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Lived Experiences of Diabetic Patients and Access to Care Information in Nigeria

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Walden University
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Abstract

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MS, Nassarawa State University, Keffi, 2012

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

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Abstract

Studies have shown that chronic diabetes can be managed throughout a lifetime, despite the numerous health, social and economic consequences of the disease. Nevertheless, researchers have yet to establish the efficacy of access to diabetic information on care and family needs in relation to living with diabetes in a developing country like Nigeria. The purpose of this study was to explore the lived experiences, including both barriers and needs regarding access to information and care, of diabetic patients in Abuja Municipal Area Council, Nigeria. The study used the Social-Ecological Model as a framework for analysis. Adopting the phenomenological research method, six Type II diabetes patients and five community health workers were studied: interviewed and engaged in-depth discussion during which data were collected. Data were analyzed and interpreted using the Van Kaam approach, and nine themes were generated. The result of the study shows that while diabetic care information is available in healthcare facilities, access was constrained by factors such as out of pocket cost, patient's level of education and literacy, physician referral and other family needs. These factors were shown to create in participant's adverse sick-roles such as avoidance of care facilities, susceptibility to fake drugs, and mixing modern and traditional medicines. The study highlighted the increasing importance of literacy, finance capacity, family support, and need for community based diabetic associations. Thus, the recommendations that, there is strong rational for the formation of diabetes patients' associations with both national and international outlook to coordinate and support care needs in patients in Nigeria. Nigeria's Ministry of Health and Information needs to collaborate towards information dissemination on diabetes condition and care.

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Dedication

I dedicate this work to God Almighty for His grace and provision in making my academic dreams a reality, to the memory of my late parents, Mr. Cornelius Nwaokoro and Mrs. Josephine Okwuchi Nwaokoro, both of whom gave me the foundation of something they never enjoyed – EDUCATION. You desired to see me reach this academic height, but could not witness my success because death defeated you. My dear husband, Mr. Boniface Maduka Okuteh, for all your support and encouragement. To Dr. D.B. Ayo, who took the role of a father figure in my life, you became an active and important part of my life in general, you made me promise you, I was going to get my Doctorate, I love and respect you. To Mr. Dada Ademokoya and his family, who stood by me an ORPHAN and become the family I never had. Anytime I needed to vent or have a laugh, Oga as I usually call you, you are there for me. I love and respect you and grateful to have you and your family in my life. Finally, to all my siblings, Theodore, Nneka, Ugochukwu, and Ujunwa, this work is also dedicated to you.

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Chapter 1: Introduction to the Study

The increasing prevalence of diabetes is a global public health concern. The World Health Organization (WHO), on its 2016 World Health Day, requested global action to stop the rising prevalence of diabetes while improving the level of care for persons with the disease. There is a higher incidence of diabetes in developing countries, and the majority of patients who suffer from this disease are adults between the ages of 18 and above World Health Organization [WHO], 2016). Diabetes is a chronic disease that can be managed throughout a lifetime. World Health Organization (2019) described diabetes as a metabolic disorder known as the appearance of hypoglycemia or hyperglycemia. There are two types of diabetes, Type I diabetes and Type II diabetes. Type I diabetes, also known as juvenile diabetes, is a childhood disease that reduces children's life expectancy from as low as the age of 13 in developed countries (WHO, 2019).

The second type of diabetes is Type II diabetes, also known as diabetes mellitus or insulin resistance. Type II diabetes is seen more in adults; however, the incidence of Type II diabetes among children and younger adults has also increased globally due to obesity and physical inactivity (International Diabetes Federation [IDF], 2019; WHO, 2019). The American Diabetes Association [ADA] in 2016 described Type II diabetes as a metabolic system disorder that causes considerable morbidity or relative deficiency in insulin, dysfunctional organs, and mortality. Type II diabetes accounts for 90 to 95% of global diabetes cases and is associated with unhealthy eating, obesity, an inactive lifestyle, and sometimes from genetic component (WHO, 2019). In 2018 the American

Diabetes Association added a third type of diabetes to the classification as gestational diabetes; gestational diabetes is developed during pregnancy and disappears after delivery. People are more likely to develop Type II diabetes when they are overweight, have a family history of diabetes, are fourth five years and above, have high blood pressure, live a sedentary lifestyle, have a diagnosis of prediabetes, or had gestational diabetes that was not treated (National Institute for Diabetes and Digestive and Kidney Diseases, 2017).

The WHO (2019) estimated that in 2012, about 1.5 million people died of diabetes. Diabetes is responsible for the additional death of 2.2 million individuals due to complications such as cardiovascular disease and another related disease; overall, 3.7 million deaths is associated with high blood glucose, out of which 43% of the deaths occurred to individuals who are 70 years and above. Additionally, the prevalence of diabetes among adults globally in 2014 was 8.5% (WHO, 2019). The International Diabetes Federation (2014) estimated that by 2030, the global prevalence of diabetes would escalate to 552 million. High glucose levels, also known as hyperglycemia, damage body organs over time, while hypoglycemia is low glucose (ADA, 2017). Type II diabetes is a metabolic system disorder that causes considerable morbidity or relative deficiency in insulin, dysfunctional organs, and mortality (ADA, 2016). Accessing diabetes information and care is essential to the prevention of health complications associated with Type II diabetes.

Social determinants of health status have been found to impact the outcome of persons with Type II diabetes (Walker et al., 2016). Social determinants also play a role

in the ability to access information and care for diabetes patients, such as access to health services, the quality of those services, government policies, level of education, social support, and access to mass media and changing technologies such as cell phones, internet, and social media (Center for Disease Control and Prevention, 2019; Daniel et al., 2018). Social determinants of health are the environment in which an individual was born and raised, the conditions in which they were schooled, work, play; and as the psychosocial factors like social exclusion and social support which have revealed as consistent association with quality of life, health outcomes, diabetes control, and self-care (Islam, 2019; Daniel et al.,2018).

Type II diabetes treatment is controlled by a change of lifestyle and medication (Lucherini, 2016). The complications associated with Type II diabetes affect life quality (Shield et al., 2016). According to Okoronkwo et al. (2015), the economic burden of Type II diabetes in Nigeria has led to catastrophic expenses to the lowest socioeconomic individuals in the country. Complications of Type II diabetes are the hospitalization indicators in Nigeria (Adeloye et al., 2017). A recent study indicates that the growing demographic movement of Nigerians from rural to urban, unhealthy lifestyle and social determinants of health, and advanced age are factors associated with Type II diabetes (Olufemi et al., 2015; Islam, 2019; Ugwu et al., 2019; Uloko et al., 2018).

Background of the Study

The WHO (2019) has reclassified diabetes by adding new types of diabetes, such as hybrid and unclassified diabetes, to facilitate clinical care, aetio-pathology, and epidemiology. This new classification does not acknowledge the subtypes of Type 1 and

Type 11 diabetes and is used in the interim when there is no clear diagnostic category particularly close at the time of diagnosis. The new classification guides health practitioners on treatment choices and decides on a patient who has issues with glycemic control. However, this is not realistic with the present problems regarding access to information and care in developing countries. Abuja Municipal Area Council of Nigeria consists of 12 wards, namely, City Center, Garki, GUI, Gwagwa, Gwarimpa, Jiwa, Karshi, Kabusa, Karo, Nyanya, Orozo, and Wuse (Abuja Municipal Area Council, 2017). The population of the Abuja Municipal Area Council, according to the 2006 census, was 776,298; there was a 140% increase in population growth between 2000 to 2010. Presently, the population is estimated at 2.4 million (World Population Review, 2019).

The prevalence of Type II diabetes in Nigeria is extensively spreading out, higher in urban areas than in rural areas (Olufemi et al., 2015; Oputa & Chinenye, 2015). According to the study by Orji et al. (2019), the prevalence rate of Type II diabetes in Abuja, the federal capital of Nigeria, is 4.4%, compared to the national prevalence rate of diabetes 2.2% (Orji et al., 2019). The prevalence of Type II diabetes in Abuja municipal council is 4.4% is higher than the national prevalence of 2.2% (Orji et al., 2019). The increasing rate of Type II diabetes prevalence and associated complications in Abuja is underemphasized.

The study of Uloko et al. (2018) indicates that the significant risk factors of Type II diabetes in Nigeria is associated with unhealthy eating behavior rate (8.0%), old age (6.6%), and urban dwelling (6.0%), obesity (5.3%), physical inactive (4.8%), family history of diabetes (4.6%), and cigarette smoking (4.4%). Examining the prevalence by

geographical zone indicates that the South-South region has the highest prevalence (9.8%), South-West (5.5%), North-East (5.9%), South-East (4.6%), North-Central (3.8%), and North-West (3.0%; Uloko et al., 2018). The study of Iloh et al. (2015) confirmed the prevalence of the disease in middle-aged adults, 28 to 82 years, and associated the disease with family biosocial factors. However, a WHO (2019) report indicates that early nutrition during infancy is also a contributing factor to Type II diabetes. Despite our understanding of the existing risk factors of Type II diabetes, studies have revealed that information on the prevention of Type II diabetes is not reaching populations at risk of developing Type II diabetes. A low level of knowledge among the general public about diabetes has been reported in various studies from developing nations (Kayyali et al., 2019; Sami et al., 2017). Patients' knowledge about diabetes and how to live is required to achieve better compliance with diabetes prevention and care for those already with the disease (Ubangha et al., 2016).

Problem Statement

The WHO (2016) indicates that approximately 220 million people globally have Type II diabetes. It is projected that without intervention, by 2030, the number will increase. In Africa, diabetes prevalence is estimated at 380/100,000 (about 14.2 million people) and is projected to increase to 420/100,000, approximately 34.2 million, by 2040 (Bello-Ovosi et al., 2017). In Nigeria, Type II diabetes age-adjusted prevalence among people 20 to 79 years increased from 2.0% to 2.1% in 1990 and from 5.7% to 5.8% in 2015 (Adeloye et al., 2017). The number of people hospitalized due to hyperglycemia, Type II diabetes, and other diabetic-related complications was 222.6 to 312.1 per

100,000. Simultaneously, the case casualty rate has increased to 36.0%, and the mortality rate from 30.2% to 45.8% (Adeloye et al., 2017). Type II diabetes is a significant public health concern in Nigeria, where it is noted to be the third most affected nation with diabetes in Africa (IDF, 2015). Several studies have documented the burden associated with the disease in Nigeria (Agofure et al., 2018; Ugwu et al., 2019). The prevalence rate of diabetes is on the increase, as is the rate related complications and associated mortality rates (Agofure et al., 2018). The number of undiagnosed persons with diabetes in Nigeria is 70% to 80% (Fasanmade & Dagogo-Jack, 2015). The number remains bothersome. This population represents the most significant number of persons with Type II diabetes and increases the risk of stroke, kidney disease, and lower extremity amputation by visiting the hospital. In contrast, others are diagnosed during public health screening programs (Fasanmade & Dagogo-Jack, 2015).

Few studies exist that explored access to diabetes information and care in Nigeria, including patients' experiences accessing diabetes information and care. Oputa and Chinenye (2015) explored diabetes in Nigeria, while Adeloye et al. (2017) examined the hospitalization and mortality rate from diabetes in Nigeria. Neither of the studies investigated patients' experiences accessing diabetes information and care in Nigeria. There is, therefore, a need for more research among this diabetes population to understand their experiences, particularly as it relates to diabetes care (Biernatzki et al., 2018; Grobosch et al., 2017). This study is designed to help understand patients' experiences, needs, barriers, and challenges related to access to diabetes information and care in Abuja. The results of this study further identify the determinate social factors that

hinder or support patients' ability or inability to access diabetes information and care. These study findings are significant and vital in developing awareness and bringing about effective strategies to eliminate barriers in accessing diabetes information and care.

Purpose of the Study

The purpose of this study was to explore the experiences, barriers, and needs of residents of Abuja Municipal Area Council, Nigeria, as it relates to accessing diabetes information and care. Adults 18 years and above, diagnosed with Type II diabetes in 2019-2020 residing in Abuja Municipal Area Council in Nigeria, constituted part of the study. Also, community health workers assisting patients in accessing diabetes information and care were part of the study. This study focused on exploring diabetic patients and Community Health Worker's experience related to accessing diabetes information and care. The prevalence of Type II diabetes in Abuja Municipal is estimated at 4.4%, which is higher than the national prevalence of 2.2 % (Orji et al., 2019). Hence, this review explores the experience of patients diagnosed with Type II diabetes and Community Health Worker's to understand better the factors that impact access to health information and care.

Nature of the Study

The study was qualitative research in orientation. Qualitative research is designed to focus on collecting data in sounds, visuals, and other observable humans' actions and behaviors. For this study, I tapped into experiences and generated conclusions of people with diabetes and the Community Health Workers who care for them. A qualitative study is considered most appropriate for data collection as participants' experiences, more so as

structured interviews constitute instruments of data collection. Therefore, Phenomenological method and personal face-to-face interviews were used to collect information on accessing diabetes information in the area studied. As Creswell (2015) observed, eight to 12 study participants is acceptable sample size for a qualitative phenomenological study, in which data collection will continue until saturation is achieved. The research questions administered to the participants were instantaneously followed with prompts in form of open-ended questions to dig more into submissions. This both strengthened findings, enhanced accuracy and reliability and helped cross-check for analytical compliance regarding the study's aims.

Participants for the study were recruited through a community-based approach. This approach allowed me to recruit patients through community events and churches and to use various community members such as community health workers (Agency for Healthcare Research and Quality, 2016). The interviews were recorded, transcribed, and coded. Themes were developed from the recorded transcripts and compared to the literature and the conceptual model to provide an in-depth understanding of participants' experiences accessing diabetes information and care. The study's data analysis process was a modified Van Kaam approach.

Research Question

The research questions for this qualitative study are:

Research Question 1 (RQ1): What are the experiences of residents of Abuja, Nigeria, who have been diagnosed with Type II diabetes accessing information and care for their diabetes?

Research Question 2 (RQ2): What is the lived experience of community health workers in Abuja concerning patient's access to diabetes-related information and care?

Theoretical and Conceptual Framework

Theories are used to explain and predict behavior, while conceptual frameworks are used more practically to understand a problem's nature (Glanz et al., 2016). The conceptual framework was useful in guiding specific research studies, such as descriptive and exploratory studies. This study was anchored in the Social-Ecological Model (SEM), considering several factors. The SEM provides a framework for understanding the individual, interpersonal, organizational, community, and public policy factors that influence health outcomes. The SEM has been used in various studies to provide guidance and capture multiple influences that impact various health behaviors and outcomes (Glanz et al., 2016). Therefore, the SEM is useful to understand the conceptualization of individual interaction with society and how culture influences individuals at different levels (Glanz et al., 2016). The SEM is appropriate for demonstrating the influence of numerous behavioral elements and improving understanding of experiences (Caperon et al., 2019).

Unequal distribution of health care services in Nigeria has been found to affect access to diabetes information and care (Askitipi, 2018). Also, social and structural factors, such as access to health services, quality of services, level of education, social support, and access to mass media and changing technologies such as cell phones, internet, and social media have been recognized as a determinant of Type II diabetes (Askitipi, 2018; Center for Disease Control and Prevention, 2019). Access to diabetes

information and care is essential to achieve health outcomes. An understanding of patient experience has become an important focus, and the inadequacies of health systems in meeting patients' health needs have become essential (Ho et al., 2017). Multidimensional factors characterize a patient's experience accessing diabetes information and care.

In keeping with SEM, the fundamental aspects of a patient's experience accessing diabetes information and care can occur at five levels: the individual level, interpersonal level, the community level, organizational level, and policy/enabling environment. This study anchored all level as fronts for exploration with regards to the goals of the study. The SEM as applied in the study provides a framework that will allow for an in-depth understanding of the experience of people diagnosed with Type II diabetes trying to access information and care in Abuja Municipal Council, Nigeria.

Significance of the Study

This study yields useful information about patients' experiences accessing diabetes information and care in the Federal Capital Territory Abuja, Nigeria. From the reviewed experiences, barriers, and the needs of patients with Type II diabetes residence in Abuja Municipal Area Council, this study creates awareness of intricateness of living with Type II diabetes's and the social determinant to that effects. The study also demonstrates the factors that are specifically associated with the ability or failure of accessing diabetes information and care to enhance easy access to diabetes information and care in Nigeria. The study provides insights useful to policymakers as a guide in developing health policies towards provisions for diabetes patients in access to healthcare in the country, thereby improving care for those with Type II diabetes. The study

provides useful information on community health workers' role as players in assisting

diabetic persons in accessing available programs and care.

Implications for Social Change

Social change is any significant adjustment over time in behavioral patterns,

cultural beliefs, and norms (Cliffs, 2017). Large scale change is not necessarily a bad

thing, but social change may not happen on a large scale. Change may begin with a

small-scale shift in social behaviors, global institutions, or a community. The study

exposes the need for social change in sick-role and health behavior relating to diabetes in

the context of sourcing information for a more robust patient's healthcare worker

relation. This will strengthen health professionalization about the care for diabetic

patients and the improvement of services to patients. Relatedly, the need for collaboration

between the state (government), patients, and the community, specifically corporations

and Non-Governmental Organizations (NGOs), in the drive to the improvement of both

health facilities and the provision of diabetes information to specific areas of patient's

needs are highlighted and presented. The study directs to positive social change through

knowledge in healthcare policies specifically for diabetes patients.

Definition of Terms

Access to information and care: The timely use of available information and

health services, accessibility, gaining entrance into the health care system and available

information, acceptability of health insurance that is affordable, which determines the

best health outcome of diabetes individuals (Healthy People, 2020).

Community-based recruitment approach: This is the strategy of recruiting patients through community events or churches and using various community members such as community health workers (Agency for Healthcare Research and Quality, 2016).

Community Health Workers are chosen and trained to provide primary health information and support to their community members. They can provide promotional and preventive information and also rehabilitation care (Egbujie et al., 2018).

Hypoglycemia: Low blood sugar (Adeloye et al., 2017).

Hyperglycemia: High blood sugar that leads to organ damage (Adeloye et al., 2017).

Insulin: A hormone produced by the pancreas and in control of regulating blood sugar to prevent the incidence of hyperglycemia or hypoglycemia (American Diabetes Association, 2016).

Prediabetes: It is a severe health condition where the sugar level in the blood is higher than the average blood sugar level but not yet high enough to be considered Type II diabetes (CDC, 2018)

Type II Diabetes: Usually occurs in adults 40 years and above but is gradually seen in children and adolescents. With Type II diabetes, the body can produce insulin. However, it is either insufficient, or the body cannot respond to its effect, which leads to a build-up of glucose in the blood (WHO, 2018).

Scope and Delimitations

This research's range of delimitations consisted of residents of Abuja Municipal Area Council, diagnosed with Type II diabetes, trying to access diabetes information and

care. This study on accessing diabetes information and care in Abuja Municipal Area Council Nigeria is limited extensively to adults 18 years and above, diagnosed with Type II diabetes in the 2019-2020. The study excluded participants' utilization rate of diabetes information and care, which is not part of the study. All living with Type II diabetes within Abuja Municipal Area Council pass for consideration in the study. All study participants are provided informed consent and evaluated based on their informed submission in line with the study's overall framework.

Assumptions

This research's primary assumption was that participants are honest when responding to the research questions, relating to their experiences both as patients in their sick-role and as participants in the study. In this context, the patients' submissions are recorded relating to their needs, barriers, and challenges related to diabetes in the Abuja Municipal Area Council, Nigeria. The study trusts the methodological framework adopted to filter interferences and mitigate the subjects' biases and researcher relaying to the study.

Limitations of the Study

This study is qualitative and phenomenological in an orientation that explores the experience of residents of Abuja Municipal Council diagnosed with Type II diabetes in the 2019-2020. The key instrument used was a semi-structured open-ended questionnaire that gathered data from participating individuals who provided first-hand information on their lived experience in accessing diabetes information and care from the Abuja Municipal Area Council. A sample of 11 participants, six diabetes patients, and five

community health workers were engaged in providing in-depth information about their experiences living with Type II diabetes as a phenomenon. The study was limited to Abuja Municipal Area Council. While the study acknowledged the limits of the sample for generalization, it was expected that the sample is enough to provide useful information to help understand the experiences of patients diagnosed with diabetes in Abuja Municipal Council in the context of a qualitative study. This study depended on the extent of the truthfulness in the research participant's disposition and submissions for the study. Self-reporting of their experience accessing diabetes information and care is taken variously, collectively, and interpolated, highlighting the less than truthful responses, therefore safeguarding the quality of the study's data and findings.

Summary

In Nigeria, Type II diabetes is gradually becoming a health care burden that is draining families and the healthcare system. Also, the disease is associated with other health complications that make it more challenging to address. Despite numerous intervention programs and campaigns about the disease's consequences, the rate at which Type II diabetes and its burden are increasing in Nigeria is worrisome. Few studies exist that explored access to diabetes information and care in Nigeria or patients experience accessing diabetes information and care. There is, therefore, a need for more research among this diabetes population to understand their experiences, particularly as it relates to diabetes care (Biernatzki et al., 2018; Grobosch et al., 2017). This study identifies barriers that hinder access to diabetes information and care. Next is Chapter two of the study. The review of literature on accessing diabetes information and care in Nigeria.

Chapter 2: Literature Review

Introduction

Type II diabetes is prevalent among adults in Nigeria. In Abuja Municipal Area Council, the prevalence is very high, yet few studies exist that have explored access to diabetes information and care in Nigeria. The purpose of this study is to explore the experience of residents of the Abuja Municipal Area Council, diagnosed with Type II diabetes in the 2019-2020 trying to access diabetes information and care. This study explored the barriers and challenges of obtaining diabetes information and care and how those barriers and challenges were met. This chapter provides an overview of the literature relating to diabetes information and care, healthcare situation in Nigeria, quality of diabetes care in Nigeria, health literacy and access to information and care, patients' knowledge, and Type II diabetes attitude.

Literature Search Strategy

In gathering sources for the literature review, the following electronic databases were searched: African Journals Online, Google Scholar, EMBASE, PubMed, and the Cochrane Library. Articles related to the topic were also searched from the Walden Library search function. The following search terms were used in the search: *Diabetes, diabetes mellitus or Type 2 diabetes, access to health care, access to information, healthcare use, Community Health Worker, Diabetes Care in Nigeria, Myths, and Misconception of Type II diabetes.* After identifying relevant studies, bibliographies and reference lists were reviewed for appropriate studies not identified electronically. The

search includes articles in the English language, and qualitative and quantitative studies published between 2015-2019.

Diabetes and Access to Care

Similar to the literature on accessing diabetes information in Nigeria, the available studies on access to diabetes care in Nigeria are limited. The available data address access to diabetes care in other settings can shed light on this study, as these studies are useful in understanding what is happening in Nigeria. Even Though Nigeria is a developing country, there is no expansion of insurance coverage, as citizens are faced with delay attaining the countries universal health coverage (Okpani, & Abimbola, 2015). McIntyre and Song (2019) reflected on the US Affordable Care Act and directions at the close of a decade. The study revealed that despite public debate on the Affordable Care Act, the policy had left a memorable mark on the country's healthcare system by expanding insurance coverage to state levels where people can compare insurance options and choose an excellent plan. The study indicated that since the law was implemented eight years ago, it had reduced the number of uninsured individuals by about 20 million. All in an attempt to improve healthcare delivery in the country (McIntyre & Song, 2019), thereby providing the opportunity for all to access healthcare services, irrespective of their socioeconomic status.

Equal access to healthcare services in a nation depends on the political and economic effort, as the financial status is critical in financing the health sector. The National health policy in Nigeria was first launched in 1988 and reviewed in 2004. However, it becomes compulsory to develop a national health policy that will include the

agenda of the United Nations Millennium Development Goals (MDGs) and the

Sustainable Development Goals (SDGs), aiming to address the involving health issues

(Asakitipi, 2018). To ensure universal access to health care for all citizens, Nigeria

established the National Health Insurance Scheme (NHIS) to provide coverage for all

Nigerians, with programs for the employed and unemployed sector. However, the current

coverage scope is only 7.9 million, as there is no provision of NHIS for the unemployed

and poor citizens (Adeniji, 2017).

The health policies in Nigeria have shifted over time, and this shift has led the

National Health Insurance Scheme to introduce out of pocket costs (Aregbeshola &

Khan, 2018). Private expenditure for health in Nigeria is at 63.3%, out of which 95.4% is

out of pocket expenses; many Nigerians pay out of pocket medical bills, particularly the

poor without health insurance (Adeniji, 2017). Amu, Dickson, Kumi-Kyereme, and

Darteh (2018) examined variations in health insurance coverage in four African

countries: Ghana, Kenya, Nigeria, and Tanzania. The study revealed differences in

health insurance coverage in the four countries, with Ghana recording its citizens' highest

insurance coverage. However, Kenya, Tanzania, and Nigeria may not attain universal

health coverage with each country's health situation (Amu et al., 2018). In Nigeria, the

poor and unemployed cannot access NHIS since they do not have adequate information,

cannot afford the user fees, and lack access to transportation, gender disparity, and poor

education in accessing health care (Adeniji, 2017).

The social structure of Nigerians is complex and has influenced the health-

seeking behavior of Nigerians. Asakitipi (2018) indicates that Nigeria is divided into

three groups; (1) the wealthy elites, represented by politicians and prominent business people, (2) the middle class, which comprises of the working-class group, and (3) the lower class consisting of disadvantaged groups, mostly rural dwellers. The elite group is divided into two groups, the extremely wealthy who do not use health care facilities provided in the country; instead, they travel to other developed countries for medical treatment. The lower upper class operates in private hospitals for a minor ailment and only travel abroad for primary medical care. The middle class consists of the working-class groups and are subdivided; those with managerial posts with government and private sectors, director generals in public and private sectors, this group patronize the country's high-class private hospitals.

A majority of the low-class group, the low-income earners of the population, accesses the general public hospital, pharmacy shops, drug sellers, and traditional healers (Asakitipi, 2018). There is a lot of crisscrossing in Nigerians' health-seeking behavior, and the elites combine the services obtained abroad with spiritual and traditional patronage used by the lower-class groups. While the lower class uses traditional medicine as their primary source of medical assistance due to limited availability of other forms of healthcare services, lack of money to pay out of pocket expenses, or lack of health insurance (Asakitipi, 2018). Accessibility of health information and care in Nigerians is influenced by the health policies that have changed over the years that will, in turn, affect the socioeconomic groups of the society in accessing health care services.

Diabetes Information and Access

Crangle et al. (2018) examined diabetic patients' information needs by exploring patient knowledge about Type II diabetes. The study used a question-based approach to expose patients' knowledge about information or resources not known to them about Type II diabetes. The study collected 164 questions from diabetic patients and 300 questions from the public on specific topics about diabetes in Northern Ireland. The study reported that items on clinical matters related to access to medical records, complications, psychosocial experiences, and diabetes treatment, indicating that patients are worried about diabetes complications and psychosocial issues associated with Type II diabetes. The study established that searching for health information online is not suitable for answering patients' questions about their diabetic situation and recommended a better way of disseminating health need information and responding to patient health information requirements as they change over time (Crangle et al., 2018).

Crangle et al. (2018) is a follow-up to the study undertaken by Pianet al. (2016) that looked at the criteria people use to search for health information from HealthBoards.com, a website chosen for its frequent use by people living in Singapore looking for information for their health issue. In the study of Pian et al., 58 participants were given three different pieces of information to search for on a health discussion forum and HealthBoards.com. The study established that participants browsing for health information focused on disease symptoms, family history, and disease description. Information searches for others focused on terminology, cause of disease, and procedure

for treatment. However, those browsing with no health concern in mind focused on health topics in general, occasional health issues, and hot topics.

Petrovski and Zivkovic (2017) used Facebook and Care-Link software to evaluate control of glucose levels in Type I diabetes patients at the Center for Insulin Pump and Sensor in the Former Yugoslav Republic of Macedonia. The study found that the use of social media as a tool could improve glucose control levels (Petrovski & Zivkovic, 2017). However, Noble and Lower (2017) argued that while computer technology might be a way for patients to get health information, there is still a need for patients to interact with health professionals who will interpret such details for better understanding. Kuske et al. (2017) also agreed with Harris et al. (2017) that even though diabetic patients regularly use social media to seek information, health professionals still play a significant role in supporting information-seeking behavior due to their specific needs.

Biernatzki et al. (2018) stated that Type II diabetes patients' information needs are high and suggested more research should be conducted among different diabetes population groups to understand their experiences accessing information and care. The findings of this study corroborate Grobosch et al. (2017) observation that in diabetes care it is essential to obtain information on all aspects of patients' condition for effective treatment. The results indicated that people looking for health information has a different judgment of their health condition and would benefit from health professionals who can analyze their health condition and prescribe proper medication. Studies on patients' experience accessing diabetes information conducted in Nigeria are limited; however, the studies presented highlight the need to understand better the health information needs and

health-seeking experiences of diabetic patients in countries like Nigeria, where the socio-economic, political and health milieu provides fatal group to explore aspects of living with diabetes and diabatic management.

Economics in Access to Diabetic Care

Aregbeshola and Khan (2018) explore catastrophic health expenditure and poverty among households in Nigeria as it relates to out of pocket medical bill payment. The study was aimed at examining the financial burden families suffer after paying out of pocket medical expenses. Results from the findings indicate that 16.4% of families incurred a 10% threshold of their total consumption as a health burden after paying out of pocket medical expenses, and 13.7% of families incurred a 40% threshold of their total consumption as a health burden after spending out of pocket medical expenses. The $1.25 a day poverty line was used for assessment, the family poverty rate was 97.9% of the total payment for healthcare services, and there was a 0.8% increase in the family poverty rate, stating that about 1.3 million Nigerians are below the poverty line, indicating that wealthy families spend a significant fraction of household income on healthcare and are more likely to incur payment burdens. In contrast, the disadvantaged families seek low-quality care, resolve to self-medication due to the inability to make out of pocket medical expenses (Aregbeshola & Khan, 2018).

Okoronkwo et al. (2015) explored the economic cost of people living with Type II diabetes in Nigeria, where treatment typically costs $350 per month. Respondents reported covering medical expenses using a combination of household saving (99.0%), support from family members (85.3%), and sale of land (9%), health insurance (9%), and

government support (2%) (Okoronkwo et al. 2015), showing the disaggregation coping strategies of low-income individuals with Type II diabetes. The cost of care can hamper access to care due to the inability to pay out of pocket expenses, thereby increasing the morbidity and mortality rate of diabetic patients, and this has increased due to poor coordination of care, which has resulted in poor health outcomes, particularly in the primary and secondary health system (Fasanmade & Dagogo-Jack, 2015). Also, the difference in health facilities between rural and urban location, differences between public and private healthcare sectors, lack of care guidelines that are specific to their population, lack of medication, and attitude of health professionals may be a barrier (Adeniji, 2017; Iregbu & Iregbu, 2016; Pastakia, et al. 2017).

The Healthcare Situation in Nigeria

This study sought to use the socio-ecological model to identify factors impacting access to diabetes information and care in Nigeria. The Healthcare system in Nigeria has gone through incredible transformations since the country's independence in 1960. However, notable progress has been made through the years; the economic recession of 1987 due to the reduction in crude oil that the country depends on affected the healthcare system (Asakitikpi, 2019). There were workforce crises due to months of wages owed health professionals, inadequate administrative responses, acceptance of the structural adjustment program, which announced a shift from a welfare arrangement to the introduction of out of pocket payment, and proliferation of private healthcare services. The healthcare system is expensive, while the high cost of treatment does not guarantee active services as the system is weak, with no coordination throughout the country

(Adeloye, 2017). Therefore, preventing an ideal healthcare delivery to the people. The proliferation of private healthcare systems, which was not regulated, led to introduction of fake and adulterated drugs that have caused an unprecedented high mortality rate. The National Agency for Food and Drug Administration and Control (NAFDAC) (2019) stated its mandates as the Nigeria's regulatory agency task to regulate sales, manufacture, importation, exportation, and advertisement of drugs in the county. However, as Adeloye, (2017) noted, NAFDAC has been unable to fight the proliferation of fake drugs, as dealers have the backing of politicians and policymakers, lack satisfactory and continuous sustenance from the government. The Nigerian Drug dealer breech stipulated drug laws and get away with it, thereby committing mass murder of vulnerable individuals while smiling to their banks. Several factors are responsible for the deplorable state of healthcare in the nation, such as; lack of coordination of services, disintegrated services, the unfortunate outcome associated with lack of access to health care services, and disparity in the distribution of resources and access to health care services (Adeloye, 2017). Other factors include the cost of healthcare services as some patient are unable to pay out of pocket medical bills after receiving care, socioeconomic status of the patient, and the ethical difference in the country, as the nation is made up of 350 different ethnic groups, making it difficult for persons with Type II diabetes to access information and care for their diabetic condition. Health policy is a considerable determinant of everything that happens in health services delivery in Nigeria. The interview of Community Health Workers explored policy/enabling environmental factors that impact access to diabetes information and care (CDC, 2018).

Quality of Diabetes Care in Nigeria

According to the American Diabetes Association's Standards for Medical Care in Diabetes (2019), standard medical care includes screening, diagnosis, and therapies that will positively affect the health outcomes of diabetic patients. Adeleye and Kuti (2016) looked at the quality of diabetes care in Nigeria's geographic area. The study used a diabetes indicator that the National Diabetes Quality Improvement Alliance (NDQIA) permitted to evaluate facilities' practice and 332 diabetic patients' health status. The study revealed that assessing diabetic patients in those facilities was substandard compared to South Africa and the United States of America. The study recorded that the most consistent evaluation of diabetes care in the facility was weight 93.4%, blood pressure 98.8%, hemoglobin A1C (HbA1c) test 41.6%, and low urine rate microalbuminuria performed 0.3%, eye examination 15.4%, and one-foot analysis 10.5%. Establishing a need to improve the organization and delivery of care to diabetic patients, educate health workers, and provide health insurance to all citizens (Adeleye & Kuti, 2016).

Agofure, et al. (2018) conducted a semi-systematic review and looked at the state of diabetes care in one of Nigeria's geographic areas. The study revealed possible complications of Type II diabetes if not adequately cared for, such as cardiovascular disorder, retinopathy, renal complications, nephropathy, and neuropathy complications. The study results discovered that poor organization of care, lack of diabetes specialists, lack of knowledge, and patients' attitude, as factors that affect the quality of care in the community. Individuals' inability to access healthcare in society due to their social status and failure to make out of pocket expenses is worrisome. From the study carried out by

Adeleye and Kuti (2016) comparing Nigeria and South Africa, another developing country, Nigeria, diabetes care was found to be substandard while the quality of care in South Africa is similar to that in the United States. Quality care in Nigeria comes at a cost. The less privileged, who are the majority of the population, cannot afford to pay specialists who are limited but available in the private hospitals where the rich can afford them (Asakitikpi, 2019).

Onyiriuka et al. (2019) assessed physicians' knowledge, attitude, and practices in Nigeria on Type II diabetes. Results of the study revealed that 288 physicians from different states in Nigeria participated in the study, and questions answered correctly were; 55.9% on fasting plasma glucose diagnostic criterion for diabetes, 72.9% best test for monitoring glycemic control, 93.55 diabetic ketoacidosis (DKA) is an immediate complication, 86.5%, insulin therapy is essential in the management of childhood diabetes and 91.3% on diabetes is a dangerous disease. However, some questions were not answered correctly by the physicians, 39.6% are unaware of the strong hereditary nature of type 2 diabetes, and 39.6% do not know the correct method of storing insulin (Onyiriuka et al., 2019). The findings from this study suggest that physicians from Nigeria require additional training on Type II diabetes and the patient-centered approach to provide the international standard of care.

The American Diabetes Association's Standards for Medical Care in Diabetes (2019) provides tools and guidelines to evaluate the quality of care updated annually by the ADA professional practice committee. ADA's recommendations for quality care ensure that the disease's treatment is timely, evidence-based, and patient-specific.

Alignment of diabetes management to chronic care model by the interaction of patient and care team. Care facilities should ensure the availability of team-based care, tools to support patient decision making, patient registries, and involve the community to meet patients' needs. Ensure assessment of the quality of diabetes care, provide quality improvement strategies, and promote the improvement of care processes (ADA, 2019). The role of government, health professionals, and diabetes patients are essential in patients' accessibility to diabetes care and quality of care. The SEM factors that could impact the quality of diabetes care in Nigeria will be organizational factors, including rules, regulations, policies, and informal structures that may constrain or promote health outcomes (Center for Disease Control, 2018).

Literacy and Access to Information and Care

The ability to read and understand health information is a functional literacy ability. In Sub Saharan Africa (SSA), the realization of the burden of chronic non-communicable diseases such as diabetes is low (Nuche-Berenguer & Kupfer, 2018). The concept of health literacy is a person's ability to acquire health information, understand and utilize the information accessed to improve health outcomes (Batterham et al., 2016). Studies on this research topic conducted in Nigeria are limited, however similar studies have been conducted in other settings. The study of Amante et al. (2015) is useful in understanding what is occurring in Nigeria, as there are apparent issues. The study by Amante et al. (2015) evaluated the ability to access health information using online health chat rooms and the internet to search for health information. Amante et al. (2015) established that individuals who have difficulties obtaining health services for reasons

other than health insurance use the internet. The survey population was 32,139 adults, 3.63% reported using online health chat rooms, 3.63% least one access to care barrier, and 43.55% reported searching the Internet for health information (Amante et al., 2015).

The study concluded that people experience different challenges accessing healthcare services, some of which are unconnected to health insurance but are connected to health literacy, and suggest an upgrade of available health information online. In a follow-up study by Diviani, et al. (2015), conducted a systematic literature search to evaluate the effect of low health literacy in analyzing online health information, understand the quality, have the confidence to use the information and also use standard measures to assess the online health information. The study established that the level of health literacy an individual possesses affects their ability to evaluate and appraise online health information. Low health literacy negatively affects the ability to interpret health information without a health professional (Diviani et al., 2015). The SEM factors that could impact health literacy and access information and care will be the individual factors that can influence a person's behavior, such as their knowledge, attitudes, beliefs, and personality (CDC, 2020).

Knowledge and Attitude in Type II Diabetes Care

Studies conducted on patient's knowledge and attitude of type II diabetes in Nigeria are limited. Several studies have shown that being knowledgeable, having a positive attitude, and following acceptable practices reduces the prevalence of Type II diabetes, while poor knowledge, negative mood, and poor practices are associated with morbidity of these patients (Abolghasemi & Sedaghat, 2015; Chinenye & Young, 2016).

Therefore, this study uses similar studies conducted in other settings to understand

Nigeria's situation, as there are apparent issues and are related. To some individuals in

Nigeria, diabetes symptoms are typically usual until the rise of a chronic complication,

resulting in morbidity or mortality (Olamoyegun, Ajani, & Akinlade, 2018). Given the

increasing prevalence of Type II diabetes, it has become significant to explore the

experience of patients with Type II diabetes accessing information and care and what

they have done to overcome those challenges that interfere with their ability to access

diabetes information and care. Abolghasemi and Sedaghat (2015) conducted a study in

two different Tehran communities to assess the patient's attitude towards Type II

diabetes. The study results were shown in themes; physical, mental, social, and spiritual

factors, as each belief, has different effects on factors that lead to Type II diabetes. The

patients also reported their health information source from health professionals, radio &

TV stations, friends and families, books, and pamphlets.

Abolghasemi and Sedaghat (2015) argue that while a patient's experience,

attitude, and knowledge toward Type II diabetes were factors associated with disease

management, patients without awareness about the disease cannot access accurate health

information and control. Studies have shown that this finding is not peculiar to Tehran

alone. Other studies have demonstrated that the degree to which an individual will access

health information and care depends on their knowledge about the disease complications

(Chinenye & Young, 2016). Patient's knowledge and attitude towards type II diabetes can

also be influenced by interpersonal factors, such as interactions with other people. These

interactions can provide social support or can create barriers to interpersonal growth that promotes positives health outcome.

Community Health Workers in care for Type II Diabetes

The state of existing knowledge and quality of healthcare services in Nigeria has warranted community health workers' presence to help diabetic patients access health information and care to maintain optimal care. Past studies have demonstrated community health workers' efficiency (Egbujie et al., 2018; Garner et al., 2019; Trump & Mendenhall, 2017; Schwarz et al., 2019). The study of Egbujie et al. (2018) reviewed 1008 peer-reviewed articles from 2000-2015 to assess how community health workers support Type II diabetes patients in high-income countries and that such lessons can be used in low-income countries. Fifty-four articles were selected that focused on populations from low-income settings. The study results revealed that community health workers were utilized as health system advocates; they support gathering health information and educating on self-management and care (Egbujie et al., 2018). Because community health workers share ethnicity and language with community members, they can offer interpretation and translation services to diabetes information and care access to patients.

Duffy et al. (2019) designed and implemented a clinical app for smartphones to enable community health workers in rural Guatemala. The community health workers are trained to collaborate with local physicians to provide primary diabetic care using international guidelines (Duffy et al., 2019). Results from the study revealed that the use of smartphone app to deliver diabetic care by community health workers directly is safe

and reasonable to use, there was an improvement in diabetes care, A1c reduced by 1.5% in 3-month, diabetic patients met their treatment goal, which increased from 13.0% to 34.8% of the study participants (Duffy et, 2019). The study also indicated that using a smartphone app has shown to be safe, realistic, and rewarding to patients and community health workers in improving diabetes care (Duffy et., 2019).

Garner et al. (2019) randomly selected 1764 individuals with Type II diabetes in East England who volunteered to be trained as Diabetes Prevention Mentors (DPM). They worked with healthcare professionals to encourage lifestyle change. The DPM was interviewed and appointed roles, 73% of the DPM worked for six months, and 73% for one year (Garner et al., 2019). Garner et al. (2019) revealed that diabetic patients could be trained to volunteer as DPM; the model is cost-effective and can access Type II diabetes individuals sharing the same lifestyle. A similar study by Schwarz et al. (2019) evaluated the services offered by community health workers in Ghana in 2017. The study gathered data on services that the community health workers performed, ranging from supervision to service delivery (Schwarz et al., 2019). Schwarz et al. (2019) revealed that the community health workers had over 80% supervision interactions in different service delivery areas. However, non-communicable disease treatment was not part of the assignment, but the community health workers provided assistance to nine out of the country's 10 regions (Schwarz et al., 2019).

From the above studies, community health workers have proven to play several roles in accessing information and care for Type II diabetic individuals through structured education, ongoing support, and health system encouragement. The preparation and

coordination of community health workers for these roles are essential (Egbujie et al., 2018). The SEM allowed me to look at determinants of access to diabetes information and care at many levels that can influence community health workers' deployment. My interviews with individuals living with diabetes covered the community's social norms, individuals, groups, or organizations that can limit or enhance diabetes information and care access. In contrast, the interviews with community health workers included formal factors that improve access to diabetes information and care.

Theoretical and Conceptual Framework

This study is designed to explore the experience of diabetic patients trying to access diabetes information and care. The SEM is a model of analysis. The SEM is a multifaceted and interactive model used to understand the effects of environmental factors and personal impacts that determine behaviors and identify experiences in organizational or community settings that influence health promotion within communities, and societies (Kilanowski, 2017). There are five levels of the SEM: Individual, interpersonal, community, organizational, and policy/enabling environment (national, state, and local laws; see Figure 1; Center for Disease Prevention and Control, 2018).

Figure 1

The Social-Ecological Model

Policy/Enabling Environment (national, state, local laws)

Organizational (organizations and social institutions

Community (relationships between organizations)

Interpersonal (families, friends, social networks)

Individual (knowledge, attitudes, behaviors)
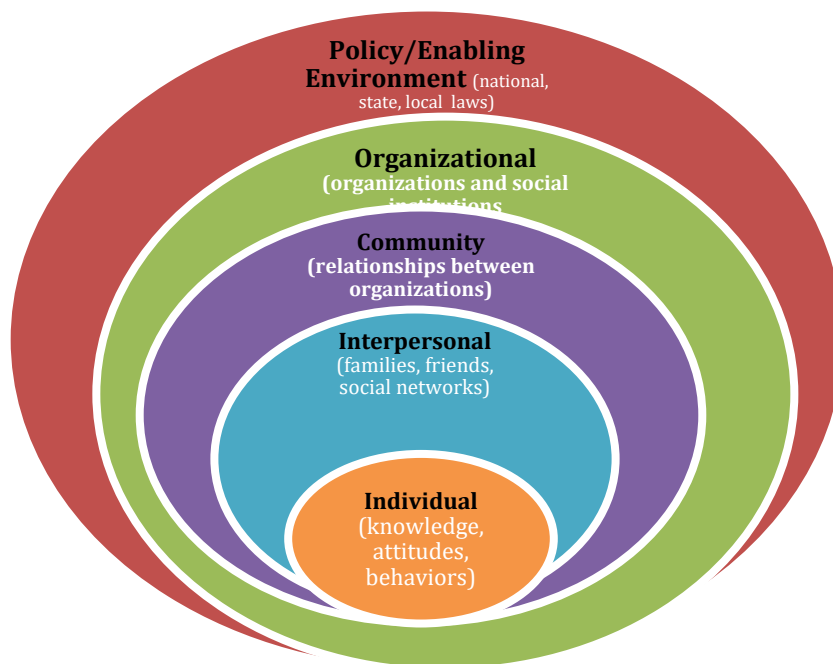
Note. Adapted from *Using The Socio-Ecological Model To Frame Agriculture Safety And Health Interventions* By Lee, C.B. et al. 2017, Journal of Agromedicine 22 (4).

The individual-level influences a person by changing their behavior, such as knowledge, literacy, attitudes, developmental history, racial/ethnic identity, economic status, and stigma. At the interpersonal level, the individual's behavior is influenced by social support and social network, including families and friends, co-workers, religious systems, customs, traditions, etc. At the community level, the individual is influenced by a network of information within their boundaries, institutions, organizations, and built environment. At the organizational level, the individual is influenced by social institutions with rules and regulations for operations that affect how well services are provided to individuals or groups. At the Policy/Enabling Environment level, the

individual is influenced by local, state, national, and international policies. Policies regarding the allocation of resources such as access to healthcare services or lack of policies negatively impact the individual (CDC, 2018).

The model is a concept embraced by many health-promotion researchers. It guides the study to understand better how the integrated action at the community levels influences patients with Type II diabetes accessing information and care. The Social-Ecological Model helps understand factors that affect the healthcare-related experience and provides a guideline for developing successful intervention programs (Glanz et al., 2015). Social and structural factors have been recognized as determinants of Type II diabetes (Asakitipi, 2018). Caperon et al. (2019) conducted a study to understand better the determinants of dietary behavior among diabetes patients, created a social-ecological model specific to cultural context. The purpose of the study was to inform culturally appropriate dietary behavior intervention to improve healthy behavior. The study indicated that the most significant determinants for improving dietary behaviors were cultural practices, social support, political and physical environment, personal inspiration, and resources (Caperon et al., 2019).

Harper, Steiner & Brookmeyer (2018) analyzed Spencer et al. (2018) study on health care coverage and access among children, adolescents, and young adults, using data from National Health Interview Survey in the U.S.A. between 2010 to 2016. The study highlighted likely reductions in the number of uninsured adolescents and young adults, with noticeable declines in adolescent development coverage. According to Harper, et al. (2018), results from Spencer et al. (2018) indicated an increase in insurance

coverage was essential but inadequate in improving the quality of care between childhood and adulthood. The result demonstrated that access to care and use of care deteriorated between childhood and early adulthood; 86 % of children visited their providers in the previous year compared to 56% visits by young adults. While 96% of children also had a regular source of care compared to 75% of young adults.

The findings imply an increase in health insurance coverage needs to include other interventions to address other factors that influenced access to and the use of care (Harper, et al. 2018). Harper, et al. (2018) suggest the use of the multilevel approach of the SEM to form a comprehensive plan in increasing access to health care for adolescents by an increase in youth-friendly provider and clinics connect schools, social media, and parents to improve access to care and utilization as an intervention at different levels of the SEM interacts to yield more significant access to quality of care.

The SEM is therefore used to understand the conceptualization of individual interaction with society and how they are influenced by the culture at different levels and serves as a guide in mapping interventions targeted at many determinants (Glanz et al., 2016). It is appropriate to demonstrate the influence of numerous behavior elements and improve understanding of experience (Caperon et al., 2019). In this direction of thought, the SEM becomes relevant and proper a model required to examine the experience of diabetic patients accessing diabetes information and care in Nigeria. The SEM developed for the study illustrates the influence the community network of knowledge within their boundaries, institutions, and organizations, and the built environment has on individuals with Type II diabetes in Abuja Municipal Area Council.

The social determinants factors such as access to health services, the quality of those services, level of education, social support and access to mass media, and changing technologies such as cell phones, internet, and social media all played a vital role in living with and surviving Type II diabetes (Center for Disease Control and Prevention, 2019), and may influence access to diabetes information and care in the surrounding environment. The socioeconomic environment has been recognized as a critical determinant of Type II diabetes. Individuals from low-income communities are more likely to have a problem accessing diabetes information and care than affluent individuals. The study aimed to develop an ecological model to explore how the community influences individuals with Type II diabetes accessing diabetes information and care.

Summary

This chapter focused on reviewing available literature connecting access to diabetes information and care in the Abuja Municipal Area Council, Nigeria. The reviewed literature indicated the literature gaps in patient experience accessing Type II diabetes information and care. The review identified possible determinants of access to diabetes information and care, such as lack of diabetes specialists to offer standard care, lack of knowledge, patients' attitude, poor organization of care, inability to access healthcare services due to failure to make out of pocket expenses. Examining these determinants constitute the focus and trust of this study. Interviews of patients and CHW's structured into the methodology include the key process to test these determinants related to the study in the area of the study.

Additionally, this project utilizes the social-ecological model, which acknowledges the use of various levels of an outcome on health behavior, to examine the complex social, economic, and political factors that affect the accessibility of diabetes information and care. This research study will provide valid and reliable data on the influences of social determinants of health on Abuja residents' experiences with Type II diabetes, accessing information, and care. Chapter three present the research method of the study.

Chapter 3: Research Method

Introduction

This chapter describes the research design and method, sample size, research questions, the researcher's role, procedures for selecting participants, data collection procedure, instrumentation, and data analysis plan. Additionally, issues of trustworthiness; and protection of human subjects is presented. Also, the study setting was described.

Research Design and Approach

This study was designed to, explored patients' experiences trying to access diabetes information and care, examined what patients living with diabetes have done to overcome those challenges that interfere with their ability to access diabetes information and care. While, also explored community health workers' experience concerning patient access to diabetes-related information and care. The research design is phenomenological in orientation. phenomenological studies are qualitative in orientation. Therefore, the qualitative orientation of the study and thus the qualitative approach in the research. According to Creswell (2015) qualitative studies provides for improved understanding, and provides a framework that allows an in-depth review of complex problems associated with human perception, behavior, and experiences. Which resonates with my intent in the study which is to understand people's experiences and to provide in an in-depth perspective, carefully and adequately described, regarding their experiences. Hence, this undertaking describes the specific phenomenon (Type II diabetics), carefully examining the person's (participants in the study) experience to understand the critical part of their

experience and, in turn, how it relates to others, especially their family members and communities. In this direction, the experiences of Community Health Workers concerning patients' access to diabetes-related information and care becomes relevant and integral to the study. The overall goal is the phenomenological understanding of participants' viewpoints and their experience relating to the phenomena of accessing diabetes information and care. The qualitative phenomenological approach deals with complicated phenomena to numerically enumerate, such as experience (Kohlbacher, 2015).

Phenomenological research is a qualitative approach that allows the researcher to explore the experience of individuals and communities. With phenomenological research, the essential objective is to arrive at the descriptive nature of the phenomenon under study (Creswell, 2015). The phenomenological research method seeks to comprehend an individual's experience, perception, and viewpoint of an event or situation (Waters, 2015). Therefore, this qualitative phenomenological is an exploration into the lived experiences of diabetic patients and Community Health Workers in the Abuja Municipal district about access to diabetes information and care. Few studies have examined this topic by using in-depth interviews to explore patients' experiences accessing diabetes information and care.

The grounded theory approach allows a researcher to conceptualize hidden social patterns using the inductive strategy to collect data and then develop theory. The study does not aim to generate theories from the data collected. Rather, the phenomenological approach is being used to explore participants' experience related to accessing diabetes

information and care and what they have done to overcome any challenges that may interfere with their ability to access diabetes information and care. Hence, the adoption of phenomenological study design was best to address the purpose of this study.

Setting

The study was conducted in Abuja Municipal Area, Nigeria, in West Africa. Abuja Municipal Area Council of Nigeria. The municipal area consists of 12 wards, namely, City Center, Garki, GUI, Gwagwa, Gwarimpa, Jiwa, Karshi, Kabusa, Karo, Nyanya, Wuse, and Orozo, (Abuja Municipal Area Council, 2017). Legislators and the upper class in the society live in area like Garki, Wuse, and Apo. At the same time, the middle-class indigenous groups reside in GUI, Gwagwa, Gwarimpa, Jiwa, Karshi, Kabusa, Karo, Nyanya, and Orozo, where rent is affordable for citizens. An elected Chair governs each ward, while the city center is the Federal Capital Territory and government site (Abuja Municipal Area Council, 2017). The population of the Abuja Municipal Area Council is presently estimated at 2.4 million (World Population Review, 2019). This area was chosen because, although the federal capital territory Abuja has a prevalence of Type II diabetes of 4.4%, higher than the national prevalence rate of diabetes, which is 2.2%, there is little or no published studies on accessing Type II diabetes information and care in this part of the county (Orji et al., 2019).

Research Question

This study addresses the following primary research questions:

RQ1: What are the experiences of residents of Abuja, Nigeria, who have been diagnosed with Type II diabetes, accessing information and care for their diabetes?

RQ2: What is the lived experience of community health workers in Abuja concerning patient's access to diabetes-related information and care?

Study Sample

The study participants consisted of residents from the Abuja Municipal Area Council, Nigeria, who have been diagnosed with Type II diabetes, at least one year ago, and community health workers who work in Abuja Municipal Area Council. The Area council consists of twelve Area Council, City Centre, Garki, GUI, Gwagwa, Gwarimpa, Jiwa, Karshi, Kabusa, Karo, Nyanya, Orozo, and Wuse (Abuja Municipal Area Council, 2017). The study participants are 18 years and above, speak English and reside in one of Abuja's 12 area councils. Although approximately 350 languages are spoken in Nigeria, English is the official language. There are no specific rules regarding an appropriate sample size in qualitative research, but gathering data until saturation (Creswell, 2015).

A sample size of one participant can be used to gain insight into a phenomenon under study. Data generated from a single contact, which involves the researcher, Community Health Workers, and participants, allows for exposure of issues (Rudestam & Newton, 2015). Eleven study participants were used for data collection. The number is an acceptable sample size for a qualitative phenomenological study, with consideration for saturation in the extend of submissions related to queries as the key ultimate goal of data collection (Creswell, 2015; Rudestam & Newton, 2015). In qualitative designs, saturation can be conceptualized based on what the researcher hears from the interviewed participants. A decision can be made during the coding process when no new codes are identified from collected data (Saunders et al., 2018). The study was based on 11

participants, including Community Health Workers but data collection ended with each participant when saturation was achieved.

Recruitment procedures

For this study, the population of interest consisted of Abuja Municipal Area Council residents already diagnosed with Type II diabetes and Community Health Workers. A community-based recruitment approach was employed to enroll participants in the study. The community-based strategy involves recruiting participants through community events such as local stores, churches, and local events of the cities. Community and church leaders were contacted to gain their assistance in recruiting participants for this study (Appendix B). Identification and recruitment of community health workers were achieved through collaboration with community leaders to target the population. The inclusion criteria for participation in the study was mainly residency and to be diagnosed with Type II diabetes in the last year. Same way, residence in Abuja Municipal Council was required of the Community Health Workers, then proficiency in reading, writing, and spoken English. Also, previous health training and experience assisting residents of the Municipal Council cope with diabetes.

The Community Health Workers studied are found to be knowledgeable about the community, involved with them, and trained in the context of health intervention. The Community Health Workers selected have worked with health care services and physicians and were happy to share their experiences. All the Community Health Workers that studied were recommended by community leaders familiar with them and their services in the community. The study commenced with the IRB approval obtained

from Walden University, which allowed for travel to Abuja, Nigeria, to begin recruitment and conduct data collection. The first eight participants who respond to the contact information provided on the flyer and meet the inclusion criteria for the study were selected. This was made possible by the community and church leaders who earlier assisted with initiating the recruitment process by posting and distributing the study flyer in communities.

Data Collection Process and Procedures

The data collection process is an integral aspect of a study. In this study, data were collected from study participants directly through face to face interviews, using the Interview Schedule in Appendix D and E. Before the data collection process, a 'pilot study' was conducted to test how the questions and interview process work. After the two interviews (designed for the pilot study), the result indicates that the instrumentations and questions guide flow marched the subjects' comprehension. Thus, participants and Community Health Workers recruitment proceeded as scheduled in the framework of the methodology. Two separate sessions for data collection was carried out. The first sessions were an interview with the participants contacted through phone calls or email and conveyed to the community health center they attended for the interview. This was followed by sessions with Community Health Workers as scheduled. All sessions started only after each participant or Community Health Workers read, understood, and signed his inform consent form. Steps of the data collection process are as follows:

1. Interested potential participants contacted the researcher using the information provided on the flyers.

2. Community health workers who have had contact with diabetic patients were also part of the study.

3. A meeting place (conference room) and time were arranged for the interview with the participants.

4. At the beginning of the interview, the informed consent was explained and read to the Participants, who confirmed their intent to continue or not with the study and then proceed to sign (in the study's case) (Appendix A).

5. The researcher asked the participants permission to record their session. With approval granted, all discussions were audio-recorded, while handwritten notes were also taken.

6. The interview was conducted.

7. After the interview, the audio recordings were transcribed.

8. Each participant received their interview transcript to ensure their responses were correct.

9. The modified Van Kaam approach was used to analyze the data collected from the participant.

Data Analysis Plan

The study's planned data analysis was fashioned to provide an analytical output of results from participants' experiences in accessing diabetes information and care and Community Health Workers experiences concerning patient's access to diabetes-related information and care.   The data analysis process was drawn from the modified Van Kaam approach, popularized by Moustakas (1994). The modified Van Kaam approach to

data analysis was applied to the individual interviewee, considered as dataset. The

modified Van Kaam method of data analysis is generally regarded as appropriate for

qualitative phenomenological studies because it allows the researchers to explore the

study participants' experiences to understand the studied phenomenon's fundamental

nature through participants' voices (Sullivan & Christi, 2017). The modified van Kaam

approach, as presented by Sullivan and Christi (2017), contains eight steps:

1. Horizontalization, it's the identification of all data pertinent to experience
   from transcripts and group them into codes.

2. Reduce and eliminate expressions to determine necessary and unnecessary
   codes.

3. Matching excerpts and quotes and exploring the underlying meanings and
   group excerpts based on those underlying meanings. The groupings will
   form the themes that express the experience for each participant.

4. Identification of logical units of information and themes to compare for
   illustration or compatibility.

5. Using the validated codes, construct an individual textural description and
   categories of the reference participant's experiences, using the
   authenticated codes and verbatim examples from the transcriptions.

6. Using the personal textural story and inspirational difference, construct a
   description of the structure of the phenomenon.

7. Create an account based on the transcriptions and structure of the event that comprises the codes and categories, using the textural-structural description.

8. Finally, the development of the combined story of meanings and representative of all reference participants experience (Sullivan & Bhattacharya, 2017).

The collected data were transcribed using NVivov 12 software. Manual coding was also used as its enhanced coding and gave more control over the work's ownership. Coding breaks the transcripts into a meaningful chunk of data and helps prevent the researcher from overemphasizing an aspect of the study but ensure proper analysis of the whole interview (Saldana, 2016). NVivo 12 software was utilized for coding and comparison, exploring differences in opinions and looking for imaging themes, categories, and classification, comparing participants' experiences from others using matrix coding queries, data management, storage, and easy access. The software also enhanced coding and theme categorization, which allows for a comparison of keywords. The NVivo 12 software solidifies the data analysis process.

The Role of the Researcher

The choice of this research topic, diabetic patients experience and access to care information, was borne out of interest in impacting the disparity of health in Nigeria. The interest stems from working in a research institute in Nigeria in the course of the job. The researcher interacted with people from the rural communities and saw the anguish the vulnerable population went through. Hence, this undertaking helps guide my interface

between the people and their experience and phenomenon under research. Thus, the interview guide's development and the determination to explore and explain each subject's conditions (lived experiences) through individual face-to-face interviews, with the zeal of making informed recommendations.

Throughout the research process, the study's objectivity was upheld by cutting any personal connection with the topic or the participants, as none of the participants are related or known to me. The self-reflection principle was reflected continuously upon in the study, which allowed examining the researcher's assumptions and goals concerning her belief systems. The researcher establish delimitations, interprets, analyzes data, and disseminates findings under the extant scientific principles and Walden University research guidance and guidelines. These were always borne in mind in the course of the study. Thus, adherence to the ethical principles and guidelines for the protection of human subjects in research. I lived in Abuja for 10 years, and I understand the Federal Capital City's cultural density. I tapped into opportunities of my years of service to source for professional and social value to this study while being careful not to allow my thoughts and opinions to be demonstrated in the interviews or analysis of the interview data.

Instrumentation

The use of interview is a method of data collection in phenomenological studies (Rudestam & Newton, 2015). Face to face in-depth discussion was used for data collection in the study because it involves asking questions directly and probing with follow up questions (see: Questions for participants and Community Health

Workers in Appendix D and E). In interviews, researchers listen and record answers

from the participants in observing body language (Rudestam & Newton, 2015). In this

study, the interview questions used to reflect the research setting are clear, concise,

and easy to understand. The interview guide was developed from the reviewed

literature identified gaps based on the current body of literature related to this topic's

study.

The questions were designed to enable the researcher to obtain information

from patients on their experiences accessing diabetes information and care and

experience from Community Health Workers concerning patient's access to diabetes-

related information and care. The instruments used for the interviews were monitored

from time to time to ensure proper recording of participants' responses while also

taking notes. The face-to-face individual interview method was employed in the study

because it benefits from synchronous communication. Impliedly, a communication

mode where the message and responses are exchanged immediately, voice tone, facial

expressions, and body language observation (Creswell, 2015). These signs helped the

study get more information from the population.

Ethical Human Protection

The researcher proceeded for data collection in Nigeria after receiving the Walden

University Institutional Review Board approval. Additionally, to further equip the

researcher to conduct this study, the web-based training on Protecting Human Research

Participants, provided by the National Institute of Health (NIH), was completed.

Throughout the project, research ethics were observed protecting participants from any

form of physical, social, or psychological harm. This started with the request for the

selected participants for their consent to participate in the study. Then details briefing on

the nature and academic basis and purpose of the research provided, which ended on the

note to the participants that they are free to withdraw from the study at any stage of the

process without consequences, as a necessary measure to protect their persons and

participation in the study. A detailed introduction to the consent form and its basis, which

got signed and returned to the researcher for record-keeping. At this juncture, participants

are appreciated and thanked for participation in the study, were given pseudonyms to

maintain confidentiality. All data collected were secured on a personal computer that is

password protected. All transcripts and field notes will be kept for the next five years

before liable to be destroyed as recommended by the Walden University Institutional

Review Board rules and regulations.

Credibility

To establish credibility is developing the trustworthiness of research findings.

Inappropriate data collection, conceptual framework, and findings negatively affect

research results (Nowell, Norris, White & Moules, 2017). The purpose of using a

qualitative method in this study is to explain the studied phenomena in detail, as the

participants can rightfully judge the reliability of such findings. Therefore, to evaluate

credibility, this study ensures research questions were answered to the best of the study

subject's ability and accuracy. Also engaged was data triangulation, such as note-taking,

audio recording, and observation to capture all the dimensions of participants' experience

and check back with participants to validate if their information were conveyed correctly

and reflected their experiences accessing diabetes information and care. Using different sources to establish credibility in phenomenological studies has proven beneficial, such as voice pitch, facial expression, and body language. Credibility in qualitative research depends on the researcher's competence in using appropriate data collection and analysis instruments (Patton, 2015); the study processes and procedures maintained this stance.

Conformability

Conformability is the degree to which study findings and results can be verified by other researchers (Forero et al., 2018). Conformability for this study was established by checking and re-examining data during the research process. Content analysis of the transcribed interview data was used with a table to develop conformability. The checking of participant's submissions and triangulation of participant's recommendations were used a lot to authenticate the study's findings.

Transferability

Current research on Type II diabetes in Nigeria has not evaluated patients' experience accessing diabetes information and care. This study primarily focuses on the experience of diabetic patients trying to access diabetes information and what they have done to overcome those challenges that interfere with their ability to access diabetes information and care in Abuja, Nigeria. To ensure transferability, an in-depth description of both background, context, and outcomes of the study is provided to the institution (Walden University). Thus, a detailed report of the study method, assumptions, process,

comprehensive summary of all participants' responses, and accuracy confirmed the participant's submissions in the study.

Dependability

In qualitative research, dependability is established to ensure reliable and constant processes throughout the study while securing future replication (Nowell, et al. 2017). Face to face individual interview format, based on semi-structured open-ended questions, recorded on tapes enhanced the description and reference of participants' experiences through synchronous communication. All adjustments or alterations to the procedure as necessary are adequately audited and referenced. This is to give the steps of data collection clarity, enhance participant's reference, and evade falsification. Feedback is essential to strengthening the development of more robust data collection and better articulation of findings, which provide a gap for future research.

Summary

This research study used a qualitative phenomenological approach to explore the resident's experience in Abuja Municipal Area Council in Nigeria, West Africa, with Type II diabetes accessing diabetes information and care. The study employed individual face-to-face interviews for the data collection process and open-ended interview questions to determine the participants' experiences in accessing diabetes information and care. Manual coding and a modified Van Kaam approach were employed for data analysis, while the NVivo 12 software stored and manage data. These methods were used because they allowed the researcher to identify patterns and themes related to the

diversity of submissions in the studied participants' experience. A second coding was employed to establish reliability and validity.

The researcher used open-ended questions to probe participants to get detailed information on their responses, recorded with their permission. Triangulation was employed for data collection to build validity and reliability in the collected data from sampled subjects of the study in Area Council, namely, Garki, GUI, Gwagwa, Gwarimpa, Jiwa, Karshi, Kabusa, Karo, Nyanya, Orozo, Wuse. Both males and females between the ages of 18 and above. All subjects were debriefed, responses and submissions check and cross-checked to strengthen references and trustworthiness. Data were collected from eleven (11) reference participants as the study time permits. Findings from the study referenced the participants' comprehension of the challenges they encounter when accessing diabetes information and care in Abuja, Nigeria.

Chapter 4: Results

Introduction

The purpose of this study is to explore the experiences, barriers, and needs of diabetic patient residence in Abuja Municipal Area Council, Nigeria, as they relate to accessing information and care. Adults 18 years and above, diagnosed with Type II diabetes in the last year, and Community Health Workers were asked about their experiences concerning patient access to diabetes-related information and care. I collected data from 11 participants: five community health workers with diabetes patients, and six patients diagnosed with Type II diabetes. I used face-to-face qualitative interviews for the data collection and a modified version of the Van Kaam approach, as presented by Sullivan and Christi (2017), to analyze and interpret the phenomenological data and organize the emerging themes described in Chapter 3. The Van Kaam approach starts with identifying significant statements of lived experience extracted from interview transcripts and ends with a concentration of the essence of participant's affairs through a composite textural-structural description. Two research questions were posed:

RQ1: What are the experiences of residents of Abuja, Nigeria, who have been diagnosed with Type II diabetes, accessing information and care for their diabetes?

RQ2: What is the lived experience of community health workers in Abuja concerning patient's access to diabetes-related information and care?

This chapter provides a discussion of the following: the pilot study, setting, demographics, data collection, data analysis evidence of trustworthiness, results presented as themes, and summary.

Pilot Study

The pilot phase of the study was conducted in Wuse and Garki Municipal Area Council. After reviewing the group that responded as interested participants, two participants were selected who indicated an interest in the study through the advertisement. The selection was based on section criteria and procedures outlined in Chapter 3. The pilot study's purpose was to gain an in-depth understanding of the interview protocol and procedures and review for modifications, if any. The interview protocol and methods were used by conducting face-to-face interviews with two participants, one diabetes patient and one community health worker. The initial interview was conducted with diabetes patients to explore their experiences trying to access diabetes information and care and what they have done to overcome those challenges that interfere with their ability to access diabetes information and care.

The second interview was with a community health worker to explore her experience concerning patient's access to diabetes-related information and care, using study interview questions. The pilot study yielded essential background and context information on diabetes patient experiences accessing diabetes information and care and strategies to overcome challenges; it also showed no need to modify the interview process because the interview protocol was adequate for collecting in-depth data.

Therefore, no changes were needed. The data from the pilot study was not included and will not be discussed in this study.

Research Setting

The interviews were face-to-face, conducted in a private conference room of a community leader's office in Abuja Municipal Area Council. It is a convenient location for participants to access, free from distractions, and has electricity. The participants were provided with the consent form to sign before the interview commenced. Possible opportunities for observation of behaviors that may or may not help interpret data collected were observed when presented. No personal or organization influenced participants or their experience at the time of study that may affect the study results.

Demographics

Of those who contacted me, 11 individuals satisfied the inclusion criteria: five community health workers and six diabetes patients from the Abuja Municipal Area Council. The other 37 respondents were ineligible because they could not speak English or could not read and write. The demographic characteristics of participants and their background information as signifies with the abbreviations (P1, P2, P3, P4, P5, and P6) are presented in Table 1; the demographic characteristics of the respondents and background information of Community Health Workers as signifies with the abbreviations (CHW1, CHW2, CHW3, CHW4, and CHW5) are presented in Table 2.

Table 1

Demographic Characteristics of Patient Participants

Participants	Gender	Age	Occupation	Location
P1	Male	54 years	Public Servant	Jiwa
P2	Male	52 years	Civil Servant	Karish
P 3	Male	34 years	Businessman	Wuse Zone 2
P4	Male	51 years	Private Firm	Nyanya
P5	Female	43 years	Public Servant	City Center
P6	Male	54 years	Public Servant	Garki

Table 2

Demographic Characteristic of Community Health Workers

Participants	Gender	Years of Service	Level of Education	Location
CHW1	Female	28 years	Post Graduate Diploma Community Health Extension Work	Kabusa
CHW2	Male	12 years	Diploma in Community Health Extension Work	Gwagwa
CHW3	Male	18 years	Diploma Community Health Extension Work	Orozo
CHW4	Male	20 years	Post Graduate Diploma in Public Health Education and Promotion	Gwarinpa
CHW5	Female	18 years	Higher National Diploma in Community Health	Karu

The study participants lived with diabetes or work in diabetes care, thus had direct knowledge of the lived experiences regarding access to diabetes information and care. The geographic areas included in this study were City Centre, Garki, Gwagwa,

Gwarimpa, Jiwa, Karshi, Kabusa, Karu, Nyanya, Orozo, and Wuse 2 in Abuja Municipal Area Council. The prevalence of Type II diabetes in Abuja Municipal is estimated at 4.4%, higher than the national prevalence of 2.2 % (Orji et al., 2019). Hence, this review explores the experience of patients diagnosed with Type II diabetes and Community Health workers gives a better understanding of why the high prevalence Abuja Municipal Area Council.

Data Collection

The data collection process lasted for 2 weeks. The approval from Walden University Institutional Review Board research number 08-19-20-0670201 of August 19th, 2020, formed part of the data collection process to ensure human subjects' protection for this study. Interested potential participants and community health workers who contacted me using the flyers' information were identified and recorded. Eligible individuals were recruited using the approved recruitment procedure. Thirty-seven eligible respondents attended the information session, both diabetes patients and community health works. Eleven participants were selected, six diabetes patients and five community health workers from Abuja Municipal Area Council, for the study. The purpose of the study was explained to participants, and the benefits of the study were outlined. Participants were informed that signing and returning the consent form indicates their consent to participate in the study.

Participants were interviewed based on their willingness to participate in the study, being residents of Abuja Municipal Area Council, 18 years and above and speaks English. I conducted the face-to-face interview with eleven participants, six diabetes

patients, to explore patients' experiences trying to access diabetes information and care,

what they have done to overcome those challenges that interfere with their ability to

access diabetes information and care. And five community health workers to explore

their experience concerning patient's access to diabetes-related information and care. The

interview started from September 9, 2020, to September 11, 2020. The interview took

place at the conference room, office space provided by the community research partners

of Abuja Municipal Area Council, free from any disturbance or interruption. Two

participants were interviewed each day, and the interview lasted for 45minutes to one

hour. A professional voice recorder was used, with the participant's permission, the

interviews were recorded and saved in MP4 file format.

I explored the community health worker's experience concerning the patient's

access to diabetes-related information and care, the target population for this study. All

participants gave consent before the interview started, and data collection was completed

following the instrumentation procedure and ethical guidelines proposed in chapter 3. I

used a semi-structured interview format, open-ended questions with prompts to get in-

depth responses from participants. Saturation was reached after nine interviews, but I

went further to add two more. After each interview, I transcribed the participant's

interview using NVivov 12 software and emailed copies to verify accuracy. All

participants responded to the review without corrections and confirmed the accuracy of

the meaning of their responses during the interview. I remained responsible and

accountable to determine the eligibility of recruiting participants for the study, obtaining

their consent, confirming the accuracy of their responses to interview transcripts obtained

during data collection and analysis. Afterward, entire data collected, transcripts, and voice recordings for the study were securely locked with a password on my computer device in my house. Access is restricted, and data will be kept for five years as recommended by Walden University guidelines for handling research information as specified in Chapter 3. There was no variation during the data collection process from my original plan presented in Chapter 3. There was no unusual occurrence during the data collection process.

Data Analysis

The modified van Kaam method of phenomenological data analysis and interpretation presented in Chapter 3 of this study analyzes textural interview data collected on the lived experience of diabetic patients and community health workers in Nigeria about access to diabetes information care. The Moustakas' (1994) modified van Kaam's phenomenological analysis method was applied, using transcribed responses from participants, combined with hand-coding using NVivo 12 Pro software to increase validity. The NVivo 12 Pro software used also worked as a central source of data management and storage. The data analysis process consisted of two coding cycles and triangulation with a modified van Kaam data analysis method. The modified van Kaam approach, used as presented by Sullivan and Christi (2017), include:

1. Horizontalization, the identification of all data pertinent to experience from transcripts and group them into codes.

2. Reduce and eliminate expressions to determine necessary and unnecessary codes.

3. Matching excerpts and quotes and exploring the underlying meanings and group excerpts based on those underlying meanings. The groupings will form the themes that express the experience for each participant.

4. Identification of logical units of information and themes to compare for illustration or compatibility.

5. Using the validated codes, construct an individual textural description and categories of the reference participant's experiences, using the authenticated codes and verbatim examples from the transcriptions.

6. Using the personal textural story and inspirational difference, construct a description of the structure of the phenomenon.

7. Create an account based on the transcriptions and structure of the event that comprises the codes and categories, using the textural-structural description.

8. Finally, the development of the combined story of meanings and representative of all reference participants experience (Sullivan & Bhattacharya, 2017).

Hand Coding

The ability to understand data and process the whole image of the participant's response is advantageous for using hand-coding (Stuckey, 2015). Hand coding allows the researcher to engage directly with data while driving the data analysis process (Klenke, 2016). I started with the hand-coding of data to pick out highpoint details from the

interview transcripts. An intense process that involved multiple reading of transcripts in understanding participants' response to their experience trying to access diabetes information and care, what they have done to overcome those challenges that interfere with their ability to access diabetes information and care. This effort was also applied to discern Community Health Workers experience concerning the patient's access to diabetes-related information and care. The open coding method was used to understand the best raw data analysis (Blair, 2015). Using the participant's interview transcripts, I applied horizontalization to list and group significant responses, using the cut and paste process and listing participants' responses in a table to enable abstract and labeling. Identification of stationary components from participants' responses regarding their experiences accessing diabetes information and care and group all important statements reduces unnecessary comments (Moustakas, 1994).

I identified 333 exact substantial responses from participants and community health workers, expressing stationary components of the participant's experiences. The steps were a careful examination of participants' outstanding responses to help group the invariable details of participant's experiences into themes. I generated relevant information from participants and community health workers; therefore, the clustering of the participant's responses and Community Health Workers response involved an in-depth process used to identify and organize concepts and ideas realized into themes and sub-themes. The exact words and phrases of participants were included to get an in-depth understanding of their experience in accessing diabetes information and care, what they have done to overcome those challenges that interfere with their ability to access diabetes

information and care. And community health worker's experience concerning patient's access to diabetes-related information and care as detailed by Moustakas (1994). The last phase of the hand-coding process was to ensure all invariable components of the participant's experiences and themes before creating an individual textural image for each participant. I further developed the unique textual ideas by using creative differences and structural descriptions for each participant and combining all invariable components and themes. The explanations of participants experiences generated was merged based on their experiences, and the assessment was saved with result from coding using the software.

Coding with NVivo 12 Pro software

Information gathered from the interviews revealed characteristics and variables identified, developed coded as nodes, and categorized using NVivo 12. According to Adu (2016), it is essential to clean transcript data before using NVivo 12 software for data analysis to remove immaterial information, generate new identities for participants, and save the transcript before introducing it into the software. The first step in using NVivo 12 pro software in data analysis includes cleaning and rearranging data for upload to the software. The research question, interview question, and participants' and CHWs' responses were reviewed before saving the clean interview data for upload into NVivo 12 software. Next was introducing clean interview data into NVivo 12 software, and data was organized in two critical storage files in software: case node and case classification. I used the case node as an observation component to code relevant information regarding

each participant's response. The case classification allowed for the formation of classification names using numbers assigned to each participant.

I used the values coding method and applied codes to statements reflecting participants' experiences recorded in transcripts. After the first step, invariable components from participants' responses were clustered and thermalized to develop core themes of participant's experiences. In transit to the second data coding cycle, I used the step developed in the first cycle. The second cycle data coding uses a pattern coding method further to drop the data into smaller and more expressive units, identify patterns and relations, and label themes (Vaismoradi, et al. 2015). Pattern coding consists of coding procedures meant to create major themes, search for causes or clarification, examine association, and form theoretical constructs (Vaismoradi, Jones, Turunen & Snelgrove, 2015).

After sorting emergent patterns and labeling new themes, I established an account that described each emergent theme, and the next was the resulting data analysis phase. It consists of verifying data to certify adherence to the modified Van Kaam method of phenomenological data analysis as defined by Moustakas (1994). The principle cycle coding permitted the horizontalization, reduction, and elimination of varying components from participants' responses related to their experience. The following coding cycle allowed for clustering and thematization of passive elements of participants' responses regarding their experiences assessing diabetes information and care and Community Health Workers experience concerning patient's access to diabetes-related information and care. Emergent themes were developed to sort and synthesize data by categorizing

codes based on frequency, meaning, and relationship. A verification process was used to exclude any immaterial participant experience based on a lack of clear expression. It compared the description established by hand-coding with a narrative created by using software coding of participants' experiences as part of the analysis process.

Evidence of Trustworthiness

Evidence of trustworthiness is significant in qualitative research to demonstrate internal constancy used to develop accuracy in the research progression and delivery of results (Rose & Johnson, 2020). I established and operated a documentation strategy to pick out the procedure for participants selection (triangulation form), working with the chair and dissertation committee (peer debriefing), use a conventional research approach, and concrete description of the subject researched. The quality of research instruments was strengthened by consulting with faculty research committee members who are experts before commencing the data collection process. The exact interview questions with probing questions intended to gather in-depth responses from participants were used as a guide to achieving data saturation (Fusch and Ness, 2015). All personal opinions relating to the issue under study were suspended, I fine-tuned my sensitivity to the participant's mindset about the problems. Saturation of data was achieved after nine participants were interviewed as I identified duplication of information irrelevant to establish new categorizations.

To ratify the nonoccurrence of new information, additional two interviews were conducted. To stop contradictions arising from rising any misapprehension of interview questions, probing questions were used to get in-depth clarification of discrepancies

identified from participant's responses. The face-to-face interview was recorded using an audio recorder before transcribing the participant's responses. There was no follow up session with participants after the interview session; transcripts were sent to participants to verify accuracy. As Mouskakas (1994) described, the first step in the data collection process includes the bracketing method (epoche) to recall and disband any personal beliefs and upsurge an understanding of participants' feelings issue. Thus, I carefully placed reminiscent personal experiences before deliberately detaching mental conversations related to personal experiences and focusing on participants' responses.

Credibility

Transparency of the researcher on the research process and thorough processes ensure the quality of results to confirm qualitative studies' credibility. These processes involved using well-known research methods, information on participating research environments, participants sample, triangulation, certifying internal consistency of participant's responses, inconsistency case analysis, and peer debriefing (Nowell, Norris, White & Moules, 2017). Details of the primary process allowed the disentanglement of information using the modified Van Kamm approach for data analysis authenticating transparency. Additional steps were taken to facilitate credibility through measures to ensure participants were ready to share their experiences honestly and promptly during the interview process. This helped in the explanation of participant's responses with discrepancies.

Peer debriefing with dissertation committee members and peers was carried out during data collection and analysis. I finely tuned my decision-making process by

associating with research experts and peers to improve my thought vision and insight from the course of action, interpretation, and expansion of ideas (Green, 2015). Careful steps were taken to familiarize me with the data collection process, identify cases with inconsistencies that involved responses not explained by clarification, and check when data was analyzed. Validation in qualitative research is concluded when the researcher confirms the accuracy of interpretation (Birt, et al. 2016). I selected participants based on those who contacted me via email and sent invitations to participate in the study. Participants who met the criteria were selected, and all provided useful data.

Transferability

Reporting findings and results in qualitative studies relevant to a vast population is a challenge to researchers due to a minimal number of participants. FitzPatrick (2019) suggests a focus on providing contextual information on individualities connected to the research population and environment. In this study, I offered the information number of participants, data collection period, duration of the interview, and demography of interviewed participants. This information enables readers to identify limitations in the study and regulate the transfer of results.

Dependability

The use of reliable research practices that exhibit replicating research studies in a comparable situation determines the research study's dependability. Reliability is a quality assessment of the data collection process's combined process, data analysis, and theory generation (Nowell, Norris, White & Moules, 2017). This study face-to-face interview format with open-ended questions, a description of methodological constancies.

I provided a detailed description of research design components, data collection and analysis process, data storage, and management process to suggest future research acceptable information that permits replication.

Confirmability

Adequate steps about confirmability are essential to achieve certifiable results that can be validated by others. It also allows for data preservation, which has to be available on request for another analysis. This study developed a similarity of data collection procedures and analysis with the documentation process using reflective notes taken with the critical memo and NVivo 12 software to capture participants' interview responses, decision rules, and operation analysis. An audit stream was specifying research processes highlighting changes that arose during the research process.

Results

The following themes are supported by words, phrases, and identified text from different categories presented by participants. Though similar, each theme is unique and significant according to their responses from participants and Community Health Workers. From participating patients, a total of 84 comments and references were made, and four major themes and subthemes were identified that affect access to diabetes information and care in Nigeria; from the Community Health Workers' perspective, 50 comments and references were made, and six major themes and subthemes were identified as factors that impact patients' ability to access diabetes information and care in Nigeria. These themes are examples of social determinants of health, found to impact persons with Type II diabetes in Nigeria (Walker, et al. 2016).

Social determinants of health include the environment an individual was born and raised in, the conditions in which they were schooled, work, play, as well as psychosocial factors like social exclusion and social support, which have revealed a consistent association with quality of life, health outcomes, diabetes control, and self-care (Islam, 2019; Daniel, et al. 2018). The applied theoretical framework, the Social-Ecological Model (SEM), provided a framework for understanding the multiple factors at different levels that influence health outcomes and access diabetes information and care in Nigeria at the community level. And help improve understanding of patient's experiences at the community level (Caperon et al., 2019).

RQ1: What are the experiences of Abuja, Nigeria residents who have been diagnosed with type II diabetes accessing information and care for their diabetes?

Theme 1: High Cost of Managing the Disease

The high cost of managing the disease (for example, cost of food, cost of medication, cost of care, out of pocket expenses, cost of transportation, and sources of information) creates stress and affects access to information and care. The general view on the question is agreement among respondents on the accessibility of facility and healthcare personals for care when needed. However, the organization and quality of access to care differ in the respondent's viewpoints, based on funds' availability. Most participants on this topic concentrated on how the disease's expensive nature affects the quality of their care and access to information and care of their diabetic conditions regarding the routine of family needs and sustenance. Participants in these questions responded as follows:

Subtheme 1-1: Stress. The inability to access information and care, manage diabetes while meeting family needs can cause stress for diabetic patients. Participant's responses shed more light on the nature of stress experience:

Severally, I have had conditions that I am in pain dizziness and headache or sore-feet that I urge to see a doctor but when I consider the stress and my financial viability I just lay back on my bed and pray to mercy from God… (Participant 1).

Another participant in the study experiences stress differently. To this participant, P6, stress was caused by both poor financial position and contradicting family need. Stress among participants were also caused by structural inadequacy associated with accessing care. This was as P4 can recall, according to him "I can thus say I don't have much problem with regards to information only most times the length of stay to see the Doctors are unnecessary longer and I got stressed up or perspire a lot." These participants' responses were an important expression; showing commonality in the effects of stress on access to care shared by some participants. These exemplifications help provide context for the lived experiences of the subject studied. In sum, living with diabetes in this study, denotes stress associated with accessing care, waiting period and time in for consultation and treatments or the inability to get medication.

Subtheme 1-2: Cost of Food. The ability to eat food rich in healthy carbohydrates, fruits, and vegetables as recommended, is a challenge for diabetic patients. Exploring a healthy lifestyle and meeting the family meal plan impacts access to information and care. These participants drew attention to the cost of following the recommended diet plan:

My major experience with the condition relates to the expensive nature of treatment

and dieting required. I am constantly reminded at treatments or counseling sessions

that beans, 'plantain powder' *acha*, and vegetables should constitute my meal. These

are costly foodstuffs. Now, permit me to cite an example with the case of *acha*. It cost

N1000 ($2.50c) per *mudu* unless one goes to Niger State (outside Abuja) to buy at

N400 ($1) or less. As for *alkama* (wheat), another major dietary requirement is more

expensive than *acha*. So, even as one of my sons help me with buying these stuffs and

generally supporting the home front, in reality, the situations both for my family and

me are worse as neither of us got to feed adequately…. (Participant 2).

In a related submission on the significance of food in the management and coping with

diabetes among the subject of study another crucial experience relates to competing

family need that do creep in stressing care, the following excerpt captured this

implication:

Because my mum is also a patient living with the condition, so, my expenses for

treatment is for two people (myself and my mum). Then my immediate family needs,

the daily expenditure at home, schooling for children my wife needs, and all that. The

adjustment has not been easy, really… (Participant 6)

These responses shows that while participants desire to keep up with dieting regimes in

the course of treatment and living with their conditions, financing diet regularly stress

them out especially in a situation where competing family need or welfare existed.

Subtheme 1-3: Cost of Medication. The cost of medication for the care of

diabetes is another important point presented by respondents with regards to living and

coping with care. The study shows that the ability to afford the recommended medication depends on the availability of funds in relation to meeting other family needs. The study participants spoke about their experiences accessing recommended medication at a high cost as follows:

> Purchasing the diabetic medicine is excruciating both on my family member and me. The drugs that are more effective to me cost N5000, and the dosage last 2-3weeks. Hence, most times, everyone in the family got to support me on medication. This out of pocket expenses on medications has drained resources and general wellbeing of the family…. (Participant 1).

The next participant provided the socio-economic background to the costly natures of treatments as he deposits as follows:

> Living with the condition is costly here in Abuja. Naturally, foodstuff here is costly. Those dieting regimes one is put on are costlier. For example, the drugs I regularly use, Glucovance, cost N2000 ($5) above and lasted only a week. In four weeks, drugs alone take almost N8000 ($20) from me apart from other expenses. Then, taking care of the family, such as our rent payment, feeding, children's schooling, etc., stand on its own and compete with my medical need. Therefore, a bunch of challenges and the competition they have to confront my medical condition is troubling. It gave me a lot of sleepless times…. (Participant 4).

The collective opinion from these participants' lived experience reveals the potential issues associated with access to diabetes information and care in Nigeria.

Subtheme 1-4: Cost of Care. The quality of care an individual can afford also depends on the economic status of the individual. There are different categories of care, and affordability depends on what an individual can spend; the participants indicated their experience in this regard as follows:

The clinics are trying, but most of what they ask us to do is expensive. Generally, accessing health needs in Nigeria remains a daunting challenge, one may need to explore further treatment and information, but all will depend on how one is ready to spend, and the money is not there. To me, financing the care is the major problem… (Participant 1).

The second participant in the study (participant 2) express a more concerned view as he stated that, "To be sincere, there are occasions that I get just any forms of pain-relievers or sleeping pills from the local vendors to assist me especially when I have complications that disturb thoughts or sleep." Although one of the participants in the study felt he was not perturbed in accessing care due to finances or cost of care, a large majority of participants felt that was not the case. This showed in the excerpts as presented above which resonates with the views of the other participants in the study.

Subtheme 1-5: Out of Pocket Expenses. The inability of diabetes patients to pay out of pocket expense during doctors' visits affects access to information and care. In the following excerpts one of the participants demonstrated his experience:

I was variously referred to places and medical personals; some of these personals are in private medical labs in which high, exorbitant fees are charged because as it is claimed their tests and results are more secured and faster to get. Severally, I

turned down the test given to me as I couldn't afford to pay for them….

(Participant 2).

This view was commonly shared and expressed by several participants in the study therefore, the study takes this view to provide context of the implications of out of pocket expenses and its influence to impeding care and access to information. In the study out of pocket spending has been shown as a major issue in the lived experience of participants.

Subtheme 1-6: Cost of Transportation. When an individual cannot afford transportation to the doctor's visit, it affects his ability to access information and care. These participants highlighted challenges their encounter in this regard. For, Participant 4, "Transport to-and-from consultation and test are other ones. From here, locating Wuse, Gwagwalada, and Garki where general and Specialist Hospitals are located gulp a lot of money." On this issues Participant 5 submission was more instructive, his narration:

> I am married and have kids, and I have to support my husband in keeping the home front going smoothly. Living in Abuja here is expensive. Things are generally expensive. Transportation to work, and for my check-ups with the doctor, the diet. My kid's schooling, our household, my parents at home. All these need to be attended to despite my condition. It has not been easy adjusting, especially as the disease set in".... (Participant 5).

These responses reveal that the poor transportation system is a barrier that negatively impacts access to diabetes information and cares in the study area.

Subtheme1-7: Source of Information. The ability to source health information builds a strong foundation of knowledge for the individual and strategies to manage care. However, there different sources of accessing health information come with a price tag, and as the explained. In the experience of Participant 2 it was the "… inability to own a more sophisticated phone and operate such gadgets limited my capacity to access information as you highlighted that information are sourced from such gadgets." In developing countries and in the area studied multifunctional phones remains costlier commodity and often are viewed as luxuries. In additions they are costlier to maintain. The submission of Participant 3 contrasted the experiences of Participant 2. Participant 3 narrated thus:

> I used Facebook a lot, I even consult doctors online on diets and test machines advertised. Also, about diet and supplements, all these are online; you have to access them. I visit other sites on health matters too on the internet. Going online has made treatment easy. Sometimes the pharmacist advises me to check online for some newer drugs. I often go online and behold! You will see the stuff read it and purchase it if you can…. (Participant 3).

The understanding demonstrated by participant 3 was buttressed by Participant 5 as follows, "I visit sites online, and I see a lot of drugs and follow chats on managing the condition (diabetes). But some of those drugs online are costlier. They are hard to purchase at the individual level."

These submissions by the participants presents several underlying factors and constraints linked with their inability to access information and care online for their diabetic situations.

Theme 2: Lack of Health Insurance

Findings from this study regarding the use of health insurance by participants to access information and care reveal poor coverage in lower cadre workers, neglect, lack of specificity in other patients, even as participants insured belong to high cadre in public service (government work). The study area Abuja municipal and the city of Abuja as the Federal Capital Territory (apex administrative center) of Nigeria, provided the best geographical and political terrain in the nation to assess the availability and reliability of medical insurance for patients that suffered health conditions like diabetes. If the support for the care of diabetes is to improve structures such as adequate health insurance and the policy and financial backing, driving it must be comprehensive, and accessing health information easier. The views of participants in this study support these backgrounds as one of the participants explained:

> I learned that senior's colleagues in the council have this *pass* (National Health Insurance Scheme) to secure treatment in hospitals, and I do remember that many years ago, about ten years our data have been collected for similar documentations but, up-till-now for information forthcoming on the pass. Hence, I strive to cover my treatments…. (Participant 1).

While participant 1 explains lack of insurance, the administrative inadequacy to actualized such and the implication of such on his condition. Participants 5 experienced contrarily, the important of insurance. His recollection on having insurance was:

> I do, and I used it to access care. But the pitifulness is that there are limits to which it can be put to use, especially for medications. Sometimes you discovered that specific prescriptions are exempted in the coverage of the NHIS. On referral must times one has to pay out of pocket due to the delay in inter-health-care exchanges within the limits of the NHIS, transportations, and other things are not covered in the NHIS….. (Participant 5).

Equal access to healthcare services in a nation depends on the political and economic arrangement obtainable in the nation. This study has shown that financial status is critical in financing treatment in condition such as diabetes.

Theme 3: Lack of Diabetes Associations to Create Awareness

A functioning diabetes association creates awareness of diabetes and improves knowledge of the disease; however, this study's findings revealed that a functioning diabetes association is missing in the study area. Functioning diabetes associations provide community-based diabetes programs that employ components reliable with the care of diabetes. A community-based diabetes program makes a difference in reducing diabetes rates development, improving control of existing disease, and offering information on diabetes and care (Philis-Tsimikas & Gallo, 2015). When asked about their knowledge of the specific diabetes-focused organization, none of the participants were aware of the organization. On that note, participant's comments as follows:

I am not aware of any such body in existence. But I encountered many people

with this condition, men and women, especially in my workplace. In Nigeria,

everyone carries his burden unless you are relatively close to people, as in sharing

some family bonds, this coming together for a condition like this is hard.

However, it will do a lot of good…. (Participant 5).

Another participant stressed this point.His observation:

I do meet people with the type of my condition either in my friend's place or

where I work. So, I often thought why are the HIV/AIDs victims organized and

grouped, from which they tap and enjoy some support from the government.

Now, I think organizing diabetic people should be equally beneficial to all….

(Participant 6).

Theme 4: Poor Quality of Care

The need to ensure the quality of care for diabetes patients cannot be

overemphasized, and it has been recognized that gaps exist between best practices and

actual care. The ability to afford a good quality of care will depend on available health

facilities and diabetes specialists. These situations were shown in this study to affects

participants ability to access information and care.

Subtheme 4-1: Healthcare Facilities. Availability and accessibility to health

facilities can affect access to information and care. The participants report their

experience with health facilities in the following manner. According to Participant 3

"There are facilitates both public and private though I prefer the private because of the

unnecessary hiccups and delays in the public hospital like Garki General Hospital. They have good doctors, but the bureaucracy is the major problem." The view of the next participant is more instructive and critical. His words:

> The general hospital is there, but I seldom visit the hospital. I prefer self-medication using drugs such as *Glynase* and *DiaBeta*. I also use *Cod-Liver Oil* and *Cameron*. There are doctors and other specialists in the clinics and hospitals, but consultation sessions are often traumatizing. So, some people like me resort to self-medication and limited consultations…. (Participant 6).

Subtheme 4-2: Diabetes Specialist. Diabetes specialists are certainly the most capable health personal related to diabetes care due to their training; however, these healthcare personnel are in short supply in Nigeria. To this end the study was made to know by Participant 2 that, "I can only say that I do see doctors, but I can't know whether they are for diabetics or not. Those doctors I am opportune to consult listen to me and help as much as they can." Participant 2 response shows that he meets diabetes specialist when he was referred. According to him:

> That was when I was referred to Gwagwalada specialist hospital. I also learned that the guy teaches in the university and travels abroad for work so that only serious cases are piled and sent to him for observation and treatment. On that day, I met people from all over the city, waiting to see the specialist. (Participant 4).

On RQ1, four themes and nine sub-themes emerged from participants' respond to Research Question 1. There does not appear to be one factor that impacts a patient's ability to access diabetes information and care. Still, a combination of components

associates with the patient's lived experiences accessing diabetes information and care. The one major issue identified being financing care and meeting family needs. This study shows that economic factors are critical factors in people's ability to access care. Where disadvantaged group seek low-quality care, resolve to self-medication and are unduly affected by out of pocket medical expenses.

RQ2: What is the lived experience of community health workers in Abuja concerning patient's access to diabetes-related information and care?

In every aspect of public health specifically in the treatment of diabetes the role of community health workers remains both integral and crucial. In the area of diabetes patients access to health information and care which this study examines, the role and of importance of community health workers in helping diabetes patients to access information and care through structured education, ongoing support, and health system encouragement, was demonstrated. Community Health Worker's that participated in this study reported that most of their clients are low-income earners, Farmers, Petty traders, Okada riders, and Security men the most. Community health workers are well-positioned geographically in Abuja Municipal Council to deliver information and care related to diabetes information and care in Nigeria. The next responses from the Community Health Workers gave this study an extensive knowledge of patients' challenges in accessing diabetes information and care as studied.

Theme 5: Late Diagnosis of Disease

This theme reveals that lack of awareness and the patient's belief system contributes to the late diagnosis of diabetes in the study sample. The Community Health Workers who participated in this study highlighted various challenges in their opinion that impact diabetes patients' ability to access diabetes information and care. The following are some examples of the response from the Community Health Workers.

Subtheme 5-1: Poor Awareness of Diabetes. Poor awareness of diabetes has been revealed as a factor that affects access to diabetes information and care. Inadequate knowledge about symptoms and complications impact diabetes information and care. This fact was explained by community health workers 2 in the study as follows:

> There is generally a low level of awareness among people on diabetes here. The cultural inferences in the understanding of the health conditions and situations needed to be looked into, and people need proper guidance on how to get treatment of what may be disturbing them (health challenges they may face).

Corroborating this view further another community health worker in the study was more emphatic on the correlation between awareness and access to information as excerpted below:

> Information provided is dependent on what is known and who knows it and who access it. We got some tips here on the causes and management of these conditions. But how many people care to come for it. Maybe the informed

pregnant women may be those patients with pre-diabetic seeking to understand the changes in them. Maybe those patients susceptible to regular HBP who desire to understand the changes in them. I mean, most time, this information is out there, but who needs them, for what purpose? People showed up for consultations and treatments, the moment they are stabilized, we lost contact with them… (Community Health Worker 4).

These sample submissions of the Community Health Workers in the study revealed that the awareness of diabetes ailment and conditions in the area was low, low or lack of understanding about the need for regular checkups on conditions, as effective health-seeking behavior affects care. Given the increasing prevalence of Type II diabetes, it has become imperative to evaluate an individual's knowledge of diabetes.

Subtheme 5-2: Patient's Belief System. The patient belief system acts as a coping mechanism for diabetes patients and barriers to accessing information and care. These were common perceptions of community health workers related to patient's ability to access information and care. This understanding was mirrored by Community Health Worker 3 in the study that, "There are also cultural factors and actions such as mixing medication using traditional medicine on the same conditions. All these or a combination are fatal enough on the diabetic patients." This concern was reported more critically by Community Health Worker 4, thus; "If they come from communities that don't take modern medicine seriously, you find disinterest in information or right and proper sick roles. This socio-cultural and economic interface is important to accessing care and information on the disease condition, here." Cultural beliefs from the Community Health

Workers lived experience impact a patient's ability to access care. For individuals from low-income levels, dynamic cultural forces in health care cannot be considered without concern on how culture interconnects with poverty and justice issues, including access to information and care.

Subtheme 5-3: Complication Due to Advanced Disease. Diabetes, if not cared for, leads to complications related to the burden of emotional trauma and high healthcare expenses suffered by persons with the disease. These complications result from inadequate care and treatment of the condition; such an individual usually gets to an advanced stage of the disease before going to the hospital. Delayed care can lead to amputation of lower limbs and sometimes death. These community health workers indicated that:

> The worse cases are from the Farmers, Petty traders, drivers, Okada-riders, Security-men for agencies and organizations here and other people at the lower rung and strata of the society. Especially with those at the advanced stage when they can't afford the medications, you observe real deterioration. You pity them when they come for treatment. The weakness, the fatigue, exhaustion, the resigning to fate, the anguish, the agony all show. This is because the patient realized that their life depends on these drugs, medication, and diet and such is increasingly slipping away from them as their life as they are financially incapacitated (Community Health Worker 2).

Another health worker pointed out the declining state of some patients that led to death. He described his observation thus:

I have seen many patients who deteriorated to the point they died. The weakness

of the organs such as kidney and liver the urinary infections are the major causal

factors. This is observable with patient 60yaers above. But many of those patients

60years below dead through fake drugs or complications with wrong medications

or mixing modern and traditional medicine… (Community Health Worker 3).

It is clear that certain factors increase the risk of complications of diabetes; late

diagnosis of the disease is a significant factor of difficulty, as identified by Community

Health Workers in this study. Those most impacted are the low-income earners in

society.

Subtheme 5-4: Patients' Death from Diabetes. Individuals with diabetes are at

risk of death from complications of diabetes such as heart attack, acute metabolic events,

and amputations due to untreated ulcers. These Community health workers reported their

experience as follows.

Out of experience, there are many I can recollect both from here and other

locations I have worked. As I had informed you, I lost my dad, and his brother

(my uncle) to the condition, my dad's case has to do with age and his unreceptive

to drugs most time … (Community Health Worker 3).

The recollection of Community Health Worker 3 indicated that he loses a close relative to

the lived experiences of the victim relating to stoicism towards drugs taking to treat

diabetes. The next participant was more in-depth in his examination and recollections in

this direction, his words:

The experience has been traumatic and painful, on the understanding that diabetes is killing people silently, while it can be controlled and tamed with the right information and healthy habit. The people in the locality here, mostly farmers and low-income earners whose stable foods are often starchy foodstuffs like tubes: yam, cocoyam, cassava, rice, etc., got caught in the web of this condition due to wrong dieting. Thus, we found the prevalence and mismanagement of the conditions due to increasing poverty… (Community Health Worker4).

Late diagnosis of disease leads to complications due to advanced disease, and the death was identified by Community Health Worker's. Having poor self-perception, low education, and income level are factors associated with increased prevalence and mortality of diabetes in Nigeria. These factors are related to late diagnosis of diabetes and impact the vulnerable in society according to Community Health Workers.

Theme 6: Shortage of Diabetes Specialists

From the patients' perspective, each time they go to a hospital or clinic, they are attended to by doctors and nurses; however, they are unsure if those doctors are diabetes specialists. Findings from this study revealed that the study area lack diabetes specialist, while the few available are in two hospitals, Garki General Hospital and Gwagwalada Specialist in Abuja and patients are referred there only when they develop complications. Community health workers responses regarding diabetes specialists:

Actually, there is no diabetic specialist here, and we often referred to acute cases, i.e., those patients at critical stages to Garki General Hospital or the Specialist in Gwagwalada. On that note, you could see that we require specialists on diabetes

in the facility, as your work relates to that. But the standing order often uses in

medical practice here because most doctors practice general medicine and

therefore can adequately attend to diabetic patients. Nevertheless, to me, this

health condition diabetes is on the rise here. Many people reported or showed sign

which I can link to the nature of the diets and meals taken here, which are mostly

starchy like, rice, bread, yam, gari (cassava), etc. as a plan, I think it will be in

order if diabetic specialists are sourced and attached to health facilities in the city

(Community Health Worker 1).

The next Community Health Worker in the study give the structural and practice reasons

obtainable in the study area that breed the issue of dearth of diabetes specialists

experienced. His report:

If you ask in terms of the Family Health Physicians, they are mostly few in the

centers here. We make do with general doctors, which is often the practice.

Occasionally, specialists do showed-up in centers to give refreshment training and

pep-talks about development regarding health conditions, including diabetes and

its management. Generally, lack of specialists for various health care needs has

been the bane of the system here….. (Community Health Worker 3).

Lack of diabetes specialists is a contributing factor to mortality and morbidity and

has continued to increase due to a decline in dietary factors. However, the organization of

care for diabetes is coordinated poorly. The lack of diabetes specialists in Nigeria's

capital city is alarming, and there is a need for a more significant commitment to health

care service by the government.

Theme 7: Literacy Level

Patient-level education affects their ability to source diabetes information and care, belief systems, inability to move from one lab to another for blood sugar tests, and patients abandoning diabetes treatment. Below are Community Health Worker's, responses are as follows:

Subtheme 7-1: Patient-Level of Education. Numerous factors are associated with a patient's level of education and ability to access information and care. Level of education determines the quality of care, decrease complication, and dead of diabetic patients. These community health workers responded as follows on patient-level of education and access to information and care. According to community health worker 3 "The level of education and awareness suggests that most informed patients have a better worldview. They take instructions seriously and tend to manage better." This view was supported by another participant in the study, indicating factors that enhance access to information and care, he counted thus:

> The level of their education and tolerance for treatment. The nature of the community they come from. If they come from a community that trusts in medicine, you see them respect instructions and directive. If they come from communities that don't take modern medicine seriously, you find them disinterested in information or right and proper sick roles. This socio-cultural and economic interface is important to accessing care and information on the disease condition, here…. (Community Health Worker 4).

From the perspective of Community Health Worker,' an individual's level of education plays a vital role in their knowledge and attitude toward their care of Type diabetes.

Theme 8: Financial Constraint

Financial constraint affects the vulnerable in the society mostly, (example, low-income earners, cost of medication, cost of food, out of pocket expenses, fake drugs and conflicts between patients' needs and family needs), affects access to information and care and farmers, petty trader's, Okada riders, security men, are susceptible to these factors.

Subtheme 8-1: Low Income. Individuals from low-income backgrounds face additional challenges accessing information and care; these challenges varied from inconsistence access health care, inability to afford the recommended diet, etc. participant narrate their experiences:

> This applies especially to patients from lower social status in the community. The worse cases are diabetic patients in the categories of Farmers, Petty traders, drivers, Okada-riders, Security-men for agencies and organizations here and other people at the lower rung and strata of the society…. (Community Health Worker2).

In group mentioned above the issue of financial pressure cannot be overemphasized, according to finding in this study. All the community health worker saw the fund as a significant issue related to a patient's ability to access information and care.

Subtheme 8-2: Cost of Medication. The inability to afford medication due to cost is another challenge for low-income individual's participants in the study as conflicting priorities marred care. The study shows that while the treatments are available, they are expensive; for many. Hence, the alternative was fake drugs, self-medication, and traditional remedy. From the experience of these community health workers, they have these to report:

> I have seen situations where the patient keeps prescriptions at home till, they can raise money for their purchase, while still struggling with pains. Other patients selectively purchase prescriptions according to their capacity or what money they can raise. What does that say to you? To me, that why most of the treatment is not effective or the issue of raising complications and deteriorations with the consequences that usually followed…. (Community Health Worker1).

Another, participants gave vivid accounts to buttress the position of community health worker 1, he posited:

> On several occasions, you could meet a patient on the verge of tears in the pharmacies here. If you inquire what the problem, he showed you the prescription list and told you he could not afford them. This is a daily experience here, the inability to foot their bills here is widespread, and it is not limited to diabetes. But the diabetic patients are a class of their own, considering the expenses and unique treatment (dietary regimes). Often the results are unpalatable. This is the condition here…. (Community Health Worker 3).

The community health workers were explicitly clear in this study that the patient's inability to access medication was a usual occurrence for diabetic patients. Some patients resort to self-medication, which leads to complications and death.

Subtheme 8-3: Cost of Food. The inability to afford the recommended diet due to its expensive nature is a challenge in access to diabetes care. Participants were observed to faced double challenges of providing for family (meals) at the same times taking care of their recommended meals, mostly fruits and vegetables. On this complex implications regading access to information and care, participants indicated their experiences as follows:

> The status of the patient in the family creates a lot of problems. For example, in the ideal family of diabetic patients, meals are supposed to be prepared separately with the patient meals as specified based on instructions like 2/3 vegetables and a lot of fruits. Most times, this ideal arrangement is hard to obtain in families with patents. This is generally due to the high cost of living in the city. Nature of the family feeding arrangement, in most families it the same pot for everyone. Only that, little consideration is often provided (to separate meals) to benefit the sick (diabetes patient) at the initial treatment stage. At later stages of treatment, you may note real family tensions and strains regarding dieting for the patient. This is often the critical stage where patients required this nutrition as their organs began weakening. Living with the condition is real problematic…. (Community Health Worker 2).

Community Health Workers 4 was more specific and lucid in his dispositions. He views:

> The observation is mixed here because of the social and economic categorization
>
> that will come in identifying the patients. The patients can be lumped together.
>
> Some of the patient coping strategy with financing care (medication and dieting)
>
> is rich and super. For others, patients, particularly those who irked living here,
>
> either as construction workers, petty traders, watchmen, security men, the Fulanis,
>
> and other downtrodden unfortunate to be afflicted with the condition, the living
>
> experience is disturbing and often pitiful….(Community Health Worker 4).

The community health workers were emphatic about the stressful nature of providing the recommended diet for diabetic patients and meeting family members' dietary needs.

Subtheme 8-4: Out of Pocket Expenses. The inability to pay out-of-pocket medical expenses for diabetic patients is overwhelming. It impacts patients' ability to access care due to the high economic burden, makes them report late to hospitals with complications, and their hospital visits are not frequent. From the community health workers experience, the following was reported:

> First is the trauma of discovery. Then are the consultations' challenges, which end
>
> with a referral to various specialists and what that may take (finance). The crisis
>
> of adjustment starts with spending on diet and medications. The stability period is
>
> best obtained if the patient's finance and family support are sound, etc. All these
>
> phases and more take a toll on the patient's biology and psychology, from what I
>
> have experienced with such patient so far… (Community Health Workers 1).

As for community health workers 4 he listed his observations thus: "Nonetheless, you find the major factors as out of pocket spending on management diabetes, you find the use of unauthorized drugs or mixing traditional and modern medication." Multiple responses by Community Health Worker's in this study have revealed the impact of financial constrain on diabetic patients. The inability to care for their situation and alternative action of self-medication.

Subtheme 8-5: Fake Drugs. The inability of diabetes patients to afford the expensive medication left them feeling they had no other option than to go for substandard medicines. The use of fake drugs leads to complications and, eventually, death. On these note community health workers reported thus:

The issue of fake drugs is wide here in Nigeria. There are fake drugs in town, and they do find their way to clinics due to lack or limited technologies to dictate them. Desperate patients may get up in the web of this inhuman scheme of faking drugs and the healthcare system's inadequacies to dictate them. The fact is that diabetic drugs are genuinely expensive, and most of these fake drug manufacturers must have done their research and found out this lapse, and therefore strive to cash in on the gullibility of these patients… (Community Health Worker 1).

Responding to this query community health workers 2 was more illustrative his submission:

"The problem with fake drugs is that they exist out there, and a desperate patient could try them. As healthcare providers, we are handicapped as we couldn't

control what the patient does outside our sight here in the clinic. The use of fake

drugs is fatalistic. But patients, as I alluded to, could be pushed to try them out of

desperation as living with diabetes remains a costly experience here due to the

limited nature of support available for the patient….(Community Health Workers

2).

The Community Health Workers revealed that diabetic medications are

expensive, and desperate patients who cannot afford them will buy fake drugs.

Subtheme 8-6: Patient and Family needs Conflict. The economic burden

associated with caring for diabetes and family need has been reported to be conflicting.

These conflicts vary with individual participant in the study families, large caused by the

expensive nature of living in Abuja, the area of study. The insights of the community

health workers in this regard is as follows:

For instance, the patient medications and diet against his family needs and the

normal daily-living-challenges in Nigeria. You know, the rising cost of living, the

inflation on foodstuff which is mostly produced locally. So, you find the patient

lamenting the cost of both treatment and dieting specifically. Drugs are often for

the stability of the condition, but diet is the key to treatment and recovery. Dieting

is the major area both the patients and their families often failed due to conditions

beyond their making. For example, the contributing factors include meager jobs,

poor salaries, delayed salaries, unemployment, pensioners, retrenchments, etc.;

you come in contact with all these factors as they affect patient lived experiences

and as they marred homes and complicated treatment and

recovery….(Community Health Worker 3).

In this direction community health worker 5 was more explicit, his observation is thus:

To be candid, most of the patients are not financially buoyant except the few with

high paying jobs. You find the rank of these fewer privileged workers in middle

and lower workers, farmers and domestic/home workers, and importantly their

wives agonized a lot as the whole family is put to stress due to the condition's

financial challenges (diabetics). At the beginning of most treatment, the family

provides support and cooperation as the situation progresses. The family goodwill

becomes exhausted, and most times, patients are left to deteriorate. It is important

to underscore the patient's lack of financial capacity to get treatment or procure

their medications on time or due to worsened situations or even outright

mortalities. Thus, you observe that such families are caught between the devil and

the deep blue sea, owing to having a member with people with diabetes….

(Community Health Worker 5).

Healthcare and access to care in Nigeria is constrained by several social,

economic and political factors. This reflects in Nigerians' health-seeking behavior, with

the lower-class and the upper-class groups, following several options to attain care. Often

as findings in this study corroborates the lower class resorts to unorthodox medicine as

their primary source of medical assistance due to limited availability of other forms of

healthcare services, lack of money to pay out of pocket expenses, or lack of health

insurance.

Theme 9: Lack of Patient Follow up visit/Transportation

The overwhelming nature of diabetes affects the patient's ability to access care, while access to transportation and the inability to afford transport fare is another factor. These community health workers gave insight into their experience as how this impact patient's inability to access diabetic information and care.

Subtheme 9-1: Patients Abandon Follow-up: Patients face different challenges that hinders them from following-up doctor's visit after initial visit. Some lack access to available facilities, resources or unaware of consequences of disease complications. The view of community health worker 1 shows poor understanding of the need for checkups and follow ups with treatment and care as may be required in patients, in narrating his experiences it was excerpted as follows:

> These are some of the key factors that inhibit patient access to information. Specifically, the patient detests follow-ups. When we advise the patient to come for counseling sessions, especially the male, they feel that such sessions are for women. To them, they are sick treated, and that all. Unless they suffer another round or bout of attack. Then we see them again for advice or to get information…… (Community Health Workers 1).

Community health workers 4 consulted in the study reaffirmed the stand point of community health workers 1 as follows:

> People showed up for consultations and treatments, the moment they are stabilized, the moment we lost contact with them. To me, diabetes is a serious condition which supposed to be cared for with all seriousness. However, you find

lapses both on the patients and caregivers denying or obscuring information flow. In the end, the patient is the victim… (Community Health Worker 4).

The reluctance to follow up with diabetes treatment is a significant factor stressed by the community health workers in the study. The ability to follow-up with treatment comes with the knowledge of the consequences of diabetes.

Subtheme 9-2: Transportation. Poor transportation system or ability to afford transportation fare to and from hospital visits also impacts diabetes information and care access. These community health workers reported their experiences, said community health workers 1, "The factors are transportation, time, and level of literacy, work schedule, and family support. These are some of the key factors that inhibit patient access to information." Community Health Workers 5 was more specific as he stated that, "… here in the city transportation costs a lot. And when a patient is instructed to move between diagnosis, test, and treatment, they tend to get exhausted and abandon visitations midway." Findings from this study revealed that issues that impact access to diabetes in Nigeria are multifactorial. Patient's nonadherence to care is an essential factor in this study. Nigerians are opposed to accepting that a health situation is easily managed by self-medication, traditional medicine, and God's belief for a miracle.

Summary

In summary, the developed themes and sub-themes associated with each of the research questions provided significant insight (from lived experiences of community health workers as they support diabetes participant in the area studies) into unanswered questions and gaps of information related to accessing diabetes information and cares. As

it applied to Research Question 1, (what are the participants experiences with type II diabetes accessing information and care for their diabetes), the participant's responses revealed four themes. Theme 1 showed that the high cost of managing the disease (cost of food, cost of medication, cost of care, out of pocket expenses, cost of transportation, and sources of information) creates stress and affects access to information and care. Social and financial risk affects the poor and vulnerable populations in the society, as lack of health insurance is a significant component in Theme 2 that impacts the goal of ensuring access to health information and care without suffering financial hardship. Theme 3 revealed a lack of knowledge about diabetes associations that create awareness for patients. Theme 4 refers to the mixed quality of care available to participants including long wait times to see a doctor in public hospitals, and diabetes specialist is available only in specialist hospitals and patients referred only when they have developed complications, all of which is so frustrating that some patents resort to self-medication.

Regarding Research Question 2, the community health workers' revealed factors that impact a patient's ability to access information and care, which included four Themes that highlighted late diagnosis of the disease, poor awareness of the disease and impact of patient's belief system in health behavior, and patients developing complications due to advanced status of disease and patients' death from diabetes. Theme 6 the lack of diabetes specialist was also reported as a factor that affects the patient's ability to source information and care. Specialists are available at specialist hospitals, and patients are referred to them only when they develop complications.

Theme 7 literacy level of patients offers them the ability to source diabetes information and care; however, low patient education levels consequently limit their ability to source information and care. Some resort to self-medication and traditional medicine to treat diabetes. Finally, theme eight financial constraints linked with the low-income level of diabetes patients, high cost of diabetes medication, high cost of diabetes food, ability to pay out of pocket medical expenses, influence the use of fake and substandard drugs as diabetes patients are faced with the conflict between their needs and meeting family needs. Chapter 5 discusses the interpretation of findings, limitations of the study, conclusions, and recommendations for further research.

Chapter 5: Discussions, Conclusions and Recommendations

Introduction

The purpose of this study was to explore the experiences, barriers, and needs of residents of diabetes patients in Abuja Municipal Area Council, Nigeria, as it relates to accessing diabetes information and care. Furthermore, the study identifies the social factors that hinder or support patients' ability or inability to access diabetes information and care. The study focused on (a) patients' experiences trying to access diabetes information and care, (b) what patients have done to overcome those challenges that interfere with their ability to access diabetes information and care, and (c) community health workers' experiences concerning patients' access to diabetes-related information and care. Understanding the different elements of accessing diabetes information and care could provide a new approach to dealing with challenges specific to accessing diabetes information and care in Nigeria. This study was designed to shed light on this phenomenon and made recommendations for further studies. As identified in Chapter 1, there is a need for more research among the diabetes population to understand their experiences, particularly as it relates to diabetes care (Biernatzki et al., 2018; Grobosch et al., 2017).

The themes and subthemes derived from the interview transcripts are listed in Table 3 below. These study findings are significant or vital in developing awareness and bringing about lived experiences of diabetes patients accessing information and care. The themes and subthemes associated with each research question provide substantial insights into the knowledge gaps related to patients' experiences accessing diabetes information

and care. Data derived from the interview discovered barriers in accessing diabetes information and care, which were further analyzed and coded as nodes and categorized. These characteristics were also reviewed to avoid identifying irrelevant content. These categories were also analyzed and added to themes based on their meaning and relevance. Afterward, the themes were developed to explain other associations that could define the problems associated with accessing diabetes information and care. Even though each of the themes could be regarded independently, they coincided and share several characteristics related to accessing diabetes information and care. Themes (a shown below in table 3) were developed in association with the research questions.

Table 3

Research Questions and Themes

Research Question	Themes
Research Question 1: What is the experience of Abuja, Nigeria residents who have been diagnosed with type II diabetes accessing information and care for their diabetes?	**Theme 1:** High Cost of Managing the Disease. **Sub-theme 1-2:** Stress **Sub-theme 1-3:** Cost of Medication. **Sub-theme 1-4:** Cost of Care **Sub-theme 1-5:** Out of Pocket Expenses **Sub-theme 1-6:** Transportation **Sub-theme 1-7:** Source of Information **Theme 2:** Lack of Health Insurance. **Theme 3:** Lack of Diabetes Associations to Create Awareness. **Theme 4:** Poor Quality of Care. **Sub-theme 4-1:** Health Facilities. **Sub-theme 4-2:** Diabetes Specialists
Research Question 2: What is the lived experience of community health workers in Abuja related to patient's access to diabetes-related information and care?	**Theme 5:** Late Diagnosis of Disease **Sub-theme 5-1:** Poor Awareness of Diabetes **Sub-theme 5-2:** Patient's Belief System **Sub-theme 5-3:** Complication Due to Advance Disease **Sub-theme 5-4:** Patient death from diabetes. **Theme 6:** Shortage of Diabetes Specialist. **Theme 7:** Literacy level. **Sub-theme 7-1:** Patients Level of Education. **Theme 8:** Financial Constraints: **Sub-theme 8-1:** Low Income **Sub-theme 8-2:** Cost Medication **Sub-theme 8-3:** Cost of Food. **Sub-theme 8-4:** Out of Pocket Expenses. **Sub-theme 8-5:** Fake drugs. **Sub-theme 8-6:** Patient and Family needs Conflicts. **Theme 9:** Lack of Patient Follow up/Transportation **Sub-theme 9-1:** Patients Abandon Follow-up **Sub-theme 9-2:** Transportation.

Interpretation of the Findings

This section discusses the interpretation of findings presented in Chapter 4 related to sample studied. This study's findings indicate meaningful connections among the characteristics identified by participants and community health workers on access to diabetes information and care, supporting the principles in the foundation of the SEM used. The SEM for this study was developed to demonstrate how the community level influences information within boundaries, institutions, organizations, and built environment of diabetic patients in Abuja Municipal Area Council. The objective is to further develop an ecological model to explore how the community influences individuals with Type II diabetes accessing information and care. Social determinates factors such as poverty and level of education also impact access to diabetes information and care. I interpreted the findings of this study using the theme clusters identified in Chapter 4. I discuss the results under the following headings.

Emerging Themes from Diabetes Patients

The following are concepts identified as challenges and barriers that affect

diabetes information and care access from the patient's perspective**.** As specified in

Chapter 2, the reason for using the SEM is because the SEM is useful to understand the

conceptualization of individual interaction with society and how the culture influences

them at different levels, this usage rimmed with similar application in Glanz et al. (2016).

And, like Walker et al. (2016) found out social determinants of health status have been

impact health outcomes of persons with Type II diabetes. In relation the study by Islam,

2019 and Daniel, et al.2018, proved that psychosocial factors like social exclusion and

social support have been association with quality of life, health outcomes, diabetes

control, and self-care. These facts were identified and proved as reality participants' and

community health workers' perspectives and interpretations in this study. The interpreted

findings are provided in the following section relating to designed themes derived in the

study. The generated results from Chapter 4 provided the information that supported the

interpretative findings, which coincided with and helped existing literature regarding

access to diabetes information and care in Nigeria.

Diabetes patients and Community Health Workers who participated in this study

reported many challenges accessing diabetes information and care. A significant factor

identified mainly throughout the study was the high cost of an acre as a barrier to

assessing information and care. This information is linked to themes of participants and

themes of Community Health Worker's emerging themes. SEM used supports this

evidence based on the integrated action at the community levels that influence patients

with Type II diabetes accessing information and care. Social and structural factors have been recognized as determinants of Type II diabetes (Asakitipi, 2018).

Theme 1: High Cost of Managing the Disease

Participants confirmed that the high cost of managing the disease, stress, cost of food, cost of medication, and cost of care and out of pocket expenses affects their ability to access information and care. The cost of care hampers participant's access to care due to the inability to pay out of pocket expenses, thereby increasing the morbidity and mortality rate as revealed in the study. Most participants on this topic concentrated on how the disease's expensive nature affects their care quality and access to information. This view (provided by participants and community health workers) coincides with the study of Okoronkwo et al. (2015), which explored the economic cost of people living with Type 11 diabetes in Nigeria. The study found that the nation's socio-economic realities, such as inflation affecting foodstuffs and the general national poverty rate, have negatively impacted those living with diabetes. The cost of food was another factor that was highlighted by respondents in the study.

Seligman, et al. (2019) have described how the high cost of recommended diabetes diet has crippled households and disrupts their living standards. There work showed that inability of diabetes patients to afford the recommended diet may result in hyperglycemia. Polonsky and Henry (2016) in their study demonstrated that, inability to afford medication seriously affects access to care, as the inefficient use of medicating is associated with glycemic control and possible complication, and an increase in mortality rate. While, Healthy People (2020) and (2017) maintained that the ability to care for a

health situation is essential for overall wellbeing to increase life expectancy and life expectancy. In this study, it is found that participants experience many barriers that hinder their ability to access the care required for their diabetic situation. A significant factor in this regard remains out-of-pocket expenses for care. The patient's lived reality is dominated by the awareness of the consequences of out-of- pocket-spending concerning the expensive nature of the drugs for treatment, which is strenuous. Calculated on a weekly or monthly basis, out-of- pocket-spending by participants has indicated the cost of medications as an expensive and significant hindrance for access to care. The most accessible support in this regard is the family network, which is limited in capacity by the absence of contradictory needs, financial capability, and backgrounds. This disadvantaged families seek low-quality care, resolve to self-medication due to the inability to make out of pocket medical expenses.

Diabetic patients interviewed are challenged by the ailment and self-motivated alike, with varying degrees of success and consequences. Owing to challenges, subjects deposit various remedied adoptions such as self-medication and not following up on medical center visits. 'Self-medication' is illegal and dangerous to the patient (participant) health. By extension to patients in the participant's milieu may think and act as the participant on this point. Even though Nigeria is a developing country, there is no expansion of insurance coverage, as citizens are faced with delays when seeking to attain the country's universal health coverage. This is as Okpani and Abimbola (2015) also deposited in their studies. This work finds that some participants used social media to source information on medication and dietary regimens. The majority of participants also

said that, though they source information online, the medicines are expensive, out of reach for many participants. Studies have shown that patients use social media to source information for their health needs. The study by Petrovski and Zivkovic (2017) submitted that social media as a tool could improve glucose control levels. The present study relates to the findings of Petrovski and Zivkovic (2017) and confirms social media use to source health information and care. The Community Health Workers in this study indicated that proper dietary regimes in patients are vital to managing and recovering from the health condition. Conversely, participants' findings show that their nutritional needs are constrained by large family size with multiple family needs and care costs.

Theme 2: Lack of Health Insurance

The role of functional Health Insurance was highlighted by participants as affecting access to information and care. A section of the participants uses available insurance. It is demonstrated to be useful and supportive of easing living with diabetes. Therefore, some participants lack healthcare insurance coverage and are not protected by the usefulness of the scheme. This finding concurs with the study of Okpani and Abimbola (2015). A study by Amu, et al. (2018) examined variations in health insurance coverage in four African countries: Ghana, Kenya, Nigeria, and Tanzania. The study revealed differences in health insurance coverage in the four countries, with Ghana recording its citizens' highest insurance coverage. The study showed that Kenya, Tanzania, and Nigeria might not attain universal health coverage with each country's health situation. In this study participants deposited a collective position, confirming the non-effective functioning of Nigeria's health insurance scheme. This finding agrees with

the report of Adeniji (2017) that in Nigeria, the poor and unemployed cannot access NHIS since they do not have adequate information, cannot afford the user fees, and also lack access to transportation, gender disparity, and poor education in accessing health care.

Theme 3: Lack of Diabetes Associations to Create Awareness

The study shows that the most elaborate form of support could have been participants (patients) membership and coordination in associations relating to their ailment, diabetes. Both participants in the study (patients and Community Health Workers) reported absences of such groups/bodies (associations) despite the glaring strategic importance it can serve for care and support in patients' lived experiences. For instance, associations are highlighted to have the capacity to empower for both policy and program advocacy, for pooling of resources to source and acquire, acquire dietary and drugs on subsidies and loans. Diabetes associations are conspicuously non-existence in the study area. The study area: Abuja municipal is an expensive city. Patients with the living condition of diabetes and the excruciating healthcare needs will do well with information through associations as registered bodies and members, which could engage states, Non-Governmental Organizations (NGOs), civil societies, medical professionals, and drug manufacturers towards succor and gaining supports.

Theme 4: Poor Quality of Care

The value of care is associated with the quality of the health care system in a nation and the regularity of economic development. In this study, the ability to seek information and care by diabetes individuals are found to be low among low-income

earners. Findings indicate participants receiving limited or inadequate care, in the long run, resulting in complications necessitating referrals to a specialist, as both participants and community health workers revealed. Generally, the shortage of specialists in general or government hospitals was reported, while the wait time is immense, making patients developed the habit of avoiding care or missing on referral. In place of this sick role, patients resort to self-medication and traditional medicine to treat diabetes. Patients admitted that health care facilities are available but expensive. This finding corresponds with the study by Asakitipi (2018), which indicates that Nigeria is divided into three groups; the wealthy elites, represented by politicians and prominent business people, the middle class, which comprises of the working-class group, and the lower class consisting of disadvantaged groups, mostly rural dwellers. The social structure of Nigerians is complex and has influenced the health-seeking behavior of Nigerians. Additionally, Asakitipi (2018) shows that in Nigeria, most low-income earners access the general public hospital, pharmacy shops, drug sellers, and traditional healers. This position was illustrated in the work of Adeloye (2017) who showed that, often, the low-class group available healthcare facilities are not accessible. The numerous private hospitals accessible are not regulated and are susceptible to fake and substandard drugs that caused an unprecedented high mortality rate.

Emerging Themes from Community Health Workers

Theme 5: Late Diagnosis of Disease

The findings revealed that most community health workers believed that late diagnosis of diabetes is associated with insufficient awareness of the disease's prevalence,

triggers, and poor understanding of the disease's manifestation, signs, and disease symptoms. Our finding indicated that diabetes in patients was often discovered by chance and at an advanced stage when diagnosed with other health conditions such as malaria were made. The results indicted the roles of belief system and practices among participants, lack of attention and attitude of government about diabetes in the area studied as prime factors in the growth of diabetes as a health condition. That the condition is generally misunderstood, despite the ubiquitous causes and triggers importantly widespread consumption of starchy diet as the staple food. Hence the rising phenomena of late discovered of the condition in patients through per chance examination or diagnoses for other health conditions relating to GMD, HBP, obesity, work stress, lack of exercise, and old age. This finding supports similar studies establishing poor awareness of the causes and manifestation of the condition studied, such as by Abolghasemi and Sedaghat (2015) and Chinenye and young (2016).

Theme 6: Shortage of diabetes specialists

The findings revealed that there are available clinics and hospitals, but the doctors are not a diabetic specialist. Patients are referred to a specialist at Garki General Hospital or Gwagwalada specialist hospital after patients have developed complications. Some patients end up not going due to distance and wait time, affecting access to information and care. Though there is the availability of medical personals and general healthcare providers, the study shows that diabetic specialists are rare in the context of specificity. However, the general medical practice obtainable is 'General Medicine.' The implication is that diabetic patients' care and needs follow standard medicinal rules in

public and facilities as inferred by the participants. It is assumed that such conditions in the lack of specialists, especially in Nigeria's public health care facilities, affect the rate of referral as indicated by all sample. Referral in the context of the study area (Abuja municipal) has been demonstrated to have its implications. For instance, the need for logistics like information about specialists and their availability, transportations modern technologies, and diabetic space care competition with other patients suffering from other forms of ailments and disease in the limited healthcare milieu.

Regarding participants using public healthcare to treat and manage their diabetic conditions, there are reported administrative inadequacies bordering excessive bureaucracy and lack of supportive infrastructures such as sitting arrangements and technologies. Participant (patients) relates to the quality of care and professionalization of caregivers even though the rate remains irregular, uncertain, and challenging to patients. While Community Health Workers insisted on their roles and those of other healthcare providers as adequate even though limited by the need for training and retraining, lack of improving technologies and test tools, and incapacitation to support the patient in ensuring relief with particular reference to drugs purchases or access. In comparison to the American Diabetes Association's recommendation, the alignment of diabetes management to chronic care should be model by the interaction of patient and care team. Care facilities should ensure the availability of team-based care, tools to support patient decision making, patient registries, and involve the community to meet patients' needs. Ensure assessment of the quality of diabetes care, provide quality improvement strategies, and promote the improvement of care processes (ADA, 2019). The role of

government, health professionals, and diabetes patients are essential in patients' accessibility to diabetes care and quality of care.

Theme 7: Literacy Level

As previously identified subsequently confirmed by community health workers, patients' level of education impacts their ability to access diabetes information and care. For patients with good education and financial backgrounds, coping is less stressful. Patients on low wages, expanse families, uninsured got stressed and weigh-down with out-of-pocket-spending specifically on medications and dieting that often results in discontinuation of care, self-medication, susceptibility to fake drug use, and reversal to traditional medicines or a mixture of conventional and modern medication. This study found fatality in patients as reported by community health workers sampled, concerning the impact of cost-of-care, low-income family support, inadequate or compromised medications, and old age.

This finding aligned with a similar result in the study conducted by Diviani, van den Putte, et al. (2015), which submitted that people experience different challenges accessing healthcare services, some of which are unconnected to health insurance but are connected to health literacy and suggest an upgrade of available health information online. While Abolghasemi and Sedaghat (2015) shows that patients experience, attitude, and knowledge toward diabetes are factors associated with disease management and that patients without awareness about the disease cannot access accurate health information and care. Therefore and as in the study by Chinenye and Young (2016), this study posited

that, the degree to which an individual access health information and care depends on the level of their knowledge about the disease and complications.

Theme 8: Financial Constraints

The community health workers who participated in this study reported that their experience about patients' inability to access health information and care are related to the low-income status of patients, cost of diabetes medication, cost of diabetes recommended diet, paying out of pocket expenses, possible usage of fake drugs, self-medication and subsequent conflicts of needs between patients meeting their needs and that of their family members. This affects mostly the venerable in the society, low-income earners, farmers, petty traders, Okada riders, security men, inability to make out-of-pocket payments, and fake drug administration. Importantly, patients become susceptible to counterfeit drugs, as the community health workers indicated controls of the patient's access to medication and information are limited outside the healthcare facilities' purview.

Both participants and community health workers studied confirmed the expensive nature of treatment and drugs, with the possibility for the irregular taking of drugs in patients, outright abandonment of care and treatment, or susceptibility to the use of fake medicines. In comparison to a study conducted by Aregbeshola and Khan (2018), which indicated many Nigerians lived below poverty line with large fraction of families and household incomes spent on healthcare and health burdens. In variably, disadvantaged families seek low-quality care, resolve to self-medication due to the inability to make out of pocket medical expenses. The importance of understanding the depth and impact of

financial constraints and how it affects the participant's ability to access information and care has far-reaching implications as this element of the study impacts majority of the participants in this study.

Theme 5: Lack of Patient Follow-up Visit/Transportation

In care and treatments for disease conditions such as diabetes, regular follow-ups, and check-ups are essential. However, this study's findings reported constraints in this direction in the participants' ability due to inability to access transportation, the expensive nature of Abuja, ignorance, and family fatigue, especially for the male participants in the study. Examining the environment's roles as a critical foundation in living with the conditioned culture and cultural practices relating to dieting and feeding arrangement has been indicated to be significant both to causes and management of the condition. All community health workers interviewed support the position that diabetes has assumed the status of community disease. These findings are supported by the community health workers' expositions, who variously alluded to the prevalence of the phenomena in which some community health workers equated with the prevalence of disease conditions such as HIV/AIDs in the country. Furthermore, this study shows the roles of culture relating to dieting, the impact of hereditary factors, and tendencies, therefore for generational transmission of the condition, which needed to be reexamined and reevaluated.

Additionally, it is indicated in the study of poor awareness of the nature and impacts of diabetes resulted in the negligence of the condition by authorities. The results have been fatal. This study shows that fatality in the situation relates to patients at 60years above, as indicated by the study's community health worker. However, as the

participants (patients) studied indicated and supported by community health workers' observation, the lived experiences are severe, agonistic, and excruciating. At the late stage of the condition, the community health workers indicated weakness, fatigue, exhaustion, agony, pains, trauma, and deaths in patients. While at the early and mid-course of the ailment, sleeplessness, stress and distress, excessive urination, and sweating. While information about the healthcare condition is available in the healthcare facilities, there is reported poor information dissemination on the diseases to the patients and the general public. This finding was similar to those of Amante et al. (2015) and Adeloye (2017). However, this study is unique in showing the level of awareness and the patient's multiple and conflicting (often financially constrained) as the critical link to missing out on access to useful information. Additionally, this study emphasizes that state (government) through policy inadequacy and therefore the absence of media package for sensitization on the disease condition's veracity and implication combined to play down on the magnitude of diabetes as a 'silent killer' in the study area.

The educated and informed, financially viable participant reported using online sources to enhance the lived experiences from their condition, both for consultations and drug purchases. This finding agrees with the studies of Petroviski and Zivkovic (2017), Crange et. al (2018), and Nuche-Berenguer and Kupfer, 2018). At the same time, the scholar recommends caution and guidance of specialists in their separate studies. Such a key factor as a specialist guide to patients' online interaction with sources either for access to information, general consultation, or purchase of drugs is most desired in the study area. Due to several technological and socioeconomic impediments, this study

contends that patients' need to be appropriately guided and directed by specialists could not be substituted for patients' instincts and discretions to sieve between the 'chaff and the wheat' of both online. Overall, the coordinated role of government on the health condition studied exposes a wide gap in policy, practices, support for care, and the absence of professionalization necessary and integral to enhancing and improving the lived experiences of patients living with diabetes. This finding supported similar findings such as in Egbujie et al. (2018), Garner et al. (2019), and Onyiriuku et al. 2019. Here, social determinates influence a patient's ability to seek proper care, go for diabetes screening, afford medication, and afford the recommended diet plan and transportation to doctors' visits. Healthy behavior is affected due to the socio-economic environment, and individuals from low-income communities are mostly affected by diabetes complications.

The community and built environment significantly influence access to diabetes information and care. The built environment refers to accessibility to amenities, public transport, hospitals, and social network, to create awareness on diabetes. The direct impact of community and built environment in this study is why patients don't follow up with a doctor's visit. The community and food insecurity also influence access to information and care, as access to recommended diet and consumption for diabetes patients are limited, thereby contributing to health disparity. The food insecurity results from the inability of diabetes patients to afford recommended diets due to financial constraints; the low-income earners then struggle to meet the recommended diet and family diet needs. Therefore, in the situation of food insecurity, diabetic patients rely on calorie-dense food. The findings also concur that patients' inability to pay for health care

is a major determining factor affecting care access. This indicates that patients are aware of the importance of appropriate care and the sources but constrained with funds.

Limitations of the Study

There were many limitations to this study. The first was that most of the participants interviewed were men with just one woman; this restricted the study results to all diabetes patients in Abuja Municipal Area Council. However, this study was only a preliminary study of the lived experience of diabetic patients and community health workers in Nigeria. Therefore, this limited the generalization of the study's findings of Access to Diabetes Information and Care. Another limitation of the study was the small sample size; I spent only a short time in the community during data collection. Only a handful of participants and community health workers were interviewed (six participants and five community health workers). This limits the generalizability of the findings and conclusions of the study. The study also recruited only participants who speak English; it would have been ideal to recruit and interview participants who cannot speak English. Diversity in the participant's response would have enabled data collection from a broader range of perspectives. With these points in mind, this study's findings were interpreted with caution, assuming that all participants gave an accurate account of their experience accessing diabetes information and care in Nigeria.

Recommendation for Future Research

This study identified gaps in access to diabetes information and care for this population and provides baseline information for further studies on barriers and challenges for improving access to information and care for the diabetes population in

Abuja Municipal Area Council. Further studies are recommended on possible ways of improving access to diabetes information and care, as it relates to establishing formal diabetic association that creates awareness about diabetes to empower people to safeguard and improve their health. Future research would benefit the study population since this study serves as a preliminary base for likely studies that would use larger participants, including males and females, unable to speak English for better generality. However, to promote access to information and care in Abuja Municipal Area Council, the following recommendations are made.

Policy Recommendations

1. I recommend that the Abuja municipal council health authority consider diabetes a severe state health risk and plan to address it.

2. This study identified out-of-pocket expenses relating to drugs and medications as the critical factor in the agony of the patient living with diabetes in Abuja municipal council. It is recommended that the Abuja municipal council health authorities subsidize diabetes medications for patients 50years and above to ease the burden.

3. The study reveals the shortage of diabetes care professionals in the area studied. Therefore, I recommend sourcing and employing diabetes specialists and their deployments to public health facilities to improve the number of available medical professionals.

4. The study underscored the implications of the absence of diabetes patient associations in the study area. There are over 230 diabetes associations world over under the umbrella of International Diabetes Federation (IDF). Diabetes associations provides awareness, advocacy and lobbying functions to both diabetes patients and general public towards managing and curbing the prevalence and spread of the conditions. Mostly as non-profitable bodies diabetes associations explore findings and donations towards relieving economic and medical effects of diabetes care in patients. Also, this bodies support research and exchange of diabetes knowledge while coordinating with decision makers, public health officials and authorities, diabetic care professionals and educators in advancing the front of diabetes care. I believe that organizing diabetic patients into registered associations will create more awareness about diabetes and access to care information. Apart from enhancing the self-help efforts of the patients.

5. Special diabetics facilities could be created for patients living with diabetes in government healthcare facilities to lessen the waiting period and its effects on the patients.

6. Healthcare care insurance for diabetic patients is a strategy that must be developed and strengthened in the formal and informal context in the area of study. Government and business organizations should explore the challenges and prospects in providing insurance for diabetes as a futuristic plan and strategic investment towards readiness for national health care need outcome.

7. Medications in the treatment and management of health conditions have been identified to be expensive. NAFDAC, drug manufacturers, companies, and the Federal Ministry of health are recommended to work together towards subsidizing research and production of quality and affordable diabetic drugs for patients living with the condition.

8. There is a need for collaborations between the Ministry of Health and the Ministry of information in Nigeria towards designing and implementing programs for creating awareness in people of diabetes and disseminating information on diabetes management to people living with the condition. The roles of culture and religious leaders in the communities are vital to enhancing social change towards dietary reviews as preventions measure to the development of diabetic conditions. This group must be incorporated into research, programming, advocacy, and general discussion on how forward to living with and managing diabetes in the area studied.

9. Diabetes information is available within the healthcare facilities studied. A patient must be encouraged to access this facility through various forms of subsidies such as free consultations and screening, reduced length of waiting, improved surroundings and infrastructures such as sitting arrangements, etc.

Implications for Social Change

Empirically this study has provided insights into the interplay of treatments and diabetic conditions among patients in the Abuja municipal council in Nigeria's federal

capital tertiary. It is was discovered that intense out-of-pocket spending jeopardizing care in the context of harsh socio-economic reality in the nation and competing family needs in patients. The study reaffirmed studies showing inadequacies and lack of diabetic specialists in the area studied while diabetes is assuming an alarming proportion in the population. This study has, therefore, contributed to knowledge. The conceptualization of diabetes as an underreported health emergence that is both biological and environmental engineered in the area of study. Agreeing with global trends and triggers to the conditions, this study shows that the nature of dieting, dietary traditions, and preferences, lack of regular exercise, sedentary living, work-stress, old age, etc., are key causal agents of the condition.

Methodologically, this study demonstrates the adaptability of the Social Ecological Model (SEM), primarily the community level of influence in exploring the nature, effects, and impacts of the phenomena diabetes in the perceptions and behaviors of both patients and CHW in the organization of care and consequences from there. The study shows the qualitative method's robustness in collecting rich information from people's experiences that mirrored realities at firsthand value. The technique allows for subjective incisiveness, expansiveness, and expressiveness that expand the front of the study in data. Findings from this study provided a sample of the holistic picture in the experiences defining the lived experience of the people living with diabetes in Nigeria.

Conclusions

This study demonstrated that living with diabetes in a developing country such as Nigeria in the FCT municipality is challenging and requires multitasking. The

socioecological model shows that the community plays a critical role in the causation and spread of diabetic conditions where people's dieting is reinforced and conditioned by their cultural practices. Diabetic patients lived under excruciating financial realities that hampered care and often complicated treatments and recovery. While family support is key to patient recovery and stability, such support is often inadequate and exhaustive owing to competing needs within patients' families. The state governments, the professional associations in the management and treatment of the condition (diabetes), and patients (diabetic patients) can bring the national front burner for policy and programming to prevent care efficiency.

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Appendix A: Interview Guide for Participants

1. What are some of the problems you face trying to access diabetes information and care?

   1a. What strategies do you use to overcome these problems? (e.g., poor organization of care, lack of diabetes specialists, lack of knowledge, out of pocket payment, fake drug).

2. Does your diabetes status affect you and your family members financially?

   2a. If yes, how?

3. Are you able to access health care facilities in your community for your diabetic care?

4. What is your experience, conversing with your health care provider about your diabetic status?

5. Have you seen a diabetic specialist since you were diagnosed with diabetes?

6. Do you have health insurance?

   6a. If not, why?

7. Have you had occasions when you could not afford to pay for doctors' visits?

8. Do you get the right medication for your diabetes?

9. Have you had an occasion when you bought fake medication for your diabetic situation?

10. Do you go online to get information about your diabetes situation?

11. Are you affiliated with any diabetes outreach program, such as Diabetes Life-Changing Group, where you get information on diabetes?

11a. If yes, what are your experiences with such a group? (Sharing your diabetes story, what you learn about diabetes accessing diabetes information and care).

12. Which other source do you get diabetes information?

13. . Can you describe any other thing you consider a hindrance to your ability to access diabetes information and care?

14. What are your recommendations for improvement to ensure proper access to diabetes information and care?

15. Do you have anything else that you would like to discuss with me?

Appendix B: Interview Guideline for Community Health Workers

1. What is your experience assisting patients with diabetes in Abuja Municipal Council?

    1 a. Do you work under the directives of a provider to help these patients?

    1 b. What kind of care do you provide for your patients?

2. Are there available diabetic specialists in these health facilities?

3. How does diabetes patient's status affect them and their family members financially?

4. Have you had an occasion when patients could not afford to pay for medical bills?

    4 a. What was the result of this situation?

5. Have you had an occasion when patients bought fake medication?

    5 a. How did you handle this situation with your patients?

    5b. what was the result of this?

6. Do you know of any diabetic patients who had developed complications or died because of; (e.g., poor organization of care, lack of diabetes specialists, lack of knowledge, out of pocket payment, and fake drug administration)?

7. How have environmental/ community factors (e.g., available specialists, health facilities) affected the patient's ability to access diabetes information and care?

8. In your experience, what other factors affect the patient's ability to access diabetes information and care in Abuja Municipal?

9. Do you have anything else that you would like to discuss with me?

10. As a Community Health Worker, what are your recommendations for improvement to ensure proper access to diabetes information and care?