the American health care system during their early days in this country. Some did not know about health insurance until they started receiving large medical bills after hospital visits. Participants also showed a lack of awareness of the risk factors of type 2 diabetes as they continued eating traditional foods.

The positive social change could occur because of this study. Presently, immigrants from Cameroon do not have anywhere to go to Minnesota to access culturally appropriate health care services, although they have health insurance. No literature specifically about Cameroonian immigrants emerged during the literature review. The result of this study may inform health care leaders, workers, and providers of the need for additional culturally relevant training necessary to provide quality health care services to meet the needs of immigrants from a diverse population. The lack of awareness of access to affordable, quality health care services and social knowledge of the risk factors of type 2 diabetes adversely affects the health of nondiabetic immigrants from Cameroon.

Based on the findings from 13 participants, future research recommendations include using a larger sample size to gain additional knowledge of this population. Future researchers may also consider including a broader number of African countries. Future researchers could also focus on Cameroonian immigrants over the age of 50 years and their perceptions of access to quality health care services and healthy behaviors. Additionally, future researchers may also explore perceptions of health care professionals and the quality of services provided to immigrants from Cameroon.

The findings suggest that although nondiabetic Cameroonians have access to health care services, they leave their appointments without adequate information and continue living in poor health because they cannot follow doctors' dietary recommendations since the lists do not include traditional Cameroonian traditional foods. The participants in this study felt they did not receive treatment as a whole person because providers did not care about their culture or what they liked to eat. This health

care providers approach can result in adverse health outcomes for immigrants from Cameroon who are already predisposed to diseases such as type 2 diabetes.

I will work on publishing an article in the different journals including Society of Public Health Education (SOPHE), Journal of Immigrant Health, and Journal of Anthropology. I will also partner with a registered dietician to write a cookbook adapting healthier options associated with Cameroonian diet. I will be involved in poster board presentations or oral sessions at various annual conferences like the Minnesota Public Health Association and the Minnesota Cultural and Ethnic Leadership Council (CECLC). I will also seek to conduct presentations, seminars, and podcasts for statewide cultural awareness.

Conclusion

In this study, I explored the lived experience of 13 nondiabetic immigrants from Cameroon regarding access to health care services and their perceptions of type 2 diabetes. The results showed immigrants from this population need culturally designed health care services to promote a healthy lifestyle. Culturally appropriate health care services are meant to treat an individual as a whole being, taking into consideration the patient' culture, beliefs, religion, and diet. Therefore, there a need exists to provide trainings to improve patient/provider interactions and communication to improve Cameroonian immigrants' experiences with access to health care services and risk factors to type 2 diabetes in the state of Minnesota. Although these Cameroonian immigrants had health insurance, they were unable to access quality health care services designed to meet their specific needs.

The prevalence of type 2 diabetes in this population reflects poor health behaviors, negative perceptions of the health care system, and lack of finances. Participants enjoyed having health insurance, but were more concern about the quality of care, and feelings that providers failed to incorporate their cultural background and beliefs when providing treatment to them. Immigrants from Cameroon belief that health care providers know it all, makes it uncomfortable questioning American-trained personnel because of cultural issues associated with respect. After reviewing the results, I believe these nondiabetic immigrants from Cameroon have the ability and background

knowledge needed to work in collaboration with health care providers to come up with a solution to the identified problems.

According to the ADA (2018), providing timely, culturally appropriate education and support are fundamental elements in diabetes care, providing the possibility of leading to lifestyle changes effective diabetes self-management. Receiving culturally relevant health care services can increase trust and use of recommendations to improve the quality of life for this population. The participants in this study made it clear they did not follow provider's recommendations of healthy eating because they were not prepared to abandon their traditional foods. It will be nice to incorporate healthier adaptation to Cameroonian foods.

Based on this study, it appeared Cameroonians lacked the self-efficacy to question and discuss provider's suggested referrals and services. This study indicates the need for an open and trusted relationship between providers and their patients so immigrants from Cameroon can share their background, culture, and health care needs to work as a team to come up with culturally appropriate recommendations.

The findings of this study also brought to light the lack of awareness of the risk factors of type 2 diabetes within the Cameroonian community. Realizing the traditional Cameroonian foods may be high in carbohydrate content, participants continued to eat them without available nutritional content to control portion sizes. Immigrants from Cameroon could eat healthier and benefit from available resources to help with the management of portion sizes as they continue to eat traditional foods. Immigrants from Cameroon enjoys eating food from the different six food groups of including grains, fruits, vegetables, meats and meat substitutes, dairy products, and fats/oils, some of which are not common to American diet. Working in collaboration with professionals like registered dieticians should be recommended be included on developing options that include traditional Cameroonian foods. Immigrants from Cameroon moving to the United States could benefit from a change of lifestyle with access to quality health care services.

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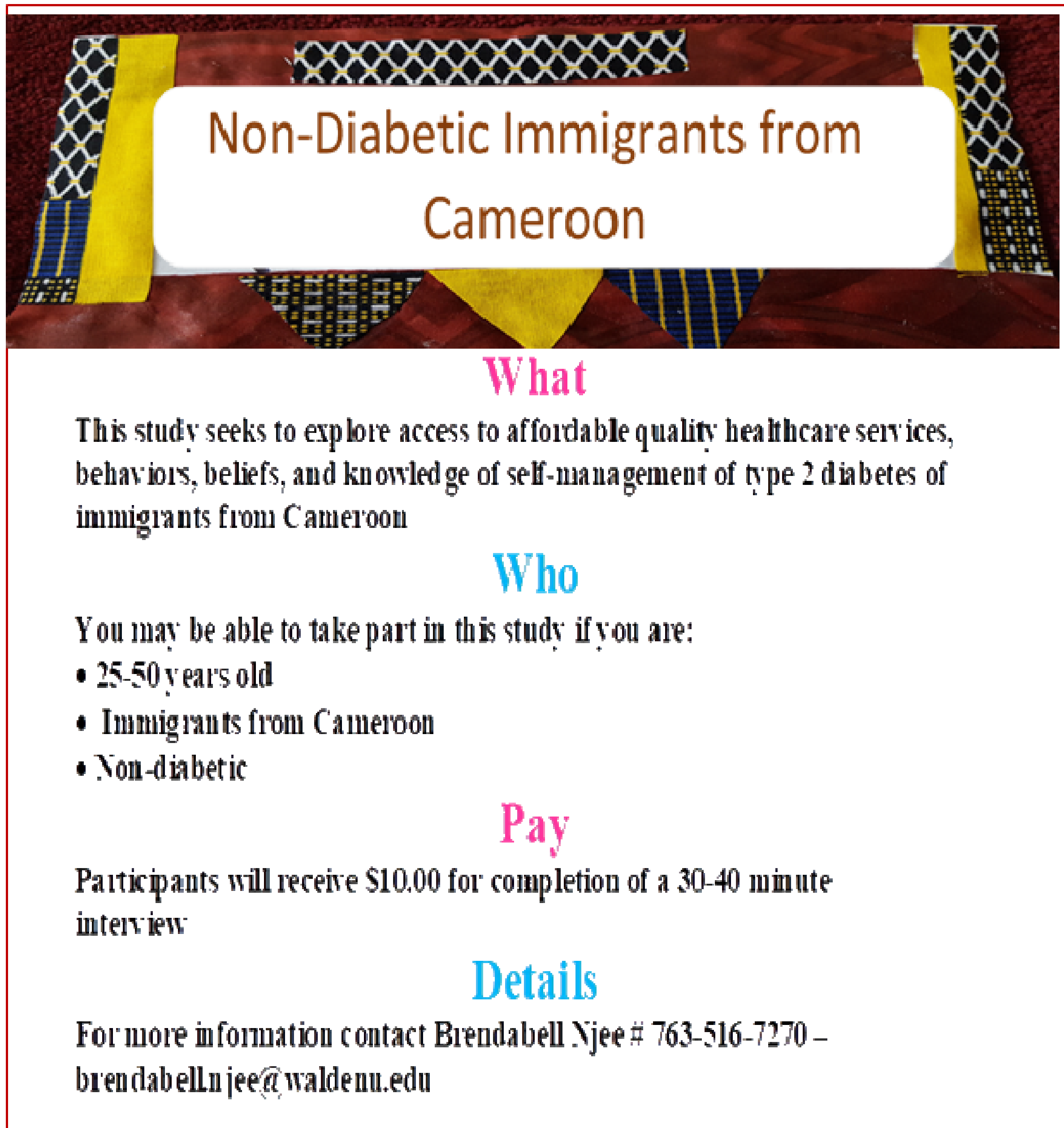
Appendix A: Flyer



Appendix B: Interview Protocol

Date: ___________________

Location: ____________________

Name of Interviewer: ______________________________________

Name of Interviewee: ______________________________________

Interview Questions

Interview Protocol (Guiding Interview Questions)

The guiding interview questions are designed around the subresearch questions. Ten interview questions are asked per subresearch question to probe deeper insights into the subject matter.

1. Introductions
2. Discussion with the participant on the type of information that will be collected during the interview.
3. Discuss the Informed Consent Form and obtain the participants signature.
4. Review the interview process with the participant by reminding them of the interview duration and need for private, uninterrupted time.
5. Inform the participant that the interview will be digitally recorded, and I will use the audio recording to transcribe their responses accurately.
6. Inform the participant that their participation in the interview is voluntary, and they have the right to stop the interview at any time.
7. Explain to the participant that the information obtained in the interview will remain confidential as stated in the Confidentiality Agreement.

Appendix C: Guiding Interview Questions

Research Questions

RQ 1: How do nondiabetic Cameroonian immigrants perceive access to health care services for the self-management of type 2 diabetes?

RQ 2: How does the consumption of traditional foods influence nondiabetic Cameroonian immigrants' perception of type 2 diabetes?

The guiding interview questions are designed to respond to the two research questions, which are further broken down into two sub-research questions. Ten interview questions are asked per sub research question to probe deeper insights into the subject matter.

Subquestion 1: What is the connection made by nondiabetic individuals from Cameroon and their access to quality culturally appropriate health care services to behaviors and self-management knowledge of type 2 diabetes in Minnesota?

Interview Questions

1. What does access to health care services mean to you?
2. What are your experiences with accessing health care services?
3. What does type 2 diabetes mean to you?
4. Sometimes we talk about the importance of culturally appropriate health care. What does culturally relevant mean to you? Do you think your culture is different from American culture around you? How? So, what would you recommend for culturally appropriate health care services for Cameroonians living in Minnesota? 5: What are some examples of culturally relevant health care services you have received to help you stay healthy?
5. How has your health and lifestyle improved since you started using health care services in Minnesota? If they haven't improved, can you tell me why you think this?
6. In your opinion, what are dietary behaviors and activity behaviors? How do you think that Cameroonians dietary and activity behaviors affect the risk of type 2 diabetes?

7. Would you please tell a story about trying to follow health care advice on staying healthy and preventing type 2 diabetes?
8. Tell me, are you able to understand what your health care providers discuss with you about staying healthy? If yes, do you ask questions? If no, what do you do with the information when you get home?
9. Tell me, how often do you go for an office visit with your health care provider? When do you go, what are your concerns? In your opinion, are the responses understandable? If not, why not?

Subquestion 2: What is the connection made by nondiabetic immigrants from Cameroon to the consumption of traditional food and knowledge of type 2 diabetes?

1. What type of food do you eat to stay healthy?
2. What type of exercise do you do to stay healthy?
3. What challenges, if any, do you face in eating healthy and staying active here in Minnesota? When planning your meals, do you ever worry about eating healthy?
4. Is it challenging to maintain a traditional diet? If yes, what might some difficulties be? If not, what makes it easy for you to follow a traditional diet?
5. What are some concerns about type 2 diabetes in your community?
6. Tell me about a time you were told to eat healthily. Who might have told you? What were some suggestions for a healthy diet?
7. Have you ever had a recommendation by a health care provider of the type of food to eat? If yes, what are some examples of food listed? Did the food listed include traditional food that you like to eat?
8. Tell me about your experience when you learned about type 2 diabetes.
9. What are you doing to prevent type 2 diabetes?
10. What effects does type 2 diabetes have on Cameroonians living in your community in Minnesota?
11. Is there anything you would like to mention that was not shared in this conversation?