An Interpretive Description of Nigerian Healthcare Providers' Perspectives, Experiences and Practices of Self-Management Support for Persons with Type 2 Diabetes

by

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Abstract

Background: Studies show that most people living with diabetes in Nigeria have inadequate knowledge of their condition, poor self-management, and poor glycemic control. Many of these studies focused on patients who were often blamed by healthcare providers (HCPs) for their situation. There is a paucity of research focused on how HCPs may support patients to manage their diabetes. Therefore, it was vital to explore self-management support (SMS) from the perspective of Nigerian HCPs to understand their SMS experiences and practice.

Purpose: I aimed to explore the perspectives, experiences, and practices of SMS among Nigerian HCPs providing direct care to persons with type 2 diabetes (T2DM) in two endocrinology clinics in the southeastern part of Nigeria.

Design: In this interpretive description (ID) study, I collected data in two hospitals between August 2018 and September 2019 from 19 HCPs, including doctors, nurses, dieticians, and health educators who had worked in the clinics for at least 1 year.

Data generation: I conducted a total of 23 interviews, including 17 face-to-face interviews and six phone interviews. Four HCPs were interviewed twice. The semistructured interview guide evolved as concurrent data generation and analysis continued. I observed participants as they provided care to persons with diabetes at the clinics. I recorded field notes immediately following each observation period. I also reviewed documents used for educating patients.

Data analysis: I used a constant comparative and thematic analysis approach to analyze data. Concurrent data generation and analysis allowed emerging findings to guide the process of data generation. Interview data were self-transcribed verbatim, reviewed for accuracy, and all data—including transcripts and field notes—were uploaded to Quirkos©. I immersed myself in the data by reading and rereading the interview transcripts and field notes and listening to the audiotapes to gain a global understanding of participants' experiences. I used the following strategies to ensure rigour within the study: theoretical and maximal variation sampling, concurrent data generation and analysis, multiple data sources to obtain multiple perspectives on the issue of SMS in Nigeria, debriefing with doctoral supervisors, reflexive journals, and memos.

Results/findings: Four themes emerged from this study. The first theme was *the cultural and social context of SMS*. This theme included cultural beliefs and practices (belief in the supernatural origin of disease and individual-family interdependence), myths and limited understanding of diabetes, absence of health insurance, and the structure of diabetes care. The second theme was *navigating the sociocultural terrain*; this theme included strategies used by HCPs to adapt care to their patients' cultural beliefs and practices and contained subthemes such as involving God, prayer, and family members. The third theme was the *compliance-oriented medical model,* which included participants' mindset and approach to SMS. In this approach, a focus on the disease and patient compliance with their instructions was the goal. Subthemes for the compliance-oriented medical model included priority on normal blood glucose, focus on compliance, HCPs as experts, and SMS as advice, informal counselling, and education. The fourth theme was *SMS within* the *context of the traditional hierarchical structure.* This theme involves HCPs' experiences as they adapted SMS within a system that was not originally designed to support it. Subthemes within the above theme included role validity, role boundaries and poor teamwork, inertia in HCPs and organization, and lack of infrastructure support.

Implications: The study findings emphasize the need to improve patients' self-management by strengthening HCPs' SMS knowledge, practices, and organizational support. Besides the lack of essential resources and compliance perspective described by participants, the conceptualization of SMS in this setting was oriented to collectivism, interdependence, and family. Participants emphasized the family as an essential source of support for patients. It is vital to focus on a familial rather than an individualistic approach to management. Measures to bypass challenges while providing culturally acceptable care to patients should be identified and strengthened. These measures could have an immediate impact on self-management and SMS.

Conclusion: The study findings demonstrate the need to reevaluate the current understandings and practices of diabetes SMS in Nigeria and identify other available resources in the community that could enhance self-management capacities. Recommendations for healthcare practice, education, policy, and future research are advocated to strengthen SMS for persons with T2DM in Nigeria.

Preface

This thesis is an original work by Sandra Iregbu. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, "An Exploration of Nigerian Healthcare Providers' Experiences of Self-Management Support for Persons with Type 2 Diabetes," No. Pro 00081155, July 13, 2018.

Dedication

In loving memory of my father, Kenneth Umeadi Okoye, and my younger brother, Nonso Kenneth Okoye.

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I have been blessed with a unique set of mentors, supervisors, and families who have been pillars of support and inspiration to me in this academic journey and longstanding aspiration. First, I would like to acknowledge and thank my research participants. Without their openness and willingness to share their experiences, this research would not have been possible.

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My family is my primary motivation and my greatest cheerleaders. I am eternally grateful to my husband, Francis; this achievement would have remained a dream without his support. I thank my sister, Mrs. Chika Kwakpovwe, and my mother, Mrs. Bridget Okoye. Their regular words of encouragement and prayers have been a constant source of strength. Finally, I appreciate my children, Chukwuka, Chiamaka, Olaedo, and Ebuka. They all supported me in their own little ways. They often had to stay without me as I juggled between Nigeria and Canada. I love you all. This accomplishment is mine as well as yours.

Table of Contents

List of Tables

List of Figures

Chapter 1

Introduction

Chapter 1: Introduction

The importance of self-management support (SMS) in diabetes has been widely acknowledged and discussed in academic and professional literature. Support for diabetes self-management (DSM) was developed around the understanding that (a) diabetes management requires lifestyle changes and activities that must be carried out by affected individuals and (b) support from healthcare providers (HCPs) enables patients to better manage their conditions (Lorig & Holman, 2003; Morgan et al., 2016; Wagner et al., 2001). Like many chronic illnesses, type 2 diabetes (T2DM) has no cure; however, it can be managed with medications and lifestyle measures such as diet, physical activity, self-monitoring, regular intake of prescribed drugs, and other activities that depend on the patient's self-care behaviour. Therefore, self-management is widely regarded as the foundation of diabetes management (Diabetes Canada, 2018; American Diabetes Association [ADA], 2016). Self-management is a person's ability—in conjunction with family, community, and HCPs—to manage symptoms, treatment, lifestyle changes, and psychosocial, cultural, and spiritual consequences of their health condition (Wilkinson & Whitehead, 2009). Self-management is not the sole responsibility of patients; HCPs also have a crucial role. Persons with chronic illnesses such as diabetes primarily need assistance from HCPs to monitor their condition and "activate the cognitive, behavioural, and emotional responses needed to maintain a satisfactory quality of life" (Barlow, Wright, Sheasby, Turner, & Hainsworth, 2002, p. 178). In this introductory chapter, I will define SMS, discuss the benefits of SMS, and describe Nigeria's social and cultural context in which this study was conducted. I will also describe the problem statement, the purpose of this study, my research questions, and the significance of the study.

Definition of SMS

SMS is a prerequisite for effective self-management (Kawi, 2012; Wagner et al., 2001). Captieux et al. (2018) defined SMS intervention as any intervention that facilitates self-management, including "professional and nonprofessional caregivers collaboratively assisting individuals to manage the medical, role or emotional components of their health condition" (p. 2). Diabetes SMS includes activities that assist persons with diabetes to implement and maintain behaviours for ongoing self-management (Diabetes Canada, 2018). SMS is a vital component of the chronic care model (CCM) and a crucial aspect of chronic illness management (Wagner et al., 2001). An intervention is classified as SMS if the intervention helps persons with chronic illness to do the following:

1. Develop knowledge, skills, psychosocial or social resources relating to the management of their condition.
2. Adopt healthy life habits and recognize the signs of deteriorating health status.
3. Plan actions to take at signs of relapse or exacerbation.
4. Know what resources are available and how to access them.
5. Adhere to a treatment plan and communicate effectively with health professionals or another support network.
6. Solve problems and identify objectives, goals, and action plans (Galdas et al., 2015, p 4).

HCPs using SMS interventions incorporate various health activities designed to promote self-management among patients living with chronic illnesses. The essence of SMS is to empower patients and enable them to make informed decisions, solve problems, and achieve their health goals (Funnell, 2016).

Benefits of SMS

Diabetes SMS has been associated with significant health benefits among persons living with diabetes in various settings (Franek, 2013; Hecke et al., 2016; Steinsbekk, Rygg, Lisulo, Rise, & Fretheim, 2012). For instance, Franek (2013) conducted a meta-analysis of 10 randomized controlled studies involving 6,074 persons with chronic illnesses; SMS interventions for general chronic diseases were compared with usual care. In Franek's analysis, the intervention group outcomes in symptom and disability were statistically significantly less than that of the control group ($p = .004$). The treatment group also showed a statistically significant reduction in health distress ($p < .001$) compared to the control group. The intervention group also demonstrated more positive behaviour outcomes, such as increased confidence in managing chronic disease ($p = .002$) and improved communication with HCPs ($p = .02$). SMS is associated with positive outcomes such as increased knowledge of the health condition and its management, reduced HbA1C, patient-reported quality of life, self-efficacy, and behaviour change (Attridge et al., 2014; Steinsbekk et al., 2012).

SMS in Nigeria

Diabetes SMS has not been given much attention in African countries, including Nigeria. Prior studies of diabetes in Nigeria focused mainly on patients and their ability to comply or adhere to self-care recommendations. Nigerian patients generally have poor glycemic control, widespread inadequate knowledge of the disease, poor adherence to prescribed medications, and increased morbidity and mortality rates (Ezeani, Onyeonoro, Ugwu, Chuku, & Aihanuwa, 2015; Yusuff, Obe, & Joseph, 2008). The poor self-management and poor disease outcomes recorded in prior Nigerian studies point to a deep-seated problem that may be attributed to factors other than the patient. One such factor is the process through which patients are prepared, assisted, or equipped for the role of self-management.

Few studies address SMS for persons with diabetes in Africa. Dube, Rendall-Mkosi, Van den-Broucke, Bergh, and Mafutha (2017) noted the paucity of structured programs for diabetes self-management education (DSME) in South Africa. Similarly, other authors reported that diabetes education, which is an aspect of SMS, was mainly delivered on an ad-hoc basis in the waiting area during follow-up visits in Nigerian hospitals (Essien et al., 2017; Fasanmade & Dagogo-Jack, 2015; Nwankwo, Ezenwaka, Onuoha & Agbakoba, 2015). Afemikhe and Chipps (2015) conducted a quasi-experimental study to determine the effectiveness of a 5-week multidisciplinary patient-centred DSME program in Edo State, Nigeria. Afemikhe and Chipps found that the intervention group ($n = 15$) experienced significant reductions in fasting blood glucose levels ($p = .01$), and body mass index ($p = .25$) compared to the control group ($n = 13$). Afemikhe and Chipps' intervention consisted of a multidisciplinary health team that used group discussion, individual counselling, multimedia teaching, motivational interviewing, telephone calls by nurses, and goal setting. It is unknown whether the positive effects identified in Afemikhe and Chipps' study persisted beyond the study period. Afemikhe and Chipps' sample size was small, and the researchers did not follow up after the intervention; therefore, it is difficult to determine whether the demonstrated improvement could be sustained over an extended period. Furthermore, the intervention did not address any of the identified factors that hinder DSM in Nigeria. These factors include poverty, inability to afford prescription drugs, and lack of access to healthcare (Adejumo et al., 2015; Adisa, Alutundu, & Fakeye, 2009).

Most of the available diabetes studies in Nigeria have focused on patients who are often blamed for their noncompliance and nonadherence to medical instructions. Little is known about how Nigerian HCPs support patients in managing diabetes themselves. I aimed to explore Nigerian HCPs' perspectives, experiences, and practices of SMS for persons with T2DM to provide foundational knowledge regarding the factors that enhance or limit HCPs' ability to employ SMS best practices in Nigeria. Understanding the perspectives and experiences of HCPs may inform the adaptation and refinement of SMS practices to best meet the needs of Nigerians living with diabetes.

Nigeria

Nigeria is the most populous African country with an estimated population of 200,000,000 (Knoema, 2019). The country is characterized by continued population growth; the United Nations Department of Public Information (2017) projected that the Nigerian population would rise to 264,000,000 in 2030 and 410,000,000 in 2050. For comparison, Nigeria has 155,000,000 more people than Canada (MyLifeElsewhere, 2020). Nigeria is situated on the Gulf of Guinea in West Africa and bordered on the west by the Benin Republic, on the east by Chad and Cameroon, and on the north by the Niger Republic. Nigeria has a landmass of about 923,768 square kilometres (356,669 square miles), which is 9.25% of Canada's size (MyLifeElsewhere, 2020). Nigeria is divided into six geopolitical zones: South-East, South-South, South-West, North-East, North-Central, and North-West, comprising 36 states. Nigeria became an independent country in 1960. Nigeria is a developing country and is classified as a lower-middle-income country (United Nations, 2019). It has the second-largest economy in Africa and is the leading oil producer in Africa with the second-largest natural gas reserves (Africa News, 2017). Oil is Nigeria's principal export, accounting for over 80% of its annual gross domestic product (United Nations, 2019).

People from more than 250 ethnic groups, each with a different language and culture, live in Nigeria (Minority Rights Group, 2020). The country's three largest ethnic groups are the Igbo, Hausa, and Yoruba (each named after its language). English is the official language, and other main languages spoken are Pidgin, Igbo, Hausa, and Yoruba. Nigeria is divided between Christians who live mostly in the south and Muslims in the north, with a small minority practicing indigenous religion. Indigenous religion is characterized by (a) a belief in one supreme God, as well as smaller gods that serve different purposes and (b) an understanding that the spiritual controls the physical, which extends to issues such as illnesses and diseases (Okeke, Ibenwa, & Okeke, 2017).

The Igbo inhabit the southeastern part of Nigeria and occupy five states, namely Anambra, Imo, Abia, Enugu, Ebonyi States, and about a third of Delta State. Igbo also live in other cities in other states within Nigeria. The Igbo group is the second largest ethnic group in Nigeria, with an estimated population of about 30,000,000 people (Kestenbaum, 2012).

The Igbo of South-East Nigeria. Igbo culture is relevant to the current study because Igbos are the predominant occupants of the southeastern part of Nigeria, the region in which this study was conducted. The following is an overview of the Igbo culture to provide context for the study setting.

Igbo religious and health and illness beliefs. Igbos have a traditional religion, and religious practice is closely intertwined with Igbo culture (Nweke, 2020; Ojua, Ishor, & Ndom, 2013). The Igbo traditional religion is based on the belief in one supreme God: "Chukwu" (God), "Chi," and "Chineke" (creator). Igbo believe that this one supreme God controls the world and upholds justice (Okeke et al., 2017). Igbo believe in the law of retribution: the belief that people reap what they sow. Igbo believe that Chukwu works through other small gods called deities;

God and the deities watch over the earth and protect people who keep the laws of the land from misfortunes. Igbo believe that evil or wicked people can consult evil spirits to wreak wickedness on their enemies. Personal and communal misdeeds are believed to be punished by God with personal and group failures, sickness, and catastrophes (Metz, 1991); thus, chronic illnesses may be perceived as punishment from God for past misdeeds or misdeeds of one's parents or ancestors. Chronic illness is also seen as a machination of one's enemy (Ezekwesili-Ofili & Okaka, 2019). Illnesses resulting from God's punishment or the influence of sorcery are believed to be amenable only to spiritual or traditional cure; for such conditions, Western medicine is deemed worthless. Solutions may be obtained from appeasing God or going to a pastor or traditional doctor and herbalist to discern the spiritual cause of the misfortune and provide a cure (Ezekwesili-Ofili & Okaka, 2019). Igbo also believe in the efficacy of herbs for treating diseases.

Much of the Igbo are now Christian (Okeke et al., 2017); however, Christian beliefs are often mixed with traditional beliefs. Such admixture of beliefs includes a belief in ancestral curses and a belief that an enemy can exert negative spiritual influences on someone. These influences are thought to translate to physical ailments in some cases. All of the Igbo's important cultural events, such as the New Yam Festival, child dedication, and the Mmanwu Festival, are held in reverence to a divine power. The New Yam Festival is held annually in celebration of the harvest of yam, the chief crop in Igboland, and in deference to the goddess of yam. The Mmanwu festival celebrates the different spirits that play vital roles in the affairs of men. A child's birth is marked a few weeks later by a religious ceremony in which friends and family show appreciation to God for the gift of the child. Religious belief is also reflected in peoples' names. For instance, the name "Chika" means "God is greater," the name "Uchechi" means

"God's will," and the name "Chinwe" means "God's own." Christianity has replaced the Igbo traditional religion; however, religion is still central to the life of the Igbo.

Igbo traditional healthcare system. The traditional healthcare system of the Igbos comprises popular and folk systems. The popular systems involve culturally based personal, familial, and communal beliefs and practices. This sector includes family, friends, and neighbours who are consulted in the initial phase of an illness. Family, friends, and neighbours offer advice on how and where to seek care and suggest a temporary or permanent solution for ill health.

The folk system in the nonwestern sector is comprised of nonprofessional healing practices such as religious and spiritual healers, native bone setters, and herbalists (Kleinman, 1978). In Nigeria, the folk system is comprised of traditional medicine practitioners. Traditional medicine is described as a holistic form of healthcare that uses a totality of the expertise and systems based on the theories, beliefs, and experiences of a cultural group used to diagnose or treat physical and mental illness (World Health Organization [WHO], 2020b). In Nigeria, practitioners include priests or priestesses, herbalists, diviners, local midwives, seers, or spiritualists (Ezekwesili-Ofili & Okaka, 2019; Okonkwo, 2012). The community recognizes these practitioners as competent to provide holistic healthcare by using plant, animal, and mineral substances and other methods based on the cultural beliefs and practices of the community (WHO, 1978). This folk system offers a cheaper alternative to biomedical services that align with the community's culture. Traditional medicine practice in Nigeria is weakly regulated and often criticized by Christians due to the use of divination, which is against Christian beliefs. Other criticism of traditional medicine includes lack of standardized dosing and challenges with the preservation, potency, and determination of side effects (Okonkwo, 2012;

Omoleke, 2013). However, many in Nigeria embrace traditional medicine because it aligns with their cultural beliefs and is more accessible, cheaper, and considered natural (Ezekwesili-Ofili & Okaka, 2019; Oreagba, Oshikoya, & Amachree, 2011).

The Igbo traditional healing system arises from Igbo cultural beliefs, which include the belief that all physical ailments have a cure, belief in the efficacy of herbs, and belief in divination (Okonkwo, 2012). From a cultural perspective, Igbos believe that every disease has a cure. Illnesses that defy all remedies are seen as effects of supernatural forces. For instance, chronic diseases such as diabetes are usually attributed to supernatural causes such as God's wrath, sorcery, evil spirits, or the influence of one's enemies (Adejumo et al., 2015). Complications of diabetes, such as foot and leg gangrene, are attributed to sorcery or poison given to a person by someone considered an enemy. Spiritualists and herbalists are consulted for solutions to mishaps, which usually involve prayers and the use of herbs.

Igbo culture and identity. Igbo men are respected for their physical strength, virility, and ability to provide for their family members (Achebe, 1986). Igbo men experience a significant blow to their self-image when suffering disabilities such as blindness, loss of limb, sexual dysfunction, or change in social role caused by chronic illnesses such as diabetes. On the other hand, Igbo women are expected to take care of their husbands and families. Any limitation on this role imposed by chronic illnesses may have psychological consequences. In Igbo traditional settings, the family defines people, and critical personal decisions are usually made in conjunction with family members (Achebe, 1986; Sule, 2013). Family members are also expected to support one another when in need.

Many people in the southeastern part of Nigeria live in nuclear families. However, they are connected to their more distant relatives, such as uncles, aunts, brothers, sisters, and parents.

A cluster of related families makes up a kindred that is usually headed by the oldest male, who is highly respected (Uchendu, 2007). These related families do not live together but are connected and regularly hold meetings. The kindred is very important and plays a significant role in ceremonies such as marriage and burial ceremonies. Several factors determine social status among this cultural group; for instance, age is prominent for both men and women. Like in most societies, wealth is an important determinant of social status. For women, being married confers a higher social status than being single.

Igbos regard death as an end to the journey of life on earth. Death is considered crossing over to another realm and is sometimes celebrated when an older adult dies; however, a child or young person's death is generally viewed as an abomination (Okonkwo, 2012). Prayers against untimely death is a prominent feature of the Igbo traditional rituals.

Igbo dietary practices. Okeke, Eneobong, Uzoegbulam, Ozioko, and Kuhnlein (2008) documented traditional foods and their availability and use among Igbo culture. Okeke et al. found that cereals such as maize and starchy roots and tubers like cassava and yam are essential food groups for the Igbo. These foods form the base of the Igbo cultural diet. Okeke et al. also found that many fruits and animal foods were available but were not commonly consumed due to cost and availability. A typical diet in Igbo culture is a plate of "fufu" or "garri" made from cassava or yam and soup made from palm oil, crayfish, meat, vegetables, and other condiments. Other everyday diets include yam, rice, plantain, and beans. Diets in this part of the world are rich in carbohydrates and oil; when consumed freely, as is often the case with many Igbo people, these foods make controlling one's blood glucose a considerable challenge. These traditional foods are widely available in local and open markets and cheaper than processed foods.

Diabetes SMS Services Within the Nigeria Healthcare System

Diabetes presents an enormous challenge for an underfunded healthcare system in Nigeria (Fasanmade & Dagogo-Jack, 2015; WHO, 2014). Nigeria has three levels of health care: tertiary, secondary, and primary healthcare systems (Fasanmade & Dagogo-Jack, 2015). At the fundamental level, community healthcare centers exist within the communities. These centers provide accessible and affordable health care; however, only minor ailments are treated at this level. Healthcare centers are staffed by a few registered nurses, midwives, and community health extension workers and are not equipped to manage diabetes and other chronic diseases (Oyewole, Ojewale & Oluwatosin, 2020). Diabetes care is provided only at the secondary and tertiary levels of government specialists and private hospitals in Nigeria (Chinenye & Young, 2011; Fasanmade & Dagogo-Jack, 2015; Onyekachukwu, 2016).

Nigeria has no comprehensive national health insurance coverage; available health insurance covers only federal government workers and those in the organized private sector, both of which make up less than 10% of the total population (Fasanmade & Dagogo-Jack, 2015). Most hospital expenses are paid out of pocket by patients and their family members.

Statement of the Problem

Many Nigerians living with T2DM have insufficient knowledge of diabetes and poor self-management, resulting in increased morbidity and mortality (Adejoh, 2014; Adejumo et al., 2015; Aguocha, Ukpabi, Onyenoro, Njoku, & Ukaegbu, 2013; Chinenye & Young, 2011; Jackson, Adibe, Okonta, & Ukwe, 2014; Jasper et al., 2014; Yusuff et al., 2008). For instance, uncontrolled blood glucose was recorded in up to two-thirds of persons with diabetes in Nigeria (Chinenye & Young, 2011). High rates of complications such as stroke, limb amputations, blindness, and premature death have been recorded among persons with diabetes in Nigeria

(Aguocha et al., 2013; Ogbera & Ekpebegh, 2014; Ojobi, Odoh, Aniekwensi, & Dunga, 2016). Many researchers attribute patients' low levels of education, low health literacy, different cultural beliefs, and poverty to inadequate knowledge of diabetes and poor self-management.

Researchers of prior studies mainly focused on patients while neglecting other factors such as HCP and healthcare system issues that may have influenced patients' ability to self-manage. For instance, support from HCPs has been recognized as crucial in attaining optimal self-management (Siminerio et al., 2013; Worswick et al., 2013). Patients who do not receive support from HCPs may practice poor self-management due to insufficient knowledge, technical skills, or confidence to implement needed behavioural tasks; therefore, one must look at the overall picture to ascertain reasons for poor self-management among persons with diabetes in Nigeria.

A dearth of research explores how persons with diabetes in Nigeria are prepared for successful self-management. Scholars must further understand HCPs' experiences, knowledge, attitudes, values, and beliefs regarding SMS and how these factors influence clinical practice. The Diabetes Association of Nigeria (DAN) acknowledged that SMS is a core aspect of diabetes care (Chinenye, Ofoegbu, Onyemelukwe, Uloko, & Ogbera, 2013). DAN developed a diabetes treatment guideline to improve diabetes care (Chinenye et al., 2013). In their guidelines, DAN acknowledged the central role of individuals in managing their diabetes and identified the patient and family's education as the most crucial obligation of clinicians in diabetes management. DAN posited that (a) persons with diabetes and their family members should receive DSME at diagnosis and later as needed, (b) self-management behaviour change is the key outcome of DSME and should be measured and monitored as part of care, and (c) DSME should address psychosocial issues because emotional well-being is strongly associated with positive diabetes outcomes (Chinenye et al., 2013). Similarly, WHO, Chronic Diseases and Health Promotion (2002) proposed a shift to a patient-provider partnership model of chronic disease care in which the patient occupies a central role in diabetes management.

In principle, DAN has mapped out guidelines for diabetes management and demanded a shift to collaborative care (Chinenye et al., 2013); however, the extent to which this guideline has been implemented is unknown. Prior scholars' references to didactic, ad-hoc education offered in many diabetes clinics in Nigeria as self-management education (SME) may reflect Nigerian HCPs' notions about SMS (Onyekachukwu, 2016).

HCPs' support of patients with diabetes is pivotal (ADA, 2015; Chinenye et al., 2013; Diabetes Canada, 2018). In addition to the positive relationship between diabetes SMS and health status (Chrvala, Sherr, & Lipman, 2016; Grillo et al., 2013), researchers have found that HCPs' knowledge, attitudes, and beliefs regarding self-management and SMS influence the care HCPs provide as well as disease outcomes (Alvarez, Greene, Hibband, & Overton, 2016; Dube et al., 2017; Fransen, Beune, Baim-Lance, Breussing, & Essink-Bot, 2015; Murphy, Chuma, Mathews, Steyn, & Levitt, 2015; NHS England, 2015; Rademakers, Jansen, der Hoek, & Heijmans, 2015; Schulman-Green, Jaser, Park, & Whittemore, 2016). For instance, HCPs are more likely to provide SMS if HCPs (a) understand what SMS entails and (b) have the required expertise for the proposed activity. HCPs' predispositions and beliefs regarding the usefulness and feasibility of SMS interventions and their ability to provide support determine if and how HCPs provide SMS. The availability of required resources, including time, material, and staff, influences SMS provision (NHS England, 2015; Philips, Short, Dugdale, Nugus, & Greenfield, 2014). Furthermore, Philips et al. (2014) found that HCPs are more likely to provide SMS if SMS is an employment requirement and if the HCP is comfortable exercising the required knowledge and skills. Thus, the disposition and skills of HCPs are vital in providing adequate SMS.

Few known Nigerian studies have explored HCPs' perceptions and practices of SMS. Nwankwo et al. (2015) assessed the opinions of registered nurses (*n* = 517) and dieticians (*n* = 29) on implementing DSME in the southeastern part of Nigeria. Nwankwo et al. revealed that 57.1% of participants agreed that some cultural factors or practices could hinder DSME, whereas 54.4% did not agree that religious practices would affect DSME in southeastern Nigerian populations. Only 34% believed that their institutions were prepared to implement DSME. In addition, more than 60% of the participants cited lack of qualified personnel, lack of adequate educational facilities, and lack of economic resources as barriers to the implementation of DSME in their health facilities. Nwankwo et al.'s study revealed nurses' and dieticians' views on DSME and indicated that there were inadequate human and material resources to implement DSME; however, Nwankwo et al. did not provide insight into the actual SMS practices in Nigeria or how SME could be further developed. The SMS experiences and practices among Nigerian HCPs who provide direct care to persons with T2DM should be explored to provide an additional angle of vision to the problems of DSM in Nigeria.

In summary, SMS is a crucial aspect of chronic illness management that helps prepare persons living with chronic diseases for life-long self-management. Diabetes SMS is a prerequisite for effective self-management. Prior researchers have reported that self-management is poor among persons with diabetes in Nigeria. Efforts from previous researchers have focused on patients who are perceived as defying HCPs directions while contending with other circumstances such as poverty and cultural practices that affect patients' ability to manage their conditions effectively. The process through which patients are prepared for effective self-management has not been explored; therefore, other factors that may influence patients' self-management of their diabetes must be investigated.

Purpose

My purpose for undertaking this study was to explore Nigerian HCPs' perspectives, experiences, and practices of SMS in the context of outpatient diabetes care. A study focusing on HCPs who directly provide care to persons with diabetes in Nigeria may provide a clearer picture of SMS practices, the underlying perceptions that drive HCPs' practice, and how social and cultural factors inherent in the Nigerian context influence SMS decisions and practices. I conducted this study in two outpatient diabetes clinics located in the southeastern part of Nigeria.

Research Questions

The overall research question that formed the basis of this study was as follows: What can be learned from Nigerian HCPs' perspectives, experiences, and practices of SMS for people living with T2DM in Nigeria?

More specific questions were as follows:

Q1.1: What are the HCPs' perspectives (experience, knowledge, values, belief) of SMS in Nigeria?

Q1.2: How do these perspectives inform their practices?

Q1.3: How do the cultural and social contexts of HCPs, patients, and their families influence diabetes SMS practices?

Significance of the Study

HCPs providing direct care to persons with diabetes have experiential and practical knowledge about effective and unhelpful strategies within their cultural, social, professional, and organizational context. HCPs also have a first-hand knowledge of the different barriers that providers face when providing care to patients with T2DM. This study may benefit the Nigerian healthcare system, nurses, and other professionals involved in diabetes care by providing a baseline for interventions geared towards addressing modifiable barriers associated with SMS for persons with T2DM.

Furthermore, this study addressed a gap in the literature by highlighting the different ways Nigerian HCPs support patients with diabetes to manage their condition. This in-depth exploration of HCPs' experience providing care to individuals with T2DM in Nigeria provided insight into HCPs' views on SMS, the nature of the support HCPs provide for persons with diabetes in this region, and how factors within the Nigeria context enhance or constrain provision of care to persons with T2DM.

The study results may lead to improved knowledge that could potentially serve as a learning point to practitioners of nursing and other members of the multidisciplinary team. The information gleaned from this study may help HCPs appreciate their different disciplinary perspectives and common roles in diabetes SMS.

List of Abbreviations and Definitions of Terms

Carbohydrate counting (carb counting): Carbohydrate counting is the act of keeping track of the carbs in all meals, snacks, and drinks to help individuals with diabetes match their activity level and medicines (e.g., insulin) to the food they eat (Centers for Disease Control and Prevention [CDC], 2019).

Chronic Care Model (CCM): The CCM is an evidence-informed, widely adopted approach to improving ambulatory care for persons with chronic illnesses. The model has guided clinical quality initiatives in the United States and around the world. CCM has six interrelated components—including SMS—to enable patient-centred, evidence-based care (Coleman, Austin, Brach, & Wagner, 2009).

Type 2 Diabetes (T2DM): T2DM is a type of diabetes that results from insulin resistance and beta-cell impairment leading to hyperglycemia (Stumvoll, Goldstein, & van Haeften, 2005)

Diabetes self-management education (DSME): DSME is the ongoing process of facilitating knowledge, skills, and abilities necessary for diabetes self-care. DSME integrates a person-centred approach and shared decision-making (Powers et al., 2016).

Diabetes self-management (DSM): DSM is an ongoing and dynamic process in which persons with diabetes manage their condition (Lorig & Holman, 2003).

Self-management education (SME): SME is the ongoing process of facilitating knowledge, skills, and abilities necessary for chronic illness self-care and integrates a person-centred approach and shared decision making (Powers et al., 2016).

Self-management support (SMS): SMS are interventions carried out by HCPs to enable patients with chronic illnesses to implement and maintain behaviours for ongoing self-management (Diabetes Canada, 2018).

Food/Diet Guide: The food guide is a document used in this study area that shows different food and their measurements. The list of foods is grouped into three categories: food to be eaten freely, food to be eaten in moderation, and food to be avoided.

Fasting blood sugar (FBS): FBS measures blood glucose after an individual has not eaten for at least 8 hours.

Random blood sugar (RBS): RBS is a blood sugar test taken by someone who is not fasting.

Healthcare provider (HCP): In this study, HCP refers to health professionals who provide direct care to persons with diabetes, such as nurses, endocrinologists, dieticians, health educators, and resident doctors.

Glycated Hemoglobulin (HbA1C): HbA1c reflects average plasma glucose over the previous 8 to 12 weeks (Nathan, Turgeon & Regan, 2007). An HbA1c of 6.5% is recommended as the cut point for diagnosing diabetes (WHO, 2011).

Innovative Care for Chronic Conditions (ICCC): ICCC is an adaptation of the CCM developed to fill the gaps in the CCM and make it adaptable to the reality in lower-income countries (Nuño, Coleman, Bengoa, & Sauto, 2012).

Chapter 2

Review of the Literature

Chapter 2: Review of the Literature

The purpose of this chapter is to situate the study within available knowledge. I begin with an overview of T2DM to provide context for the study. I then discuss the concept of self-management and SMS. Finally, I summarize what is known and unknown concerning DSM and SMS in Nigeria to give readers a better sense of what this study represents.

Overview of T2DM

Diabetes is one of the leading causes of mortality and morbidity worldwide (WHO, 2016a). Diabetes is a growing health challenge of the 21st century; the number of adults living with diabetes has increased dramatically over the past 2 decades (International Diabetes Federation [IDF], 2019). The number of people living with diabetes increased significantly from 108,000,000 people in 1980 to 422,000,000 people in 2014 (WHO, 2020a). This figure is projected to rise further to 700,000,000 people by 2045 (IDF, 2019). The global increase in the prevalence of diabetes is also reflected in Africa. More than 19,000,000 people currently live with diabetes in Africa, with the figure expected to rise to 47,000,000 people by 2045, a 143% increase in the prevalence of the disease (IDF, 2020). Among the total number of people living with diabetes in Africa, an estimated 2.7 million reside in Nigeria, with more than half of this figure still undiagnosed (IDF, 2020). The above figure is based on an estimate and may not reflect the true prevalence of diabetes in Nigeria (Uloko et al., 2018). The increasing incidence and prevalence of diabetes in middle-income and low-income countries such as Nigeria is attributed to population growth, economic development, ageing populations, increased urbanization, dietary changes, obesity, reduced physical activities, and changes in other lifestyle patterns (WHO, 2016b).

T2DM occurs in 90% of all diabetes patients (Chatterjee et al., 2018). T2DM is caused by variable degrees of insulin resistance and beta-cell dysfunction. T2DM manifests in an initial state of reduced insulin sensitivity followed by hypersecretion of insulin by the beta cells of the pancreas as a compensatory mechanism (Zaccardi, Webb, Yates, & Davies, 2015). With the declining insulin sensitivity and increasing insulin resistance, insulin secretion is eventually not able to meet up with the required insulin levels, resulting in increased blood glucose concentration (Zaccardi et al., 2015).

Physical and Psychosocial Implications of Diabetes

Poorly controlled diabetes results in persistently high blood glucose levels (HbA1c levels > 7%). Over time, such high blood glucose levels alter both small and large blood vessels' integrity, leading to blood vessel damage and subsequent damage to body organs (ADA, 2009; IDF, 2015; WHO, 2016b). Empirical evidence shows an association between diabetes and increased risk of microvascular complications, stroke, myocardial infarction, sensory neuropathy, and premature death (Stratton et al., 2000; WHO, 2020a). WHO (2016a) noted that adults with diabetes are two to three times more likely to be diagnosed with cardiovascular diseases, ten times more likely to develop chronic kidney disease, and between 10 to 20 times more likely to require nontraumatic lower-limb amputations when compared to individuals without diabetes.

Living with diabetes has social and psychological consequences in addition to the physical effects. Like other chronic illnesses, diabetes disrupts the organization of everyday life (Bury, 1982). This disruption results from the physical limitations imposed by the disease, along with increasing dependence on others, loss of bodily control, increasing uncertainty about the impact and course of the disease, and possible alteration of self-identity and social roles

(Aujoulat, Marcolongo, Bonadiman, & Deccache, 2008; Due-Christensen, Zoffmann, Willaing, Hopkins, & Forbes, 2018). Individuals diagnosed with diabetes must make lifestyle modifications such as dietary changes, maintaining blood glucose balance, and constant body watching, all of which can limit socialization. The financial cost associated with diabetes also adds additional strain. Furthermore, complications of diabetes—such as loss of sexual function (Owiredu, Amidu, Alidu, Sarpong, & Gyasi-Sarpong, 2011), blindness, and loss of limb—result in individuals losing their sense of identity and changes in social relationships. Persons living with chronic illnesses such as diabetes have described life with a chronic illness as a world filled with unpleasantness, uncertainty, and disorderliness (Aujoulat et al., 2008; Broom & Whittaker, 2004; Hsu, Hsu, Hsu, & Wang, 2015).

Diabetes is also associated with a host of psychological problems, such as depression and emotional distress (Bhattacharya, 2012). Results of the Diabetes Attitude Wishes and Needs (DAWN) studies indicated that diabetes affects the well-being and psychological functioning of affected individuals (Funnell, Bootle, & Stuckey, 2015; Peyrot et al., 2005;). Stuckey et al. (2014) conducted the second DAWN study in 17 countries to explore the experiences, challenges, successes, and wishes of people living with diabetes. Participants in Stuckey et al.'s study reported anxiety, fear, and worry about diabetes complications, along with depression and a sense of hopelessness. Some participants also reported being discriminated against in the workplace (Stuckey et al., 2014). Participants in other studies have corroborated the feelings of emotional distress, depression, anxiety, and fear of complications reported by people living with diabetes (Fisher, Glasgow, & Strycker, 2010; Gask, Macdonald, & Bower, 2011; Bhattacharya, 2012; Funnell et al., 2015). The health, emotional, and social consequences of living with diabetes have far-reaching consequences on one's quality of life.

Like other chronic illnesses, diabetes is managed with medications and lifestyle modifications to maintain adequate glycemic control, reduce the risk of complications, and improve quality of life (WHO, 2016a). The above activities are at the jurisdiction of the affected individuals themselves. These individuals spend more than 90% of their time outside healthcare institutions, hence the need for self-management. Individuals with diabetes are expected to pay attention to their physical health and their psychosocial health to live well with their condition.

Self-Management: The Foundation of Diabetes Management

Many of the activities required in diabetes management entail individual behavioural and lifestyle changes. For instance, to manage their blood glucose levels, persons with T2DM must alter the quantity and quality of their dietary intake, strictly monitor their dietary intake, reduce weight, and be physically active. Persons with T2DM must also adhere to prescribed daily insulin injections or oral drugs, monitor and care for their feet, monitor blood glucose levels carefully, and use blood glucose results to regulate their diet, medication, and exercise (ADA, 2009; Canadian Diabetes Association [CDA], 2013; Chinenye et al., 2013). These activities help individuals maintain their blood glucose levels within acceptable limits, reduce the risk of complications, and improve the quality of life (WHO, 2016b). Management of diabetes entails lifestyle changes that can only be carried out by patients and their significant others. Therefore, self-management is recommended (Diabetes Canada, 2018)

Self-management is a daily active endeavour in which individuals manage their illness (Schulman-Green et al., 2012). Lorig and Holman (2003) and Bodenheimer, Lorig, Holman, and Grumbach (2002) argued that every individual employs self-management when they engage in behaviours that directly influence their disease outcome. Therefore, self-management is a lifelong task for individuals with chronic diseases such as diabetes because these decisions and actions impact one's health.

In its basic form, self-management refers to the day-to-day decisions and activities that help affected individuals and their significant others manage chronic conditions (Lorig & Holman, 2003). In a broader sense, self-management refers to the capacity of "the individual in conjunction with family, community and healthcare professionals to manage symptoms, treatment, lifestyle changes, and psychosocial, cultural and spiritual consequences of health conditions" (Wilkinson & Whitehead, 2009, p. 1145). Underlying this definition is the recognition that chronic illness is complex and that patients cannot effectively carry out self-management without education and professional and external support.

Self-management entails active clients' involvement in their disease management in collaboration with health professionals and social networks such as family, friends, support groups, and community resource centers. Members of these social networks help individuals manage the health, physical, social, and psychological consequences of living with chronic disease. A collaborative approach in which the healthcare system delivers ongoing support for people living with and managing their chronic conditions allows affected individuals to better manage chronic diseases (Pearce et al., 2016). In chronic illness, self-care management is inevitable because (a) affected individuals live with the condition for the rest of their lives, (b) they spend most of their time outside the healthcare system, and (c) self-management tasks entail personal activities such as diet regulation, physical exercise, and taking prescribed medications, which only affected individuals and their families can do.

Evolution of the Concept of Chronic Disease Self-Management

Two schools of thought on chronic illness management exist. These schools of thought represent two different paradigms: the traditional compliance model and the patient-professional partnership model (Bodenheimer et al., 2002).

The traditional compliance philosophy. Compliance entails patients' total obedience and submission to healthcare instructions (Chakrabarti, 2014). Compliance has been a component of the traditional medical model used in managing acute illnesses (Glasgow & Anderson, 1999; Anderson & Funnell, 2000). The concept of compliance was borne from the traditional view of HCP-patient relationships, which implies that many diseases and death were caused by acute illnesses (Glasgow & Anderson, 1999). The traditional compliance viewpoint emphasizes a paternalistic relationship between patients and HCPs. In the traditional compliance philosophy, HCPs are regarded as experts who develop the treatment plan and issue instructions to patients, whereas patients' role is to carry out instructions (Vermeire, Hearnshaw, Van Royen, & Denekens, 2001; Donovan, 1995).

HCPs later began to use the term *adherence* to show a form of agreement between HCPs and patients (Chakrabarti, 2014; Poupoulos, 2015). Adherence is defined as the extent to which a person's behaviour, including taking medication, following a diet, and executing lifestyle changes, corresponds to agreed recommendations (Chakrabarti, 2014). Unlike compliance, in which there is no involvement of patients in the treatment goal, adherence suggests a form of mutual understanding between the HCP and patient; thus, the patient is expected to abide by the plan or recommendations (Chakrabarti, 2014; Poupoulos, 2015). However, both adherence and compliance have been reported to be a poor fit for the management of chronic diseases such as diabetes, the management of which depends on an individual's self-care behaviour (Anderson, 1995; Anderson, Funnell, Barr, Dedrick, & Davis, 1991; Anderson & Funnell, 2000). The concepts of compliance and adherence suggest that HCPs have all the power and control and, therefore, can make healthcare decisions that patients will obey (Glasgow & Anderson, 1999). Secondly, these concepts assign blame to the patient (Duprez, Beeckman, Hecke, & Verhaeghe, 2020; Glasgow & Anderson, 1999). For instance, compliance and adherence suggest that a patient who does not meet specific parameters is not honest about their behaviour or lacks discipline. Patients with diabetes are not only required to take daily oral medications and insulin; patients are also expected to regulate their medications depending on the blood glucose results, type and quantity of food, and physical activity. The timing, frequency, and type of food consumed are also significant. Patients are required to observe and monitor themselves for hypoglycemia or hyperglycemia. Uncritical compliance with a medical prescription may prove harmful; for instance, individuals who take their prescribed insulin injection despite feeling signs of hypoglycemia may find themselves in jeopardy. Diabetes management requires patients to exercise judgment based on adequate knowledge (Funnell, 2016). Therefore, HCPs must implement a different kind of HCP-patient relationship and strategy in which patients are empowered to be actively involved in managing their condition.

Patient-professional partnership philosophy. The patient-professional partnership model is based on empowerment philosophy, which addresses the need for patients to assume control and manage their condition (Anderson, 1985; Anderson et al., 1991, 1995). Empowerment is based on three key aspects of chronic illness: choice, control, and consequences (Funnell & Anderson, 2004). The empowerment philosophy is based on three premises: (a) the daily decisions that persons with chronic disease make have more impact on their health than decisions made by HCPs, (b) individuals with chronic diseases have control over their self-care behaviours, and (c) the consequences of their daily decisions affect them directly; therefore, individuals with chronic disease have the right and responsibility to manage their disease (Funnell & Anderson, 2004; Funnell, 2016; Glasgow & Anderson, 1999). In the compliance-oriented approach, the patient is seen as the recipient of medical decisions and instructions. In contrast, the patient-professional model views patients as being responsible for their choices and decisions. The shift from the compliance-oriented approach to the patient-professional model signifies a movement from compliance and adherence to collaborative care or self-management (Glasgow & Anderson, 1999). In diabetes management, self-management is used to describe patients' daily behaviours to manage their diabetes. The patient-professional model recognizes that diabetes is a self-managed disease and emphasizes collaborative goal setting and ongoing SMS as essential elements of successful chronic disease management (Glasgow & Anderson, 1999; Wagner, 1995; Wagner et al., 2001).

SMS: A Priority for Effective Self-Management

SMS could be described as a structured way HCPs and the healthcare system help patients manage their health conditions (Pearce et al., 2016). In the Practical Reviews in SMS (PRISMS) Project, Pearce et al. (2016) identified 14 significant interventions that could be used to support self-management. Pearce et al. conducted quantitative and qualitative meta-reviews involving 102 systematic reviews that evaluated evidence on SMS for persons with different long-term conditions.

The PRISMS project components include the provision of the following:

1. Information about the disease condition and/or its management.
2. Information about available resources to assist in self-management.

3. Provision of and agreement on specific clinical action plans during an emergency.
4. Regular clinical review
5. Monitoring of conditions with feedback.
6. Practical support with medication adherence or behaviour change.
7. Provision of equipment to enable, assist, or promote self-monitoring.
8. Provision of easy access or advice or support when needed.
9. Training to communicate with HCPs.
10. Training for everyday activities.
11. Training and rehearsal for practical self-management activities.
12. Training for psychological strategies.
13. Facilitation of social support.
14. Provision of advice and support around health and lifestyle (Pearce et al., 2016).

In addition to the above, SMS interventions include indirect measures such as enabling HCPs or organizations to deliver the above components. Thus, SMS entails providing direct assistance to patients and their caregivers to enable patients to gain the knowledge, skills, and confidence to manage the physical and psychosocial aspects of their condition. SMS also involves indirect measures, such as preparing the healthcare team and equipping healthcare organizations with the requisite knowledge, expertise, and resources to support patients (Pearce et al., 2016). Similarly, Kawi (2012) described three primary attributes of SMS: (a) patient-centred, (b) HCPs' possession of requisite knowledge, skills, and attitudes, and (c) organizational support. Thus, SMS involves (a) a change from a disease-focused approach to patient-centred care, (b) a change in HCP role from that of a sole decision-maker to one of a facilitator who provides ongoing support and guidance to patients, and (c) making the necessary change in the organizational process and structure to accommodate the needs of patients with chronic illnesses.

Patient-centred care as an attribute of SMS. This patient-centred attribute consists of two related concepts: collaborative care and SME (Bodenheimer et al., 2002; Kawi, 2012). Collaborative care and SME are necessary for successful diabetes SMS.

HCP-patient collaboration in SMS. Collaborative care entails a relationship between the patient and HCP. Both act as different but equal partners, and each brings a form of expertise to bear. HCPs bring knowledge about the disease and its management to the table. In contrast, patients bring knowledge of self and how their body responds to interventions, as well as knowledge of their background, including their beliefs, culture, needs, and priorities (Bodenheimer et al., 2002). In collaborative care, both parties are involved in identifying problems and needs, decision-making, and goal setting. Patients' involvement in decision-making and goal setting regarding their disease management serves as intrinsic motivation for patients and ensures that patients' health and self-care needs are well represented (patient-centred care), enhances patients-HCP communication, provides higher patient satisfaction with care, and improves metabolic and psychosocial outcomes as well as emotional well-being (Franek, 2013). Living with a chronic illness is a complex trajectory in which individuals experience an interaction between their disease and their life context; such interaction may lead to changes in personal health, psychological, social, and spiritual position, which may affect one's self-management needs (Paterson, 2001). Some self-management needs are triggered by life-changing events that are common to all patients; however, other life events are unique to a subset of patients. Therefore, individual needs are better identified when patients are involved in their disease management through a partnership with HCPs.

HCPS and patients must foster a partnering relationship in which there is a mutual investment and shared decision-making to help patients make lifestyle changes and maintain healthy behaviours through SMS (Udlis, 2011). Within this partnership, HCPs and patients work together to identify patients' health problems, set priorities, establish goals, and create a treatment plan that is respectful of patients' knowledge and expertise and attentive to the personal and social context of patients' lives (Institute of Medicine [IOM], 2003).

In collaborative care, one's treatment plan and goals are mutually determined through shared decision-making among patients, families, HCPs, and collaborative goal setting. Collaborative care incorporates patients' needs and priorities; this differs from the acute care model, where decisions may not reflect actual patients' needs (Udlis, 2011). Empirical evidence has revealed that the patient-HCP partnership and collaborative goal setting in SMS are associated with increased competence in self-management among individuals with diabetes, trust in HCPs, improvements in HbA1C level, and increased self-efficacy (CDA, 2013; Chrvala et al., 2016; Lafata et al., 2013). Involving patients in decision-making is an effective SMS decision because it fosters a sense of responsibility and accountability in patients who manage their health and illness.

SME. SME is an essential aspect of SMS (Pearce et al., 2016). SME is a collaborative and ongoing process aimed to develop the knowledge and abilities required for successful self-management of diabetes (Haas et al., 2014). SME involves educational processes that provide persons with chronic illness with the "knowledge, skills, and motivation required to inform decisions and increase the individuals' capacity and confidence to apply these skills in daily life situations" (CDA, 2013, p. 26). SME goes beyond knowledge-based patient education to include psychological and behavioural interventions to improve patients' problem-solving skills and self-efficacy and support the application of knowledge in real-life situations (Bodenheimer et al., 2002).

SME incorporates various informative, interactive, and collaborative teaching tailored to the individual's specific needs (Fan & Sidani, 2009). For instance, information about diabetes and its management are provided and personalized through case scenarios and contexts in which this knowledge can be applied during SMS. HCPs also incorporate feedback from patients, expose patients to peers with similar problems, involve patients in identifying personal issues and self-care needs, and provide opportunities for patients to make decisions using the information provided. The content and skill-training components of SME are individualized according to the type of diabetes, recommended therapy, and the patients' ability, barriers, culture, literacy level, and available resources (Powers et al., 2016).

HCP attributes. HCPs have an essential role in the provision of SMS to assist in preparing patients for lifelong self-management (CDA, 2013; Kawi, 2012); therefore, HCPs' values, assumptions, and perspectives on self-management and SMS are essential.

In addition to providing medical care to patients with diabetes as a form of SMS, HCPs are expected to assume the role of teachers or coaches and help patients develop necessary skills and knowledge for their day-to-day self-management (Holman & Lorig, 2004). This position requires HCPs to possess the requisite knowledge and expertise to facilitate patients' self-management and behavioural change. HCPs are emerging from an era dominated by didactic, prescriptive education in which the HCP provided instruction to patients (Funnell & Anderson, 2003). This form of teaching does not suffice in supporting clients with chronic illness. A significant role of HCPs in chronic illness management is to help patients develop the necessary knowledge and gain skills and confidence for lifelong self-management of their disease. HCPs' insufficient understanding of what is expected of them, lack of competencies in effective communication and patient-centred care, and negative beliefs or poor attitudes about the notions of control, denial, and motivation can jeopardize patients' ability to effectively self-manage.

Fransen et al.'s (2015) qualitative design study explored the perceptions and strategies HCPs use to provide SMS for patients with low health literacy in Amsterdam. Fransen et al. found that participating HCPs (*n* = 9) viewed self-management as the patients' responsibility without acknowledging the role of HCPs. HCPs who participated in Fransen et al.'s study also assumed that patients with low health literacy were uninvolved, less motivated individuals who did not understand the importance of self-management. Consequently, some HCPs in the study gave up trying to provide any form of support to patients, whereas other HCPs provided didactic education that was merely repeated. As a result, patients' need for developing self-management skills was not met.

Similarly, Alvarez et al. (2016) conducted a web-based survey that explored 181 providers' beliefs about the importance of the patient's role in self-management. Alvarez et al. also explored how providers' beliefs about the patient's role related to the frequency in which providers reported engaging in collaborative and partnership-building behaviours with patients, as well as actual changes in patient activation measures. Alvarez et al. collected data through surveys and electronic medical records of 10,957 patients. The authors found that, compared to primary care providers (PCPs) with the lowest Clinician Support for Patient Activation Measure (CS-PAM) tercile scores, those in the highest tercile had two or more times the frequency of almost always involving patients in setting the agenda for a visit, checking patients' progress towards behavioural goals, asking about patients' preferences, restating treatment options, involving patients in planning how to manage their health, and talking to patients about what is expected from them as patients ($p < .001$) and expectations from providers ($p < .05$). Providers' CS-PAM scores were also related to the frequency of SMS. PCPs in the highest tercile of CS-PAM were six times as likely as those in the lowest tercile to report "very often" in regard to bringing the patient back for multiple visits ($p < .01$) and working with patients to jointly set goals and problem-solve to overcome barriers ($p < .01$). The CS-PAM was also strongly related to PCPs reporting "very often" in regard to supporting the patient to focus on their individual goals ($p < .01$), having difficult conversations with the patient about their behaviour ($p < .001$), and providing the patient with detailed after-visit summaries and attempting not to overwhelm the patient with too many recommendations ($p < 0.001$). Alvarez et al.'s analysis of the CS-PAM's relationship to change in PCPs' patient panel CS-PAM scores revealed a moderately positive correlation. HCPs' beliefs, knowledge, assumptions about patients, and the concept of self-management and SMS influence the type of care HCPs offer. Alvarez et al.'s findings highlight the need to educate HCPs on SMS and SMS strategies appropriately. In addition to the patient-centred and HCP attributes, organizational support is a crucial component of SMS.

Organizational support as an attribute of SMS. To successfully provide SMS, HCPs use an organizational process that honours individuals' perspectives on their health, removes barriers to SMS, adopts processes that include teaching people the skills to manage their condition, and encourages collaboration between patients and HCPs (Kawi, 2012; Pearce et al., 2016; Wagner et al., 2001). The lack of organizational support is a significant factor in clinicians' experiences of SMS (Crespo & Shrewsberry, 2007; Dube et al., 2017; Elissen et al., 2013; NHS England, 2015). Lack of time and expertise and inadequate resources are some of the organizational factors cited as barriers to SMS. Crespo and Shrewsberry (2007) explored factors that contributed to the implementation of a comprehensive self-management program in primary care in four rural health centers in medically underserved areas in the United States. Crespo and Shrewsberry interviewed key informants from the four health centers after 6 months and 9 months to document the implementation process. Crespo and Shrewsberry found that management support was the primary factor that differentiated primary care centers that implemented SMS programs from those that did not. For instance, the CEOs of the clinics that completed the implementation of the SMS programs were part of the initial decision to adopt the program and ensured that initiation of the program was on the agenda of every meeting. In contrast, the other two health centers that did not complete the program implementation experienced a change in leadership, resulting in the staff members' reluctance to initiate change without a leader in place. The health centers that implemented the SMS program sponsored the training of clinic staff on SMS. This SMS training raised the clinic staff's awareness of self-management and their consciousness of engaging patients in self-management. Specific SMS roles were designated to staff; these strategies were not in place in the other two health centers that did not fully implement the SMS program. Crespo and Shrewsberry's study revealed that SMS is more effective when management provides direction and required resources.

Barriers to SMS

Barriers to SMS include HCP factors, organizational factors, and patient-related factors. HCP factors include a lack of understanding of the concept of SMS, inadequate skills in patient-centred care, and doubts about the effectiveness and sustainability of SMS (Angwenyi, Aantjes, Bunders-Aelen, Lazarus, & Criel, 2019; Johnson, Liddy, & Ives, 2011; NHS England, 2015; Mogre, Johnson, Tzelepis, & Paul, 2019). Physicians sometimes lack trust in other health professionals' competency, which limits interprofessional collaboration. HCPs also sometimes express frustration and aggression towards nonadherent patients or blame patients for their noncompliant behaviour (Abdulhadi, Al-Shafaee, Wahlstrom, & Hjelm, 2013; Duprez et al., 2020; Watermeyer, Hume, Seabi, & Pauly, 2019). HCPs' aggression and poor attitude towards patients who are regarded as nonadherent breeds tension in the HCPs-patient relationship and limits the open communication required for effective SMS. Other barriers shared among nurses and other HCPs include lack of time and motivation, shortage of HCPs such as dietitians and diabetes educators, and lack of knowledge and skill to provide SMS (Abdulhadi et al., 2013; Franklin, Lewis, Willis, Bourke-Taylor, & Smith, 2017; Fransen et al., 2015; Gravel, Legare, & Graham, 2006). Murphy et al. (2015) studied care and motivation experiences among 22 patients attending three different community health centers in Cape Town, South Africa. Murphy et al. reported poor communication between HCPs and patients, lack of empathy, and constant patient blaming for not carrying out HCP recommendations. Murphy et al. also found a lack of emotional support; some providers were rude and impatient and patients were not involved in treatment decision-making. Additionally, the HCPs observed by Murphy et al. did not provide patients with detailed information regarding their disease and its management. Hence, patients experienced anxiety and uncertainty and were ill-prepared to play an active role in their disease management. Dube et al.'s (2017) qualitative study also revealed poor communication skills and lack of confidentiality among HCPs.

Organizational factors that hinder SMS include high workload, poor teamwork, lack of specialized training for HCPs, bureaucracy, shortage of staff to provide SMS (Abrahams, Gilson, Levitt & Dave, 2019; Abdulhadi et al., 2013), lack of time to engage in patient-centred care, lack of resources such as educational materials and technology, and lack of support services (Crespo

& Shrewsberry, 2007; Elissen et al., 2013; Murphy et al., 2015; NHS England, 2015). Other factors include weak healthcare systems—which are often seen in low resource settings such as Nigeria and other African countries—characterized by inadequate financing and lack of requisite expertise and resources to support patients (Abrahams et al., 2019; Atun et al., 2017; de-Graft Aikins, Boynton, & Atanga, 2010; Fasanmade & Dagogo-Jack, 2015;). Dube et al. (2017) noted the unavailability of prescribed medications, long waiting times, overcrowded clinics, and unavailability of patient educational materials as challenges in providing care to patients in a health facility in South Africa.

Patient-related factors that act as barriers to SMS include the level of motivation, illness perception, and inadequate knowledge and skill to effectively self-manage (Abdulrehman, Woith, Jenkins, Kossman, & Hunter, 2016; Adejoh, 2014; Bos-Touwen, Trappenburg, Wulp, Scuurmans, & de-Wit, 2017). Bos-Touwen et al. (2017) found that HCPs were not likely to go the extra mile in providing SMS for unmotivated patients. Similarly, NHS England (2015) reported that clinicians alter their approach to SMS according to a patient's level of skill and confidence. This finding could explain the link between patients' level of education and self-management. HCPs often spend more time providing SMS to educated patients, thereby further strengthening their knowledge and self-management skills. However, patients with lower education and confidence levels may not get as much support. Abdulhadi et al. (2013) qualitatively explored primary HCPs' experiences of providing care to persons with T2DM in the Middle East. HCPs who participated in Abdulhadi et al.'s study reported that many patients were unwilling to modify their diet and had fatalistic beliefs and feelings of stigma about diabetes. Participants also shared that patients refused to accept insulin due to the belief that insulin signified that death was imminent. The patients observed in Abdulhadi et al.'s study could be classified as having poor illness perceptions and low levels of motivation to change; therefore, HCPs found it challenging to support such patients.

SMS is a structured means of assisting patients to learn to manage their chronic conditions through education and other interventions tailored towards identifying and navigating patients' needs and hindrances to self-management (Powers et al., 2016). Essential attributes of SMS include patient-centred care, availability of HCPs with requisite knowledge and expertise to facilitate patients' self-management, and an organizational structure that supports self-management (Kawi, 2012). Factors that hinder HCPs' ability to provide SMS include HCPs' lack of essential skills or knowledge of SMS. This lack of skill or knowledge results in a lack of expertise and poor attitude towards patients, absence of essential resources to support SMS, and poor teamwork (Abrahams et al., 2019; Angwenyi et al., 2018; Dube et al., 2017; Murphy et al., 2015; Watermeyer et al., 2019). Barriers to SMS among patients include poverty, inadequate knowledge and skills to effectively self-manage, and different cultural beliefs and practices that impact patients' willingness to change (Adejumo et al., 2015; Adisa et al., 2009; Watermeyer et al., 2019).

Cultural Applicability of Self-Management and SMS

Scholars have questioned the applicability of self-management and SMS in contexts where individualism, self-reliance, and independence are not valued (Redman, 2007; Thirsk & Clark, 2013, Wilkinson & Whitehead, 2009). In such cultures, important decisions—including healthcare decisions—may be significantly influenced by an individual's family members. Family members' opinions could influence the degree to which one can manage his or her illness. Families have both a supportive and inhibitory influence on self-management (Abdulrehman et al., 2016; Ojewale, Oluwatosin, Fasanmade, & Odusan, 2018; Okolie, Ehiemere, Ezenduka, & Ogbu, 2010; Sule, 2013). For example, family members may help detect signs of hypoglycemia or hyperglycemia even when the person living with the disease is not aware. Family members also provide emotional and financial support (Abdulrehman et al., 2016; Sule, 2013). Sule (2013) studied a group of people from the southeastern part of Nigeria to determine the health beliefs and related health practices related to self-management of T2DM. Sule found that families take in members with disabilities and become voluntarily responsible for most of the family member's self-management tasks, such as diet management, helping with insulin administration, bearing the cost of treatment, encouraging the family member to take prescribed drugs, and participating in hospital visits. Family involvement is valuable, especially in contexts where individuals do not have adequate social safety nets or systems to provide social or economic support. Family members also play a crucial role in decision-making regarding which form of healthcare patients should seek. Participants in Sule's study spoke about the need to involve family members in decision-making.

On the other hand, differences in beliefs between patients and family members could cause problems. For example, family members who have different ideas regarding the disease can unduly influence patients by withdrawing needed support or discouraging patients trying to come to terms with their condition. In some cultures, family members play a significant role in meal planning; thus, this self-management task could be adversely affected if family members are not inclined to accommodate the person with the disease. This attitude is likely if HCPs do not include the family member in dietary discussions. Families may also be overprotective and interfere in the experiential process (trial and error) needed for patients to develop expertise in their disease management (Okolie et al., 2010; Paterson & Thorne, 2000).

Others have argued that the concept of self-management as an individual's ability and responsibility to assume control of their disease management obscures the influence of factors outside the individual's control that constrain an individual's capacity to efficiently manage his or her disease (Redman, 2007). For instance, up to 80% of the Nigerian population has no form of health insurance (Fasanmade & Dagogo-Jack, 2015). More than half of the Nigerian population lives in extreme poverty, described as living on less than $1.90 per day (CNN, 2018). These statistics indicate that more than half of the people with diabetes in Nigeria cannot afford prescription drugs and hospital bills related to their disease management.

Inability to afford medical treatment is a hindrance to SMS. The majority of the Nigerian population lack health insurance; thus, the effects of poverty are enhanced. Poverty is a significant impediment to chronic disease self-management, as is demonstrated by different studies conducted in Africa (Adejumo et al., 2015; Adesina et al., 2012; Adisa et al., 2009; Chinenye & Young, 2011; Fasanmade & Dagogo-Jack, 2015; Oputa & Chinenye, 2015; Yusuff et al., 2008). Poverty affects individuals' ability to afford prescription drugs and diagnostic equipment such as glucometers, which are essential for good disease outcome. Often, patients who lack funds demonstrate poor medication self-management through selective purchasing of medications or not taking medications as prescribed. Patients' inability to procure needed drugs or monitor blood glucose is the primary reason patients go to traditional healers (de-Graft Aikins, 2005). For instance, de-Graft Aikins (2005) found that many study participants preferred biomedical treatment but were forced to seek alternative care due to the overwhelming cost of medical treatment. Potential opportunities for interacting with HCPs and consequent SMS are lost when individuals with diabetes do not attend follow-up visits due to lack of funds.

The above arguments regarding self-management constraints related to societal poverty and other systemic influences might suggest that persons in low-resource developing countries cannot self-manage. However, living with a chronic illness means that people must self-manage their chronic condition despite their geographical location and personal circumstances. Fundamentally, an individual's responsibility in diabetes management is "inescapable, non-negotiable and cannot be shared" (Anderson & Funnell, 2000, p. 599). If not well managed, T2DM exposes one to devastating health consequences such as blindness, kidney failure, stroke, and death (WHO, 2016a).

Wagner et al. (2001) likened the experience of living with a chronic illness such as diabetes to a metaphor in which an individual must learn to pilot their plane while the primary pilot and instructor (HCP) are absent for more than 90% of the journey. Therefore, HCPs must ensure that every component of the flight is safe, including ensuring skilled copilots (knowledgeable, skilled, and motivated patients who could carry out their responsibilities), safe planes (regular follow-up, appropriate medications, and safe blood glucose testing tools), and good air traffic control surveillance (partnering with patients to develop a realistic diabetes management plan and helping patients reflect on their situations, needs, and priorities) so that patients can make informed choices while striving to reach their health goals (Anderson & Funnell, 2000; Wagner et al., 2001). However, people from disadvantaged socioeconomic groups may have a limited capacity to self-manage due to a range of socially determined factors; therefore, HCPs must include other social and cultural resources that could enhance an individual's ability to manage their condition safely. SMS interventions that attend to the patients' culture and everyday circumstances lead to better diabetes health outcomes (Page-Reeves et al., 2017).

Rather than focusing on the disease and providing universal measures, HCPs who implement SMS focus on the patient and their needs to identify specific individual or sociocultural challenges and devise a plan that addresses those needs (Powers et al., 2016). SMS is tailored to patients' unique situations, including patients' abilities, preferences, values, goals, barriers, culture, literacy level, and available resources (Rosal et al., 2011; Williams, Walker, Hill, & Egede, 2016). HCPs implementing SMS make an effort to harness available resources such as family and peers while modifying other resources. Consequently, self-management and SMS can potentially be applied in all settings, including in Nigeria. To provide useful guidance and support, HCPs must understand the context in which patients live. Also, HCPs must understand and appreciate the values and principles of SMS. Decision-makers must understand HCPs' experiences with providing care to patients with diabetes to identify barriers to care and aspects of care that must be modified to provide more useful interventions that can be adjusted depending on a patient's specific context.

Chronic Disease Management in Nigeria

For many decades, people in Nigeria and other parts of Africa laboured under the yoke of infectious diseases and other potentially curable acute diseases (Atun et al., 2017). These diseases accounted for the vast majority of morbidity and mortality suffered among the African population. Consequently, disease prevention and treatment efforts inevitably focused on the acute and infectious diseases such as HIV/AIDS, lower respiratory infections, diarrheal diseases, malaria, and vaccine-preventable diseases such as tuberculosis (Atun et al., 2017).

However, the burden of chronic diseases in Africa has increased significantly over the last few decades (Atun et al., 2017; de-Graft Aikins et al., 2010; Fasanmade & Dagogo-Jack, 2015). The rate of chronic diseases such as diabetes, hypertension, cardiovascular diseases, and cancer has increased. For example, 3,000,000 Africans were reported to be living with diabetes in 1994; this number rose to 7.1 million by 2000 (Sobngwi, Mauvais-Jarvis, Vexian, Mbanya, & Grautier, 2001). In 2015, 14,000,000 Africans were reported to be living with diabetes, with this figure is projected to reach 34,000,000 by 2040 (IDF, 2015).

Chronic diseases such as diabetes are a leading cause of death and disability in Africa. Currently, 80% of the total deaths in low and middle-income countries—of which countries in Africa constitute a significant proportion (WHO, n.d.)—are due to chronic illnesses. Poor glycemic control is reported among more than 50% of persons living with diabetes (Chinenye & Young, 2011). The underlying causes of poor glycemic control—such as inadequate knowledge of the disease and its management, cultural beliefs, poverty, and lack of access to health care—have also been widely documented (Fasanmade & Dagogo-Jack, 2015). Little improvement is evident despite awareness of the above factors. WHO (2016a, n.d.) has projected further increases in mortality and morbidity in low and middle-income countries by 2030. Global increases in mortality and morbidity have been attributed to poor health care, the deficit between local standards of care and recommended practice and HCPs' lack of knowledge and skills.

Lack of access to healthcare is a significant problem facing people in Africa (Manne-Goehler et al., 2016). Healthcare systems in many parts of Africa are weak and not fully equipped for managing chronic illnesses due to human resource constraints and an overconcentration of resources to other programs (Atun et al., 2017; de-Graft Aikins et al., 2010; Fasanmade & Dagogo-Jack, 2015). Healthcare systems in Africa and some other low and middle-income countries still have an acute-illness orientation, and clinicians are challenged in accommodating the increased burden of chronic illness (Ku & Kegels, 2015).

Nigeria does not have universal health insurance; available health insurance includes the National Health Insurance Scheme (NHIS) and private insurance programs, which cover less than 10% of the general population (Fasanmade & Dagogo-Jack, 2015). Available insurance programs in Nigeria cover federal government workers, their families, and people who work with the organized private sector. For the rest of the population, diabetes treatment costs are borne by individuals and their families through out-of-pocket payment, which exposes individuals to further hardship (Fadare, Olamoyegun, & Gbadegesin, 2015; Okoronkwo, Ekpemiro, Owor, Okpala, & Adeyemo, 2015). Okoronkwo et al. (2015) conducted a descriptive survey in which 129 persons with T2DM were recruited from a tertiary health institution in the southeastern part of Nigeria and studied to assess the magnitude of the economic burden of managing their diabetes. Okoronkwo et al. found that low-income persons living with diabetes in Nigeria spent at least 40% of their income on their diabetes management. The percentage of expenditure was higher among people who fell within the lowest socioeconomic status. Okoronkwo et al.'s study confirmed Nwosu et al.'s (2015) prior study findings. Nwosu et al. conducted a descriptive survey to determine the socioeconomic impact of diabetes among 1,444 persons with diabetes in Imo state, Nigeria. Nwosu et al. found that 30% to 45% of their participants earned between ₦20,000 ($72) and ₦40,000 ($145) monthly. The management of diabetes costs was ₦20,000 ($72) in uncomplicated cases and ₦29,000 ($105) for those with complications. The above findings have dire consequences for most persons with diabetes who must buy their medications and consult with their HCPs while fulfilling other obligations of daily living.

Evidence-informed and effective approaches for chronic illness management developed in wealthy developed nations fundamentally differ from acute, disease-focused approaches. For example, unlike acute disease management, chronic disease care incorporates a focus on disability limitations and attention to the psychosocial aspects of the patient, as well as educating and enabling patients to actively take control of their health (Funnell, 2016; Galdas et al., 2015; Hecke et al., 2016).

SMS in Nigerian Hospitals and Implications.

Significant factors that affect self-management in Nigeria include patients' poor knowledge of diabetes and lack of self-management skills. It is not clear whether DSME programs are available in Nigeria. The current programs that exist are comprised of ad-hoc didactic education given in some diabetes clinics in Nigeria, sometimes as part of a research study (Afemikhe & Chipps, 2015; Essien et al., 2017; Fasanmade & Dagogo-Jack, 2015). Essien et al. (2017) conducted an RCT at the University of Calabar Teaching Hospital Calabar to determine whether an intensive and systematic DSME program would improve glycemic control compared to existing ad-hoc patient education. Essien et al. found a statistical and clinical difference between the two groups, with those in the intensive group having -1.8% (HbA1C) point lower than conventional patients. Essien et al.'s study demonstrates researchers' budding interest in SMS; however, it is unclear if DSME has been implemented or sustained across most healthcare institutions in Nigeria.

HCPs have a new and unique role in providing ongoing SMS for persons living with chronic illnesses in Nigeria. HCPs' lack of understanding of what is expected of them, lack of competencies in effective communication and patient-centred care, negative beliefs, and poor attitude jeopardizes patients' ability to effectively self-manage (Dube et al., 2017; Fransen et al., 2015; Murphy et al., 2015). How can we expect patients to learn to initiate and sustain good self-management practices without adequate SMS from knowledgeable and skilled HCPs?

Falayi, Adeoye, Adedokun, and Fasanmade (2018) investigated patients' evaluation of the quality of diabetes care in a descriptive cross-sectional study. The study involved 384 patients with diabetes recruited from three outpatient clinics (government, private, and mission-owned hospitals) in Ibadan, Nigeria. Overall, 52% of respondents rated the quality of care as good, whereas 48% perceived the quality of care as poor. However, in evaluating the different items, 63% of the participants rated the opportunity to be part of their treatment decisions as poor. Falayi et al. noted that patients from the private hospital were about 20 times more likely to perceive the quality as good. Although it is encouraging that participants in this study found their care to be satisfactory, it is essential to note that some factors may have affected the result. Private hospitals are more attuned to customer satisfaction. Therefore, HCPs in private hospitals are more inclined to want to meet the needs of their patients in order to maintain their customer base. However, most people with diabetes do not seek care in private hospitals due to cost. Falayi et al.'s evaluation of the quality of diabetes care was measured on a 3-point scale of 1 (poor), 2 (fair), and 3 (good). Patients may have evaluated their care based on their limited understanding of what is ideal. Therefore, the rating of the quality of care received as good by participants may not be a true reflection of the quality of SMS services provided by HCPs.

The concept of self-management has ethical implications where persons with diabetes are expected to adequately self-manage without first removing obstacles posed by the societal, economic, and political structures that impact their ability or capacity to successfully self-manage (Dwarswaard & van de Bovenkamp, 2015; Wilkinson & Whitehead, 2009). The expectation that individuals with diabetes in Nigeria will effectively manage their diabetes despite the lack of adequate SMS, skills training, and human and material resources within and outside the healthcare system also raises questions. Patients who lack education or other forms of support are limited in managing their disease efficiently. Patients require a range of resources to successfully self-manage; these resources include funds to obtain necessary drugs and test kits and pay for healthcare (Udlis, 2011). Global research evidence strongly indicates that people need continuing just-in-time education to link a diabetes scenario with interventions that work for the individual. This continuing education is more effective than one-time intensive and longer education programmes (Sperl-Hillen et al., 2013; Worswick et al., 2013); thus, it is interesting that Nigerian HCPs and health researchers have failed to focus on the role of HCPs in SMS. Instead, Nigerians HCPs and researchers have entirely focused on the inability of patients to work towards treatment adherence because patients do not have an adequate understanding of diabetes or insight into their own lifestyle habits that impact diabetes or support from family (Adejoh, 2014; Adejumo et al., 2015; Yusuff et al., 2008).

Some studies on the experiences of individuals with diabetes in Africa show that HCPs provide inadequate support (Dube et al., 2017; Murphy et al., 2015). In Nigeria—besides studies that compared structured DSME to usual care (Afemikhe & Chipps, 2015; Essien et al., 2017)—no study has shed light on what practices constitute diabetes SMS and what patients appreciated or found helpful. Current HCPs' experiences and practices of SMS for persons with diabetes may be examined to identify peculiar challenges for HCPs in Nigeria, determine how to develop support practices for people living with T2DM in Nigeria, and determine how to improve diabetes outcomes. Such support practices should consider the general Nigerian sociocultural context and be tailored to the specific needs of patients residing in this region.

Summary

This chapter detailed the essential concepts in self-management and SMS in the context of diabetes. Substantial gains have been made in understanding the manifestation and consequences of diabetes for Nigerian people; however, significant gaps remain. This review of different research studies of diabetes in Africa revealed the widespread poor knowledge of the disease and self-management. Inadequate glycemic control is recorded in most persons living with diabetes in various settings (Camara et al., 2015; Chinenye & Young, 2011; Fasanmade & Dagogo-Jack, 2015; Yusuff et al., 2008). Poor glycemic control is attributed to poverty, low level of education, poor health literacy, and cultural beliefs and practices that differ from the biomedical norm; these findings reverberated in almost all studies of diabetes in Nigeria. Belief in the supernatural causal theory of chronic illness and lack of understanding of the concept of chronicity has also been reported by some authors (Adejumo et al., 2015; Oputa & Chinenye, 2015; Popoola, 2005; Sule, 2013). Poor DSM, inadequate glycemic control, and consequent increased morbidity and mortality have enormous implications for individuals and families, the Nigerian healthcare system, and Nigeria as a nation.

Many of the barriers to self-management are modifiable. For example, what is perceived as poor knowledge of diabetes and poor self-management resulting from ignorance, low level of education, low health literacy, and different cultural beliefs and practices could be addressed to some extent through continued culturally sensitive SMS. SMS is patient-centred and should provide education and skills training tailored to patients' literacy level, level of education, and culture (American Association of Diabetes Educators [AADE], 2015; Haas et al., 2014). HCPs could collaborate with patients to identify and navigate opposing cultural or religious beliefs and practices.

In Nigeria, many of the self-management studies have focused on patients' knowledge of diabetes, level of glycemic control, patients' level of adherence to the treatment regimen, and prevalence of complications. These studies revealed that poor glycemic control, poor understanding of diabetes, and poor self-management were universal among most patients.

SMS is a prerequisite for effective self-management; thus, it is essential to examine how patients are prepared for effective self-management to gain more insight into the problem of poor glycemic control and high rates of complications among persons with diabetes in Nigeria. Few studies have focused on HCPs. Studies outside of Nigeria have shown that HCPs' perspectives (knowledge, experience, values, and beliefs) on self-management and SMS directly influence the care that HCPs provide (Alvarez et al., 2016; NHS England, 2015). One must understand the nature of support available for persons with diabetes and HCPs' underlying perceptions to fully explore the problem of poor self-management of diabetes in Nigeria. Thus, this study filled the literature gap by exploring Nigerian HCPs' perspectives, experiences, and practices of diabetes SMS.

Chapter 3

Methods

Chapter 3: Methods

I provide details of the study approach in this chapter. I begin with a description of the study methodology and its philosophical underpinnings. I then discuss the methodological principles that guided this research study. Following that, I outline the study setting, sampling and recruitment strategies, data generation and analysis processes, the approaches used to ensure rigour, and the ethical principles that guided this study.

Design

I used an interpretive description (ID) design in this study. ID is an applied qualitative research approach first described by Thorne, Kirkham, and MacDonald-Emes (1997). ID is used to identify patterns and themes within subjective perceptions and generate an explanation capable of informing clinical practice (Thorne, 2008a).

The foundation of ID is related to the tensions that arose due to the misalignment between nursing knowledge and the epistemological basis of the existing qualitative research methodologies in the 1990s. The traditional qualitative methodologies (phenomenology, grounded theory, and ethnography) commonly employed in nursing and health science research were developed within philosophy and social sciences. The focus of these methodologies addressed theoretical and empirical problems of the social sciences versus the practical issues and concerns of applied practice disciplines, such as nursing (Thorne, 2008b; Thorne, Kirkham, & O'Flynn-Magee, 2004). Many researchers found they could not produce research that had validity and transferability for their disciplinary audience without breaching the rigid principles that guided those methods. For instance, some phenomenological approaches assume that the researcher's prior experiences and knowledge should be bracketed to preserve the unimpaired interpretation. In contrast, in ID, the researcher's experience and knowledge are essential for analysis and interpretation. Nursing research, therefore, warranted that prior experiences (including theoretical and clinical knowledge) are not disregarded but instead used as an analytical forestructure to guide initial research design while remaining open to being challenged or modified as the study progresses (Thorne, 2016). The conflict between the methodological rules made by different qualitative research approaches and the nature of nursing knowledge created an immense need for an applied qualitative research approach that would provide a greater understanding of the complex experiential clinical phenomena occurring in healthcare (Thorne, 2008a; Thorne & Sawatzky, 2007). ID was developed to meet such needs.

Philosophical Underpinnings of ID

ID studies are conducted in a naturalistic context (Thorne, 2016) with an understanding that background is essential to understanding human behaviour and that acquiring knowledge of human experience outside of its context is not possible (Patton, 2015). ID is used to explore human commonalities and individual expressions of variance within a shared focus of interest; this method aligns with the nursing core epistemological focus of seeking knowledge in the general and unique context of the individual (Thorne, Stephens, & Truant, 2016).

Epistemologically, researchers using ID assume that truth is subjective, and that reality is created through peoples' interactions with the world rather than being objective or discovered (Scotland, 2012). Therefore, researchers using ID recognize that knowledge development is a coconstruction of findings through a transactional relationship between a study's researcher and participants (Thorne, 2016; Thorne et al., 2004). The researcher must interact with study participants throughout the research process to access the multiple views of reality. In ID, the researcher believes that the knower and the known are inseparable; hence, the researcher and the object of inquiry interact to influence one another (Thorne, 2016). As such, ID requires the researcher to explicitly identify the disciplinary framework and its associated assumptions for the audience to access the interior logic that guided the design choices made.

The Rationale for Choice of ID

The purpose of this study was to explore Nigerian HCPs' perspectives, experiences, and practices of SMS. A qualitative approach is useful in eliciting perspectives, beliefs, actions, behaviours, and the complexities of the human experience (Morse, 2012). This study aimed to inform SMS practices for HCPs working with persons with T2DM in Nigeria. ID is practice-focused and facilitates a process of shared interpretation between the researcher and participants while also acknowledging and situating the experience within the broader macro and microlevel structures and processes (Thorne, 2016). I used ID to understand the shared and unique perspectives of the individual HCPs in this study and the micro and macroelements of the culture in which these experiences were situated. My rationale for choosing ID lies in the design's flexibility. ID is beneficial to the audience and is consistent with the type of knowledge that I sought. Furthermore, ID is used to solve practical problems and is aligned with nursing logic. Thus, the ID design provides researchers with the freedom to use available data that correlates with the disciplinary focus to meet a study's purpose (Thorne, 2016).

Furthermore, ID involves acknowledging both formal and informal bodies of knowledge that the researcher brings into the study. The consolidation of formal and informal knowledge "orients the inquiry provides a rationale for its projected boundaries and makes obvious the theoretical assumptions, biases, and preconceptions" (Thorne et al., 1997, p. 173). The informal knowledge that I used in this study included my personal and professional knowledge and experience. Such experientially derived knowledge provided a beginning point that oriented the research rather than an overarching organizational structure; this initial knowledge and experience were challenged as the study progressed. I used clinical experience (informal body of knowledge) as a component of the theoretical fore structure to recognize other ways of knowing recognized in nursing, such as experience and intuition (Carper, 1978). Prior clinical experiences were particularly essential for this study due to the scarcity of research studies on SMS for persons with T2DM in Nigeria. Acceptance of clinical experience exposes areas where real problems exist and could potentially bridge the gap between theory and practice by providing useful knowledge that could be used to inform practice. Lastly, I chose ID because it is a nursing methodology designed for nurses by nurses to guide nursing research (Thorne, 2008a); my use of ID will make ID open to further refinement as a tool for applied health research.

Scaffolding of Theoretical and Personal Assumptions

Thorne (2016) advised scaffolding a study, which entails setting up the initial position on which to build the research design plan. To successfully frame a study, researchers must clarify the intellectual stance they bring into the study and the assumptions underlying such positioning. Two primary ways to frame a study include:

1. Reviewing the literature (situating the study).
2. Disclosure of preconceived assumptions (Thorne, 2016).

Critical elements to the theoretical fore structure include acknowledging one's theoretical framework upon entering the study, recognizing the disciplinary focus, and recognizing one's personal biases and assumptions (Thorne, 2008a, 2016).

Situating the study. The review of the literature on DSM and SMS globally and in Nigeria provided the full scope of the problem and offered insight into aspects of the phenomenon that have been studied as well as gaps in knowledge. The aim of a good literature review is to present a credible argument that proves that further research is needed in an area of interest and that research using the proposed approach made a valuable contribution (Thorne, 2016). The concepts of SMS and culture provided the theoretical fore structure of this study. This study's focus was on Nigerian HCPs' perspectives and experiences of SMS for persons with T2DM; however, I also examined how the social and cultural context in which my study participants practiced moulded their SMS practices.

Culture is the way of life of people. Culture is the collection of knowledge, beliefs, customs, ideas, habits, and practices that humans learn, share and transmit across generations (Jayasuriya, 2008). SMS is influenced by what the biomedical culture specifies as expected behaviour and rules concerning SMS and how it should be practiced (Pearce et al., 2016; Wagner et al., 2001). Social, financial, and political structures along with values, beliefs, and cultural practices also influence how SMS is perceived and practiced. I aimed to explore SMS experiences and the factors that affected the provision of SMS within the context of Nigeria. I conducted and presented an extensive review of the empirical and theoretical knowledge in Chapter 2. The literature review provided the structural framework or scaffold for this research and the inspiration and motivation for the study's design.

Disclosure of a priori assumptions. The second critical element in the scaffolding of this ID study involved articulating the disciplinary perspective I brought to the study and acknowledging my preconceived personal assumptions, beliefs, and ideas about the phenomenon before beginning the research (Thorne, 2008a). The researcher's role is pivotal; thus, it is vital to understand and acknowledge the theoretical and practical knowledge the researcher brings to the study and how this knowledge builds the platform for the research design. Like other qualitative research approaches, the researcher serves as the research instrument within ID; hence, the researcher's thinking and action impact the nature, process, and outcome of a study (Thorne, 2016). Researchers determine what constitutes data and determine which data to present as study findings (Thorne, 2008a).

Furthermore, researchers evaluate the viewpoints of others using their personal and disciplinary lens. Clarifying the theoretical fore structure entails that the researcher accounts for aspects of themselves and acknowledge the thoughts they bring to the study. Clarifying the theoretical fore structure also requires that the researcher's disciplinary orientation is made explicit. The researcher should document any ideas, thoughts, perspectives, or personal experiences that may influence the angle of vision that they are taking into a study to ensure the effects of these perspectives are appropriately accounted for (Thorne, 2016). Thorne (2016) posited that the researcher should assume a position that acknowledges their motivations, biases, and approach to interpretive inquiry.

I am a Nigerian registered nurse. I have worked in different areas of nursing for over 15 years, including as a staff nurse in different hospitals, as an occupational health nurse, a clinical instructor, and finally, as an assistant lecturer in a department of nursing. In this study, I consider myself an insider because I am a Nigerian registered nurse and have worked as a registered nurse in similar hospitals in Nigeria. I am of the Igbo tribe, and I am familiar with many of the cultural beliefs and practices common among Igbos. I am also a Christian and uphold the values of Christianity.

My interactions with many patients with diabetes in Nigeria have revealed widespread poor knowledge of the disease and poor self-management. I have also seen many patients develop avoidable complications such as foot and leg gangrene, stroke, and even death stemming from inadequate self-management.

One of the experiences I had with a patient with diabetes stood out. During one of my clinical supervisions of nursing students, I met a woman whose wound was being dressed after a recent lower limb amputation following complications from T2DM. The patient called me aside and wanted to know what to do to avoid losing the other leg. She explained how she had lost much weight, was always hungry, and how her children did not allow her to eat all the types of food that she usually liked. She went on, "If I want to eat rice, they will say no, fufu, no, yam no, I do not know what to do, please could you wait and talk to them? I do not know what to do." It was the sense of desperation, fear, and helplessness that I saw in her eyes and her voice that I remembered when I embarked on this research journey.

I began my doctoral journey already knowing that my study would focus on diabetes because of my numerous experiences taking care of patients with diabetes. I wanted to focus on patients because I had observed some of them struggle with their disease management, with many ending up with complications. My clinical experience was limited to inpatient care, and I was unsure what happened at the diabetes clinic because I had not worked there. Moreover, I was a novice researcher. As I progressed through my doctoral program, I completed a course on "living with chronicity," which was a game-changer. The course opened my eyes to what it means to have and live with a chronic illness, and I became even more passionate about my study.

Before I wrote my proposal, my supervisors suggested that I visit one of my study sites to shadow HCPs and see what goes on at the clinic. I shadowed HCPs for 12 weeks. During those times, the lack of knowledge, confusion, fear, and uncertainty among patients became even more apparent. I was journaling and reviewing literature during this time. My focus had remained on patients until my supervisors suggested, after reading my journals, that perhaps I would need to focus on HCPs instead. This suggestion to concentrate on HCPs made perfect sense and resonated with my observations. I observed a profound lack of knowledge among patients, poor self-management, and a sense of helplessness. To find out why patients had such a poor understanding of their condition and poor self-management, I decided that it made sense to look at what happened at the clinic and how patients were educated or supported.

I believe it is crucial to holistically explore the problem of poor self-management by looking at different possible factors that may be influencing patients. Exploring HCPs' perspectives, experiences, and SMS practices will reveal more information on why the outcome of diabetes care has remained poor and illuminate ways to strengthen SMS practices for individuals living with T2DM in Nigeria.

Disciplinary Orientation

The ICN Code of Ethics for nurses identifies four primary nursing responsibilities: health promotion, illness prevention, health restoration, and mitigation of suffering (Fowler, 2010). Through SMS, patients are equipped with knowledge, skills, and confidence to carry out their day-to-day self-management, which is associated with improved glycemic control, reduction and prevention of comorbidities and premature death, and enhanced quality of life (Chrvala et al., 2016; Norris, Lau, Smith, Schmid, & Engelgau, 2002). Conversely, inadequate support is related to adverse effects and death.

A nursing perspective requires and seeks "knowledge about patterns and themes within people in general so that it can better inform the care of the unique and distinct individuals" (Thorne, 2016, p. 28). Consequently, it is recommended that researchers using ID search for commonalities but remain curious and seek differences (Thorne, 2014). Further, the nature of nursing knowledge follows a logic model in which clinical decision-making involves a consideration of both personal interpretation and research evidence in identifying the patient's issue and the course of action (Thorne, 2013). The nature of nursing knowledge is complicated, and clinical encounters demand a range of possible variables. Thorne (2013) argued that one could not assume with absolute confidence that he or she knows all there is to know about a phenomenon or understand what to do with one's current knowledge. The design of this study acknowledged the above disciplinary understandings, which are fundamental in ID study design.

Study Settings

My study sites included two hospitals, Hospital One and Hospital Two. Both hospitals are government-owned tertiary health institutions located in one of Nigeria's southeastern states. Both hospitals offer a range of services, from primary to tertiary care. These hospitals function as referral centers and draw patients from surrounding towns. Individuals with diabetes are routinely seen in the medical outpatient department (MOPD); however, some are admitted into medical or surgical wards depending on their situation. Further details about the study settings are provided in the next few pages.

I purposively selected the two settings due to the scope of services these settings provide to people with diabetes. Like other tertiary health facilities, these facilities are staffed with more different healthcare specialists than other surrounding hospitals. These hospitals also provide affordable services relative to other healthcare facilities within the state.

Diabetes care is provided by a team of HCPs in both study sites. This team includes endocrinologists, resident doctors, nurses, and dieticians. Health educators are also included on the team in Hospital One. Although I am a nurse, getting the perspectives of nurses and other members of the interdisciplinary team was deemed necessary to give a complete picture of SMS as experienced and practiced by Nigerian HCPs. Therefore, I selected study participants who represented different HCPs from various disciplines. It was essential to explore HCPs' unique and collective experiences of SMS to have a complete picture of SMS as it is perceived, practiced, and experienced within Nigeria.

Inclusion criteria. The following inclusion criteria guided my selection of study participants:

- Must be a member of the multidisciplinary team (physicians and resident doctors, registered nurses, pharmacists, dieticians, and health educators) and provide direct care to persons with T2DM in either of the two clinics.
- Must be a HCP who has worked in the diabetes clinic for at least 12 months and who provided care to persons with diabetes in the clinic at the time of the study.
- Able to speak either English or the Igbo language.
- Willing to participate in multiple interviews and be observed in practice.
- Willing to sign an informed consent form.

Sampling strategies. I used two sampling approaches to select participants for the study. Initially, I used purposive sampling to select participants with diverse education, ages, gender, years of experience and based on their willingness and ability to provide insight into their experiences of SMS (Thorne, 2016).

Theoretical sampling is a method in which new participants or cases are selected to "check, fill out, and extend theoretical categories" (Bagnasco, Ghirotto, & Sasso, 2014, p. e6). I employed theoretical sampling as the study progressed, and as I completed preliminary data analysis. For instance, during data generation, many of the participants regularly mentioned psychological support as one of their components of SMS; however, in my participant observation, I observed situations where patients needed psychological care, but it was not given.

I was unsure of how participants defined psychological support. I theoretically sampled more participants to explore the issue of psychological support further. I interviewed four more HCPs and asked the following questions.

1. Describe the last time you provided psychological support to a patient that seemed to be effective?
2. What did you do?
3. What did you talk about?
4. How did you know that what you did was effective at the moment and later?
5. How do you know when a patient needed psychological support?

Answers to the above questions helped deepen my understanding of SMS practices in the two hospitals and enabled me to develop my second and third themes further.

Sample size. Twenty-three HCPs provided care for patients at the diabetes clinic in the two hospitals at the time of this data generation. Nineteen HCPs from the two study sites were included in this study. Sample sizes varied in many of the ID studies reviewed in preparation for the current study (see Maheu & Thorne, 2008; Ploeg et al., 2017; Stewart, Edwards, & Finlayson, 2017). ID may be conducted on samples of any size if there is a coherent rationale consistent with the research question (Thorne, 2016); however, for qualitative research, a reasonable sample size is small enough to obtain rich descriptive analysis and large enough to facilitate an understanding of individual experiences (Sandelowski, 1995). I aimed to achieve a sample size that elicited perspectives from most staff across all the professional fields in the study sites. Nineteen out of the 23 HCPs who worked in both clinics volunteered; this represented more than 80% of the HCP participation. These HCPs were articulate and had years of experience working in these clinics. The HCP participant sample was appropriate for their ability to discuss their perceptions and practices of SMS in rich detail. The participating HCPs also allowed me to observe them as they carried out their duties within the clinic. None of the 19 HCPs withdrew after admission to the study.

Data Generation

Sources of data for this study consisted of (a) individual audio-recorded, semistructured (face-to-face and phone) interviews, (b) brief informal interviews, (c) participant observations, and (d) document review. These data sources are recognized and accepted ways of collecting data in nursing and qualitative health research. I used interviews to elicit participants' views, values, and beliefs regarding SMS and gain insight into participants' experiences. Participant observation helped me to observe HCPs practices closely and provided me with an opportunity to observe practices described during interviews (Morse, Barrett, Mayan, Olson, & Spiers, 2002). Informal interviews enabled me to clarify what I observed during the clinic sessions in a more relaxed environment. Informal interviews also provided an opportunity for participating HCPs, along with patients and patients' family members, to discuss their actions, thoughts, and values. I included document review as an additional source of data to complement findings from interviews and participant observation. I had planned for two interviews with each participant; however, many participants expressed their desire to complete one interview and be contacted for a second interview only if I needed clarification. This request was respected; 15 participants were interviewed once and four were interviewed twice. Data generation commenced in August 2018; I started with participant observation and began formal interviews 1 month later. I completed 23 formal audio-recorded interviews with 19 participants and multiple informal interviews with different participants. Informal interviews were brief, unrecorded, and generally pertained to something that had occurred in the clinic consultation.

Semistructured interviews. Formal semistructured interviews were conducted to gain insight into how SMS was provided and gain SMS perspectives from each participant. The use of open-ended questions provided a forum for individual participants to share their experiences in a way that suited them best. An interview guide (see Appendix A) was used to keep track of questions; however, the actual order of the questions and follow-up questions was dependent on the flow of conversation. Interview questions evolved as the study progressed and as I began to understand concepts that I had not considered when I created the initial interview protocol. For example, one concept that emerged was how the prevailing cultural beliefs and values influenced HCPs' SMS practices. This concept was not fully explored in my initial guide, so I included questions about it in subsequent interviews. This concept eventually became a core theme in my findings.

I conducted 17 out of the 23 interviews face-to-face at a mutually agreed place and time, usually after clinic hours. The rest of the interviews were conducted by phone. Most of the Hospital Two interviews were conducted via phone due to unsafe road and security issues associated with travelling to the hospital. The interviews lasted approximately 1 hour. During the second interview, I followed up on interesting ideas and issues that I identified during the first interview to refine developing categories and themes. The second interview also allowed me to further explore how the social and cultural context influenced SMS practices. I asked questions about emerging concepts during the second interviews. For all interviews, open-ended questions were asked in a different order depending on the flow of the conversation. Open-ended questions were followed up by probes to explore participants' responses further. Probes included questions such as, "I am interested in the way that you are describing that…can you give me a little more detail about how it happened?" I also drew questions from the previous data as points of reference. For example, I asked, "last time you talked about radio programs organized by DAN to improve mass literacy about chronic illness, can you tell me more about it?" I recorded formal interviews using two digital voice recorders. The second recorder served as a back-up in case the first recorder malfunctioned.

All the HCPs interviewed spoke in English, so there was no need for language translation. However, I am a native speaker of the Igbo language and can write Igbo proficiently. Patients made some comments in Igbo during participant observation; such words or phrases were written in the native language with their translation in parentheses. This practice was to preserve the participants' meaning.

Interviewing and participant observation occurred concurrently, with each influencing the other. For instance, I clarified my observations during interviews, and some of what was said during interviews were verified by observation.

Participant observation. I assumed a participant-observer stance in which my purpose for being in the clinics was to obtain data (Kawulich, 2005; Salmon, 2015). I was not employed in either hospital and did not provide care to patients in the clinic. The group being studied was aware of my role as the researcher, and I obtained written consent from HCPs and oral consent from patients and patients' family members before data generation.

My participants were HCPs; therefore, my focus was on HCPs' communication and action strategies in offering SMS to patients. I shadowed and observed HCPs as they provided care to their patients. I also observed patients' reactions to the HCPs' actions, such as the kind of questions the patient asked, how questions were asked, and how education and support were framed. Multiple angles of vision were necessary to understand this complex clinical phenomenon (Spradley, 1980; Thorne, 2016). My observation of patients and informal discussions with patients enabled me to have a broader appreciation of the context within which these HCPs practiced. These observations and discussions provided me with an opportunity to (a) collect more than one form of data, (b) clarify or validate what I heard during the interview, and (c) identify practices that were not explicitly discussed in the interview setting.

Observation is a traditional method of data generation used in many disciplines; observation is widely used in nursing as an essential means of collecting data. No data were collected from patients' medical records. I did not interview patients, but I did engage them in informal conversations when necessary to inquire about their understandings and feelings about their clinic visit. Before observing any HCP or patient interactions, I provided verbal information to the patients and family members present regarding the purpose of the study and why the patients were being observed. Patients and their family members were given the opportunity to agree to be observed or not and were informed that observation or lack thereof would not affect the care they received. HCP participants provided their consent to be observed with each patient.

The diabetes clinic at Hospital One was held in the MOPD twice every week, whereas the clinic at Hospital Two was held once a week. My observation began at 9 a.m. each clinic day and lasted until about 4 p.m. I observed HCPs in Hospital One for 16 hours every week and observed HCPs in Hospital Two for 8 hours every week, resulting in a total duration of fifteen 8-hour observation shifts or 120 hours in Hospital One and seven 8-hour observation shifts or 58 hours in Hospital Two.

I anticipated my observation to have depth and detail; however, I did not foresee how illuminating the observation would be. Participants and patients were willing to provide the needed information. By the end of the first month, I was accustomed to the clinic routine, and both clinic patients and study participants were willing to have me sit and watch.

The interview and observation data influenced each other and enabled me to collect varied data from different sources. For example, I noticed some disparities between what I heard and observed. My initial impression based on the interview data was that health educators provided diabetes education to patients and their relatives every clinic day; however, my observation was that general health education was provided to all the patients and their relatives every morning. The health talks were not focused on diabetes, and the topics varied widely. Diabetes was not presented as a topic during general education in the 2 months of my observation; however, it was mentioned in passing as one of the lifestyle-related diseases. I probed further during my interviews to get past this initial impression.

I used the framework outlined by Patton (2015) for engaging in qualitative fieldwork and writing field notes, which involves the following:

1. Description of the context, including the physical setting.
2. Human social environment: I observed how HCPs organized themselves and activities within the clinic, such as the direction of communication patterns, decision-making patterns, and level of interactions among HCPs or between HCPs and patients and families.
3. Formal interactions and planned activities; for example, events that went on in the clinic, SMS interventions that HCPs offered, and how HCPs addressed cultural and social constraints on self-management and SMS.
4. Informal interactions and unplanned activities. I observed informal interactions between HCPs and patients and engaged in informal interviews with participants in natural conversation.

5. I also observed common terms and language used in the clinic and their meaning and nonverbal communications.

I did not use the above guide strictly. At first, my observation was comprehensive because I did not want to miss any detail; however, my observations became more focused as I began to draw preliminary connections and potential conclusions. I documented my observations in handwritten field notes. I took field notes during and after each observation session to capture what was seen and heard as well as personal reflections related to insights, hunches, or broad themes that emerged from the data. I wrote descriptively, provided as much detailed information as possible, and supported every interpretation (where applicable) with data examples to ensure that I had valid field notes (Spradley, 2016). I ensured that my field notes were dated and contained necessary information such as time and place of observation and common words or phrases used by study participants. I also wrote personal reflections, which I kept separate from the observational data. I participated in regular debriefing and fieldnote review with my supervisors throughout the study, which allowed me to critically review and improve my observational field notes' quality and richness.

Strategies used to minimize observer effects. Researcher-observer effects or reactivity is a temporary change in the behaviour of persons being observed caused by an awareness of the researcher's presence (Monahan & Fisher, 2010). This change is unavoidable in any study that involves interaction among participants, the researcher, and a study setting. I sensed that my status as a North American university student might have caused some uneasiness in some of the research participants who wanted to be careful with what they say or do for fear of an audit or criticism. I regularly explained to participants that I was not there to judge but to understand their experiences. I also assured participants that their names and the names of the hospitals would be kept confidential. Other strategies I employed to mitigate observer effects included providing necessary information regarding the nature of my study and detailing what I would be doing in the field site and the duration of each visit. I took the time to create rapport with the clinic staff to make them feel at ease with me. I arrived at the clinic early enough before each clinic day and engaged in small talk before the clinic activities started. I wrote short notes during clinic activities to avoid attracting attention and developed my notes further at the end of the session. I looked for consistency in the behaviour of participants; in a situation where I suspected nontypical behaviour, I subsequently observed for consistency in such behaviour for that particular HCP as well as among other HCPs. I also compared data across different sources; for instance, I compared interview and observation data to determine consistency. Discrepancies indicated the need to return to the field for more exploration.

Documents. Document analysis is a systematic process for evaluating documents (Bowen, 2009). Records may serve as a primary or collateral source of data (Thorne, 2016). In this study, I reviewed the available clinic documents used for SMS. The clinic documents provided an additional angle of vision. The documents were used to verify emerging codes, categories, and themes from the interview and participant observation data.

My intention for reviewing clinic documents related to SMS was to use the documents as an additional resource to increase the study findings' validity. Participants in Hospital One regularly referred to a diet guide and sometimes a flyer used in patient education. I looked at those documents to extract information related to the perspectives and practice of SMS. I did not look at patients' medical records. As the study progressed, my supervisory committee members suggested that I review the curriculum of select disciplines represented in the clinic to see if HCPs were educationally prepared for their SMS roles. For example, I reviewed the general nursing curriculum developed by the Nursing and Midwifery Council of Nigeria (NMCN) to see what areas were covered with respect to diabetes management. More information about this can be found in Chapter 4.

Memos. I maintained a notebook where I wrote reflexive memos to document my thoughts, feelings, impressions, and analytic insights throughout the study. My study necessitated more than HCPs' self-reported SMS experiences; thus, I also examined the contexts that influenced HCPs' SMS decisions and practices. Writing memos enabled me to actively and deeply engage with the data to develop a keen understanding of their meanings. Memos also helped me keep track of new insights, the decision-making process, and the study's natural progression (Birks, Chapman, & Francis, 2008). The creation of a record in the form of a memo generated an audit trail with information about the decisional process made during this study (Thorne, 2016).

Data Analysis

The interviews, field notes from participant observations, and documents were analyzed in a complementary manner to inform the next data generation activity. I compared findings from each data source to ascertain the consistency of results across the different data sets and bring multiple perspectives to the issue of SMS in Nigeria.

Analysis of documents. Two different documents were analyzed: (a) a pamphlet on diabetes that is sometimes given out to patients and (b) the diet guide given to patients by dieticians during diet counselling. I used these two documents as a collateral source of data to support and corroborate or refute findings from interview and observation data. I examined both documents to extract information about SME practices, including the content of the education to see what is covered, how they are addressed, and the Flesch reading ease index. The patient educational material (see Appendix B) is a two-page document written in English. This document has a Flesch reading ease index of 42/100, which means that it is difficult to read and best understood by university graduates (van de Rakt, n.d.). The document lists information on the types of diabetes, risk factors, signs and symptoms, and management and control. However, the document lacks depth and does not provide much information for someone with diabetes who needs a more than superficial knowledge of diabetes and self-management. Moreover, the document is written in formal English with substantial medical jargon; thus, the document is significantly above the reading level of low-educated or nonmedical people.

The diet guide (see Appendix C) lists different food items and their measurements. These food items are grouped into three categories: food allowed freely, food to be avoided, and sample foods to be served as a meal. The same measurements were assigned to almost all the food items. The levels included "*Moi-Moi*" (level cup), "*akamu*" (level cup), and "beans" (level cup). The diet guide does not have any information on the caloric content of each food item listed or the number of calories, protein, or fat to be eaten per meal. Foods are not grouped separately based on classes such as starch, protein, fat, or vegetables. No standard measurement is used for meat, fish, and vegetables. The diet guide provides no information to help with food exchanges.

Analysis of interview transcripts and field notes. Data generation was concurrent with data analysis, with emerging findings guiding further data generation and new data informing the analytic process. Concurrent data generation and analysis helped me to identify areas that needed further exploration while the study was ongoing. Formal data analysis began after the first three interviews. The data analysis process had three phases: sorting and organizing, making sense of patterns, and transforming patterns into findings (Thorne, 2016). Before sorting and organizing data, I immersed myself in the data by reading and rereading the interview and field note transcripts, listening to the audiotapes to ensure that the transcripts were correct, and interpreting the pauses, nuances, and areas of discomfort during the interview. Reading and rereading the scripts before returning to the field to observe and ask questions enabled me to have a global picture of what happened at the endocrinology clinic. Observation provided a platform for me to see what was being done regardless of what I was told. At the same time, interviews enabled me to explore further the knowledge and assumptions underlying-such actions.

I uploaded my interview transcripts and field notes into Quirkos© version 2.3.1, developed in 2020 (Quirkos, Version 2.3.1). Raw data were broken down into interpretable segments called quirks. I used three distinct forms of coding for the data analysis: open coding, axial coding, and selective coding (Thorne, 2016). The initial coding process was carried out by reading the interview transcripts and field notes and attributing a code to sentences, paragraphs, and sections that represented an idea to which each part of the data was associated. Different quirks (codes) were grouped as bigger quirks (categories), in which codes with similar characteristics were grouped. For instance, in my earlier analysis, I had quirks such as poverty, not enough staff, structural problems, poor referrals, time as a constraint, and poor follow-up. Each of these quirks had many quotes from the interview and field data. These small quirks were later subsumed into a bigger quirk (category) named challenges. I also had other quirks such as didactic education, HCP-centered, and compliance-focused quirks, which were eventually conceptualized in the theme "medical prescriptive model approach."

The coding process was facilitated by the use of specific techniques such as theoretical sampling and the constant comparative analysis approach, in which "every piece of data is compared with others that may be similar or different to develop conceptualizations of the possible relations between various pieces of data" (Thorne, 2000, p. 69). To make sense of patterns (second stage), I employed axial coding to integrate categorized data by determining relationships among the data in relation to the broader research question. Axial coding involved determining (a) relationships among different categories, (b) what gives rise to each category, and (c) the context within which the categories arise (Thorne, 2016). I also employed techniques such as reflexive journals or memos (see Thorne, 2016) and regular debriefing and analysis meetings with my supervisors to critically reflect on my research processes, data, and stance and impact on my emerging findings.

During the phase of ascertaining associations and relationships, back and forth movement between the field and data helped me test developing conceptualizations while challenging findings that emerged with theoretical sampling (Thorne, 2016). For example, the diet guide was a major tool used for diet counselling in both clinics. The diet guide contains a list of foods that the dietitians permit persons with diabetes to eat freely, foods that should be eaten in moderation, and foods that should be avoided. The diet guide also has specific measurements of food that patients should eat. Based on the initial interview and observation, I understood that the food exchange list was not available in both clinics. To test this idea, I arranged a second interview during which this assumption was proved wrong. I learned that the food exchange list was available; however, dieticians believed that patients did not need it. As a result, they did not make it available. The dieticians felt that patients only needed instructions on what to eat and what to avoid, as detailed in the diet guide. Dieticians also thought that giving out the food exchange list was like revealing a "trade secret" that would lead to people taking the list and not bothering to attend the diabetes clinic. This finding speaks to the paternalism and power the HCPs were not willing to relinquish and directly relates to the compliance-oriented medical model approach. This approach was a common thread that underscored the perspectives of the different groups of HCPs in the two hospitals. Thus, theoretical sampling to clarify the assumptions and associations was a useful method in this study.

The last phase of data analysis involved establishing relationships between the different categories through an iterative reasoning process and experimenting and aligning the categories in various ways to develop the most feasible explanation. Thorne (2016) explained that data analysis involves "selecting from among different possible explanations, the one that is going to become the organizing structure for conceptualizing and presenting the most meaningful set of findings possible from the material (data) you have available" (p. 164). These categories and their relationships were combined to form a narrative that became the study findings. During this phase, I went back to the literature to see if and how some of my interpretations and conclusions could be explained. I also interviewed some of the study participants for a second time. I asked participants to reflect on the extent to which the emerging ideas reflected their experience. This approach provided insight into other possible explanations and challenged the direction of my thinking before the final analysis (Guba, 1981). For instance, I had an earlier understanding based on my initial observation that some HCPs may withhold certain information about a medical condition (with a family's request) from older patients to protect the patient from distressful news. However, this tentative interpretation was clarified through interviews with different participants, who explained that such behaviour was not the norm and was not encouraged.

I analyzed the data according to each disciplinary group (doctors, nurses, health educators, and dieticians) and according to each setting (Hospital One and Hospital Two). These data were compared to identify commonalities and differences in views, behaviours, and experiences among participants within the same discipline and across disciplines and between the two hospitals. Next, I considered the overall findings. In the final stage of data analysis, I examined my conclusions in relation to my broad research question: "What can be learned about SMS from the perspectives and experiences of Nigerian HCPs?" I also considered my findings with existing literature; this serves as the foundation for my discussion in Chapter 5.

Credibility

Steps and procedures should be incorporated within the research process to ensure validity and ensure that the research result is not a mere extension of the researcher's claims (Thorne, 2016). Several frameworks of quality criteria are used and generally accepted within the qualitative research community to judge research products as theoretically, epistemologically, and technically sound (Guba & Lincoln, 1981; Morse et al., 2002; Tracy, 2010; Whittemore, Chase, & Mandle, 2001). I employed an ID approach in this study and used strategies proposed by Thorne (2016) to enhance credibility, including (a) epistemological integrity, (b) representative credibility, (c) analytic logic, and (d) interpretive authority.

Epistemological integrity. Epistemological integrity entails internal logic and coherence between the philosophical underpinnings of ID and the design decisions made in this study. My design decisions were guided by the principles of ID, particularly the generation of theoretical scaffolding or analytical framework, which is a synthesis of the existing formal and informal knowledge related to the research topic. The epistemological integrity of this specific study was demonstrated by (a) the critical review of the literature, (b) outlining a thorough review of the scholarship on SMS, and (c) a discussion of my theoretical, professional, methodological, and personal assumptions that influenced this study. The combination of the current knowledge regarding SMS in Nigeria provided the basis for this study, helped to place this study within the field of knowledge development, and illuminated the theoretical assumptions, biases, and preconceptions that underlined the design decisions of this study.

Representative credibility. Representative credibility inquires whether the knowledge claims generated from the study can be validated based on the sample of participants studied (Thorne, 2016). I addressed representative credibility by sampling purposefully and theoretically among HCPs who had an adequate experience providing SMS within the setting and could convey that experience. I used a range of data sources—including interviews, participant observation, and document analysis—to gain multiple perspectives on the phenomenon of study. Thorne et al. (2016) argued that the notion of data saturation opposes nursing epistemology; however, other ID researchers have posited that data generation could cease after researchers have obtained robust and in-depth data to answer research questions (Thorne, 2020). In this study, I continued data generation and analysis until I had enough data to robustly answer the research questions. Concurrent data generation and analysis gave me enough time to code and think about what I was learning from one interview before starting the next interview.

Analytic logic. Analytic logic entails revealing a logical progression in the researcher's reasoning from the forestructure to the knowledge claims made in a study (Thorne, 2016). I conducted a thorough literature review and identified a gap in the literature. I described how the gap in the literature led to the research question that guided this study. The nature of the research question led to the purposeful selection of appropriate research participants who had adequate experience in the area of study and were articulate and willing to share those experiences (Morse et al., 2002). I selected data generation methods such as interviews, participant observation, and document review to explore HCPs' experiences and SMS practice using multiple angles of vision. Data that support respective themes are presented in Chapter 4. I provide the line, page numbers, or dates linking the themes to the interview transcripts or field notes. I used reflexive journals and memos to record contexts across different stages of the study, including the decisions I made and the rationale behind those decisions. This record enabled me to retrace my steps and ensure that my findings were defensible. Lastly, my supervisors were instrumental in guiding my data generation and analysis processes; thus, I was confident that my data reflected my analysis and that my analysis was explicitly linked to my data (Morse et al., 2002).

Interpretive authority. Thorne (2008a) asserted that all knowledge is influenced by perspective; thus, researchers must ensure that interpretations are trustworthy and external to the researchers' bias or experience. Interpretive authority verifies the extent to which interpretive claims are based on data. In the current study, interpretive authority was ensured through prolonged engagement with the setting and data to understand the context and whole picture before commencing analysis. Both clinics are highly specialized service areas, and HCPs in these clinics provide care mainly to persons with diabetes. The variation of how HCPs provide care to persons with T2DM was of interest in this study; this specific objective was easier to assess in a smaller time frame than a more extensive research objective. I saw repetition over time with individual HCPs and different patients. My use of formal and informal interviews and participant observation enabled me to fully understand the clinic's activities within a relatively short time frame. Interpretation of data went through a check and balance process (Morse et al., 2002) through review with my supervisors and my supervisory committee. I had biweekly meetings with my supervisors in which I shared my interpretations of the data. My use of different data sources such as interviews, field notes, document reviews, and reflexive journals also helped to ensure that the data upon which findings were based existed beyond a single angle of vision or perspective.

Ethical Considerations

I adhered to the ethics requirement of the Research Ethics Board (REB) of the University of Alberta and the ethical principles of autonomy, beneficence, and nonmaleficence (Doody & Noonan, 2016; University of Alberta, 2020; Canadian Nurses Association [CNA], 2017). I started to recruit study participants following ethics approval by the University of Alberta REB (PRO Pro00081155; see Appendix D) and ethics and administrative approval from the two hospitals' ethical committees.

The greatest threat to this study was the threat to self-determination, which is the ability of research participants to make their own decisions and exercise their various rights, including the right to informed decisions and autonomy. I used the following strategies to protect participants' autonomy and their right to informed decision-making, privacy, and confidentiality.

Autonomy. I met with the heads of the department of the two endocrinology clinics to explain details about my study, the study purpose, and the research process. I also approached each group of HCPs to describe my study and ask for their participation. I distributed information letters (see Appendix E) to HCPs in both clinics; the information letters contained detailed descriptions of the research such as (a) the research purpose, (b) the research procedures, (c) a description of benefits and risks to participating, (d) assurance of confidentiality and anonymity, and (e) an option to withdraw. HCPs were given time to review the information sheet and consider whether they wanted to participate in the study. The information sheet had my contact details and the informed consent form (see Appendix F). Those interested in the study could contact me through my contact details written on the information sheets. I provided further information as needed. Verbal consent (see Appendix G) was obtained from patients and relatives present before observation. Written informed consent was obtained from those HCPs interested in the study before any data generation activities. Demographic information (see Appendix H) was obtained from participants before data generation. I told participants, patients, and family members that participation was voluntary and that they had the right not to participate or withdraw at any time without any effect on their care.

Beneficence. Beneficence refers to the benefit of the research. Participants were informed that this study may not be of immediate and direct benefit to them but may lead to knowledge that could improve diabetes care in Nigeria.

Nonmaleficence. Nonmaleficence involves preventing intentional harm and minimizing potential harm (Fouka & Mantzorou, 2011). One of the crucial ways this ethical principle was upheld was to maintain participants' right to privacy and confidentiality.

Privacy and confidentiality. I anticipated that participants would feel a sense of loss of privacy from being observed as they carried out their routine work or from sharing their ideas and experiences in the clinic. Therefore, I ensured the participants' privacy and confidentiality as much as possible. I conducted interviews in a safe and comfortable place that was mutually agreed upon with the participant. I removed participants' names, the name of the institution, and other information that could link participants to the study during the transcription of interview data to avoid a breach of confidentiality and any psychological and social implications that a breach of confidentiality could have on participants. I did not release or otherwise publish any data relating to this study with participants' names, contact details, names of the hospital, and any other information that could identify participants.

I securely transferred audio interview files and field notes to a password-protected shared drive that was only accessible to my supervisors and me. I stored hard copies of documents related to this study, such as the consent forms and demographic information sheets, in a locked filing cabinet accessible only to me. All documents (both electronic and hard copies) related to the study will be kept for 5 years after the end of the study, as required by the University of Alberta's REB, after which they will be destroyed.

Summary

ID is an applied qualitative research method aimed at identifying patterns and themes within subjective perceptions to inform clinical practice. In this chapter, I described how I used ID to explore perspectives, experiences, and practices of SMS among Nigerian HCPs providing care to persons with T2DM at two endocrinology clinics located in southeastern Nigeria. ID enabled me to gain a deep understanding of the participants' perspectives and understand how participants' experiences and practices were moulded in response to patients' cultural values and norms and the culture of the HCPs and Nigerian healthcare system. I present the findings of the study in Chapter 4.

Chapter 4

Findings

Chapter 4: Findings

This study was carried out in two endocrinology clinics located in the southeastern part of Nigeria. I present the study findings in this chapter, beginning with a brief description of participants, followed by the setting of both hospital clinics and a comparison of the two clinics. I also describe the four main themes generated from this study regarding SMS, which were (a) the cultural and social context of SMS, (b) navigating the sociocultural terrain, (c) compliance-oriented medical model approach, and (d) SMS within the context of the traditional hierarchical structure.

Participants

Study participants were HCPs and included endocrinologists and resident doctors, nurses, dieticians, and health educators who provided direct care to persons with T2DM in the endocrinology clinics of the two hospitals. Fourteen HCPs from Hospital One and five HCPS from Hospital Two participated in the study. All participants were working at the diabetes clinics of either hospital at the time of data generation. In Hospital One, participants included endocrinologists ($n = 4$), resident doctors ($n = 1$), registered nurses ($n = 3$), health educators ($n = 3$), and dieticians ($n = 3$). Participants in Hospital Two included resident doctors ($n = 2$), a nurse ($n = 1$), a dietician ($n = 1$), and a nutritionist ($n = 1$). Participating HCPs in both hospitals were between the ages of 35 and 60 years. Seven participants were male and 12 participants were female. Participants' overall working experience ranged from 2 to 36 years ($\bar{x} = 18$), whereas their experience in the clinic varied from 1 to 12 years ($\bar{x} = 8$).

All the HCPs interviewed except one nurse (who had a diploma) had a minimum of a bachelor's degree in nursing or a related field. In both settings, the entry qualification for a nurse is the registered nurse diploma, which takes 3 years in a school of nursing. After that, some nurses acquire a bachelor's degree in nursing or a related field while working. A postdiploma degree in nursing takes an additional 4 years. The dieticians and nutritionists who participated in this study had a 4-year bachelor's degree or the equivalent of a higher national diploma (comparable to an associate degree). Four of the participants had a 6-year basic medical training, followed by a 1-year internship and a 5-year residency training in endocrinology. Health educators were only present in Hospital One. Health educators did not come from a specific discipline; some had either a bachelor's degree or higher national diploma in health education or a degree in a related health area such as biology or biochemistry. None of the health educators had background education in diabetes or other chronic diseases, except one health educator who was also a nurse. I examined HCPs' (nurses) program curriculum to ascertain their select background knowledge of diabetes SMS.

In the NMCN's (2016) curriculum of training for nurses, diabetes was listed under medical-surgical nursing as one of the problems of the endocrine system and a metabolic disorder. Details on chronicity, the psychosocial impact of chronic diseases on the individual, the family, and the healthcare system were not included in the curriculum. Other related concepts such as self-management, empowerment, quality of life, behaviour change techniques, and how to promote empowerment and maximize functional status for people with chronic illnesses were not included in any section of the curriculum.

Research Setting and Clinic Processes

Hospital One. Hospital One was a tertiary health institution located in one of the capital cities in Nigeria. Hospital One had an endocrinology clinic (one of my research settings) as one of the operational clinics housed within its MOPD. In the endocrinology clinic, patients with different health conditions such as type 1 diabetes, T2DM, gestational diabetes, hyper and hypothyroidism, and other endocrine conditions were seen. Up to 90% of patients seen were persons with diabetes; hence, the clinic was synonymously known as the diabetes clinic. HCPs who worked in the diabetes clinic included doctors, nurses, dieticians, and health educators. Nurses, doctors, and dieticians had their offices within the clinic, whereas health educators visited the clinic reception every morning to provide a general health talk to the patients waiting in the reception area. The diabetes clinic operated on Mondays and Thursdays and ran concurrently with the cardiology clinic on Mondays and with the obesity and metabolic disease clinic, infectious disease, and neurosurgery clinics on Thursdays.

Patients did not come directly to the diabetes clinic on their own; instead, patients were referred from the general outpatient department, accident and emergency unit, or other hospitals. The clinic had five offices. Facing the offices was an ample space used as a reception, where individuals who visited the clinic sat and waited for their turn to see the nurse, dietician, or the doctor. Seats were placed within the reception area, on which patients sat facing the offices (see Figure 1). Behind the reception were two small windows where patients and their relatives queued to make payments for different services such as consultation, diet counselling, and drugs. The second window led into the medical records unit; patients also queued there to retrieve their folders, a green file containing patients' medical records.

Figure 1. Patients and their relatives sitting in the reception of Hospital One diabetes clinic.

The reception was usually busy with people who came to the endocrinology clinic, as well as those visiting other clinics within the MOPD, those waiting to pay for different services, those waiting to retrieve their folders, or those waiting to see a HCP. The reception was the entrance into the clinic; thus, the reception had a steady stream of traffic each clinic day from people entering or leaving the clinic. Each clinic used three offices; one was shared by nurses and dieticians and the other two were used by doctors.

The office used by nurses was divided into two sections by a metal board, and the inner section was further divided into two. Nurses and dietitians shared the outer space while another clinic used the inner space. This space, which served both the nurses and dietitians, was small compared to the number of people who used it and the number of people who moved in and out during the peak period of 0900 to 1400 hours.

Patients started arriving at the clinic at around 0800 hours. Patients entering the clinic went straight to the medical records unit facing the reception to drop off their appointment cards. Next, patients queued up in front of the window designated as the payment area to pay their consultation fees. Patients were required to pay consultation fees of ₦500 (CAD 1.8). Following payment, patients were issued printed receipts that they took to medical records. The medical records staff then retrieved patients' folders using the medical record number and patient's name on the appointment cards. The folders were then taken to the nurses' office by the medical records staff (patients were not allowed to carry their folders). There, the nurses recorded patients' weight, blood pressure (BP), and blood glucose readings in the folder before patients were called into the doctor's office.

The patients I observed paid out of pocket except for a few patients who had health insurance from being active federal government workers or workers in an organized private firm. On average, patients were expected to pay a total of ₦2000 (CAD 7.2 at the exchange rate of $1 to ₦276): ₦500 (CAD1.8) for the doctor's consultation, ₦500 (CAD1.8) for FBS or RBS, and ₦1000 (CAD 3.6) to see a dietician. This amount did not include the cost of drugs, laboratory investigations, and treatment of comorbidities. Two thousand naira is significant considering the income of the average Nigerian; this amount represents about 7% of the new monthly minimum wage (₦30,000 [CAD108)] in Nigeria). The consultation fee and diet counselling fees were compulsory, and patients were required to show proof of payment before being attended to.

Each endocrinology clinic day in Hospital One typically began with health education given by health educators. Health educators first initiated a Christian prayer with the patients before starting a general health talk with all the patients and their relatives who came to the clinic. The majority of people in South-East Nigeria are Christians, and Christian prayers are the norm in many establishments; however, despite being Christian, many still hold the Igbo traditional beliefs.

General education. In Hospital One, the health educators' daily general health talk covered different health conditions such as wellness, hepatitis, hypertension, arthritis, and cancer. Topics were chosen weekly, and each topic for the week was taught in every clinic from Monday to Friday. The essential goal of such health education was to improve population health literacy. The health talk was given in a lecture format and lasted 1 hour. Patients and relatives were usually addressed in a mixture of Igbo and English. At the end of the health talk, health educators allowed patients to ask questions. Sometimes handouts covering different diseases were offered to patients for a token fee of ₦50 (2¢). Topics for health education were varied and tailored to a diverse audience, not just those living with diabetes. Health talks followed a prearranged pattern designed to cover as many health conditions as possible. One of the health educators had the following to say about patient education:

> What we normally do is talk to them generally. We do not pay attention to a particular group of patients and their condition, like those with diabetes, and if we have patients for another condition too, and you know, it is usually a summary, we have to be brief. We give them a summary enough to carry them, what a layman needs to know concerning such an issue. (H1H02 P3, L20-P4 L24)

Diabetes was not treated as a specific topic during my 8 weeks of observations; instead, diabetes was mentioned in passing. The health topics offered during my participant observation sessions are displayed in Table 1.

Table 1
Weekly Health Education Topics: August–September 2018

Week	Topic
Week 1	Health promotion
Week 2	Hepatitis
Week 3	Low back pain
Week 4	Drug misuse/abuse
Week 5	Cancer awareness
Week 6	How to take routine care of oneself
Week 7	Cleanliness
Week 8	No health education

The health talk occurred while nurses called in patients; thus, some patients were called in to have their blood sugar, BP, and weight measured while others were called to see the doctor as the health talk continued. The clinic was usually bustling and noisy during this time. It was sometimes difficult to hear what the health educator was saying. Some health educators indicated in their interviews that the noise in the clinic was a major distraction for them.

Individualized education. In addition to the general education provided in the waiting room, patients also received individualized, one-on-one diabetes-specific education when seeing different HCPs. The scope and extent of such education depended on the HCP, the time available, and the patient's lab results. This education typically lasted 5 to 15 minutes for nurses and doctors and about 30 minutes for the dieticians. Doctors educated patients mainly on the first encounter after the initial diagnosis and subsequently when patients' lab values were abnormal. Nurses occasionally gave brief individual talks within the time they spent with patients. Dieticians provided dietary counselling to patients referred to them.

HCPs usually focused their teaching on the basic facts about diabetes, such as the causes, complications, the need to adhere to medical instructions, and follow-up. HCPs also referred to the fact that diabetes has no cure. The HCP decided on the topic of education unless a patient had a specific question. Education given on the first contact was meant to give the patient an overview of diabetes, as shown below:

> A young man in his 40s, newly diagnosed with T2DM, was called in; he presented to the diabetes clinic of Hospital One for the first time. His initial assessment was completed by a physician intern who later read out the patient's history to the endocrinologist. The patient complained of pins and needles sensations in his lower limbs.
>
> The doctor asked him what he eats; he replied, "More of carbohydrate, that is our usual diet. In the night, I eat *garri* (grated and fried cassava roots) and soup, and rice in the afternoon. I take a chocolate drink in the morning. However, since I was diagnosed with this disease, I take only Lipton (tea) in the morning. I no longer take beverages like Milo (chocolate drink). I tried to avoid carbohydrates, so I focus on beans. This morning I ate '*akara'* (bean cake) and Lipton, then afternoon, wheat and unripe plantain. Recently, I heard that wheat is dangerous."
>
> Doctor: "Don't worry, the dietitian will explain all that."
>
> The doctor asked if he had any problem with erections, and the patient said no. The doctor turned to the House Officer (physician intern) and remarked, "this patient is relatively young; therefore, glucose control should be tighter to avoid the onset of complications." The patient's Random Blood Sugar (RBS) was 328mg/dl (18 millimoles per liter [mmol/L] (normal RBS 5.0-10.0 mmol/L) [HealthLinkBC, 2019]. The doctor asked him about his drugs and the dosage and then said, "Based on the dose you took yesterday, we do not think that you are taking appropriate dosage. We will make

> prescriptions for you, and you will need to take it the way we prescribed. We will see you next Thursday to check for control." The exchange continued.
>
> Doctor: "Do you know about diabetes?"
>
> Patient: "I have been hearing about it."
>
> The doctor then gave a brief explanation of diabetes, its causes, possible complications, and why it is necessary to have adequate glucose control. He told the patient that FBS should not be more than 110mg/dl [6 mmol/L), while RBS should not be more than 160mg/dl [8.8 mmol/L]. He continued, "There is a test you do from time to time every three months, HbA1c, that will give us an idea of your glycemic control. We encourage you to get a glucometer. We will start you on oral drugs first; if there is inadequate control, we will put you on insulin." The talk lasted for about 10 minutes.
>
> The doctor dictated the required laboratory investigations to an intern who wrote them in the patient's folder. He then asked the patient if he had any issues with his eyes, to which the patient answered 'no.' He turned to the intern, "We will teach him about foot care later." He also dictated out the patient's drugs and directed the patient to start glucose monitoring and return in one week. The intern wrote out the prescriptions and gave the patient both the prescription form and the lab request forms while directing the patient to go to the pharmacy for his drugs and the laboratory for tests. (08/09/18 H1PO field note, pg. 12- 13)

The health talk was delivered in a normal tone and without any medical jargon; however, the talk was brief. The doctor did not obtain any verbal feedback about whether the patient understood all the doctor said or whether the patient had any questions. The patient was nodding his head while the health teaching was happening and did not ask any questions. In the end, the patient thanked the doctor and left. After the patient left, I asked the doctor whether the patient would receive any other form of education on DSM, seeing that he was newly diagnosed. The doctor replied, "Some health educators come here in the morning to give education, but we do not really have diabetes educators, so we just do the much we can" (08/09/18 H1PO field note, p. 13).

This incident was a typical example of how patients received diabetes education in the clinic. This educational moment was provided within 10 minutes to a patient with a new diagnosis of diabetes. During follow-up visits, the patient may or may not receive any other form of education depending on how many other patients the HCP must see and the patient's FBS or RBS result. For instance, the patient may not receive any other form of education if the patient's blood sugar was perceived to be normal. HCPs did not have proactive measures to provide structured or detailed DSME to patients at regularly scheduled intervals irrespective of their lab results. During a consultation, the patient and their relatives were sometimes praised for doing well if the parameters were within the normal range; however, questions were not usually asked regarding what the patient or relative did to achieve such results.

Patients' vital signs and FBS or RBS were checked in the shared office used by nurses and the dietician. Patients spent about 10 minutes with two nurses; one nurse checked the patient's weight and BP, and the other nurse checked the patient's blood sugar. Nurses would have a brief talk with the patient if the results were abnormal. The nurse sometimes reprimanded patients if they felt that the patient was not taking adequate care of themselves. This talk was usually given within the time frame the nurse had with the patient; for instance, in one of my participant observation sessions, a woman's FBS was 219mg/dl (12 mmol/L). Normal FBS is 4–7 mmol/L [HealthLinkBc, 2019]; consequently, the nurse asked the patient if she was taking her medications. The patient replied, "Yes, I am trying." The nurse asked, "What about food?" The patient replied, "I get hungry, so I eat to my satisfaction when I am hungry." The nurse scolded the patient: "And you said that you are trying, you need to try harder. You need to cut down on the quantity of food you eat, eat less carbohydrate and more of vegetables" (HIPO 8/30/18).

Similarly, for a middle-aged man with T2DM whose BP was high, the nurse asked, "Mr. X, your BP is always high, what do you do to take care of it? Do you take your drugs as prescribed?" The patient said, "yes." The nurse then asked to see the medications the patient had been taking. The patient brought out medicines from his bag; three drugs were in their pockets, and half of the packages were empty. The nurse looked at the pills and talked to the patient about rest and an appropriate diet (HIPO 8/6/18).

Nurses also interpreted the lab results for the patient because many patients did not usually know the implication of their blood glucose test results. The following excerpt from my field notes highlighted other SMS activities that nurses carried out within the clinic:

> The nurse checked a patient's blood sugar and told him that the result was 118mg/dl (6.5 mmol/L) [normal < 100mg/dl; 4–7 mmol/L]; the patient asked her, "how is it?" She told him that it was normal. She checked another patient, a woman that appeared to be in her late thirties, showed her the result and asked how the result had been in the past; the nurse also asked, "do you have a glucometer at home? Do you record your readings every day? Let me see it." The patient brought out a book, opened it, and showed her a record of her fasting and random blood sugar readings. The nurse glanced at the book and remarked that the patient did not check her blood sugar regularly. "Check your blood sugar every day," she said, "it should be done morning and evening, random and fasting."
>
> A more senior nurse cuts in, "do it at least once a week." Both nurses scrutinized the patient's record. One of the nurses remarked that the patient's blood sugar had been

> fluctuating between high and low, mostly high, and asked the patient what she eats. The patient answered in exasperation, "what have I really eaten since yesterday?" She started crying. The nurse asked, "do you take your drugs? Do you do what you are asked to do?" There was no answer. "You don't have to cry," the nurse said. The first nurse took the patient to one of the offices, they spent about 10 minutes, and by the time they came out, she was no longer crying. (H1PO 09/03/18 Fieldnote)

The patient in the above quote implied that she had not eaten anything out of the ordinary—such as a very sugary diet or snack or a huge meal—that could be affecting her blood sugar. As shown in the quote, nurses provided education to patients during the brief period they spent with patients. The care nurses provided to patients depended on the nurses' perception of the individual patient's need rather than being determined by asking the patient where they needed or desired assistance.

Nurses took patients' folders to the doctor after the BP check and FBS test. Patients were then called in to see the doctor in the order in which the folders were received. Patients, especially first timers, were sometimes referred to see the dietician. Such patients saw the dietician after their appointment with the doctor.

Education provided to patients by the doctor consisted of basic biomedical information about diabetes and instructions on what to do to maintain normal blood glucose levels. This education was usually delivered in a quick-paced, didactic, and lecture format. HCPs did not usually request verbal feedback as to whether patients understood or not. The time available for the clinic and patient load influenced the depth of education provided. HCPs did not usually provide health education; rather, they provided minimal explanations when they had many patients waiting or near the end of the clinic, even if patients demonstrated a lack of understanding of their condition or its management.

Two types of educational materials were available in Hospital One: the diet guide and a diabetes tip pamphlet. Details about the pamphlet and diet guide are provided in Chapter 3. One of the participants had this to say about the lack of visual aids:

> There should be visual aids, visual things that will help patients understand, like posters and all. Those things you know, you know that when you come in, you know that this is a clinic, patients seeing it will know, you know, *"Ebe a m gara bu clinic ndi nwere udi oria m"* [I have come to the clinic for people with diabetes], and when patients look at the posters, they will learn some of the things they should be doing. For instance, visual aids, etcetera, showing patients how to give insulin injections. Now the educators or the nurse will be using that thing to tell you this is how you should do it rather than just giving the information verbally. If you are telling somebody about using a pen (insulin pen), those things should be available, readily available, visually, or you have them at hand to tell the person how to use it, so these are some of the things I am just talking about. (H1N02, P22, L11-P23, L7)

Hospital One had a specific structure and processes similar to Hospital Two; however, the two differed in patient load and staff strength.

Hospital Two. Hospital Two (see Figure 2) was a state-owned tertiary health institution located in a rural area in Nigeria's southeast. Hospital Two was about 80 kilometres from the state capital and situated off a long stretch of a rural road. The endocrinology clinic in Hospital Two was held once a week from 9 a.m. until all the patients were seen (around one to five patients per week). The clinic was run by an endocrinologist who worked part-time, one nurse who worked full time in diabetes and other clinics, and one dietician and one nutritionist who covered the whole hospital. Two resident doctors and a medical intern worked in the clinic at the time of data generation. Dieticians have degrees in nutrition and dietetics or an equivalent and nutritionists have degrees or an equivalent in human nutrition. Dieticians have full jurisdiction to provide dietary counselling to patients with diverse health conditions, including diabetes, whereas nutritionists can offer group education to patients but do not provide one-on-one dietary counselling.

Just as in Hospital One, the endocrinology clinic in Hospital Two was one of the specialist clinics housed within the MOPD. Patients visited the endocrinology clinic on referral from the general outpatient unit, accident and emergency, or direct referral from other hospitals. After arriving at the clinic, patients went to the accounts department, paid a consultation fee of ₦500 (CAD 1.8), and were issued receipts. Next, patients went to the medical records department to drop off their appointment cards, which the medical records staff used to retrieve patients’ folders: a green file that contained the patient’s hospital records. Folders were created for new patients. After due registration, the medical records staff took the folder to the nurse. The nurse then checked the patient’s vital signs, FBS, and RBS, which the nurse recorded in the patient’s folder. The nurse sometimes engaged in brief health talk if the patient’s FBS or RBS were outside the standard parameters. The nurse then took the patient’s folder into the doctor’s office and patients sat in the waiting area until called to see the doctor. Patients paid a consultation fee of ₦500 (CAD 1.8), ₦1000 (CAD 3.6) for diet counselling, and ₦1000(CAD 3.6) for a blood sugar test.

Figure 2. The passage leading to the diabetes clinic in Hospital Two.

Differences between Hospitals One and Two. Hospital Two differed from Hospital One in terms of geographical location and funding. Hospital One was owned and funded by the federal government, whereas the state government owned and funded Hospital Two. Additionally, Hospital Two was situated in a rural community; thus, Hospital Two drew patients from the surrounding villages, mostly the elderly and people of lower socioeconomic status. In contrast, Hospital One drew relatively younger people due to its location in a bigger city. Besides the hospital staff and their relatives—some of whom visited Hospital Two as patients when they were ill—many other patients were retired, elderly, poor farmers, or petty traders. Some of the HCPs in Hospital Two cited poverty on the part of patients and lack of political will by successive state governments to prioritize healthcare as some of the hospital's challenges. HCPs provided general and individualized education to patients in Hospital One. The general education for all the patients occurred in the reception area, whereas individualized education was provided in the different consultation rooms during the patient's encounter with a HCP. HCPs in Hospital Two did not provide general diabetes education.

Furthermore, very few patients visited Hospital Two compared to Hospital One. HCPs in Hospital One saw about 40 to 60 persons with diabetes in the weekly diabetes clinic, whereas HCPs in Hospital Two only about two to five persons with diabetes every week. HCPs attributed the low turnout of patients to the incessant strikes by hospital staff and the worsening and unsafe road conditions that have made the hospital difficult to access.

For both settings, the focus was on assessing DSM's physiological domains, namely FBG, RBG, HbA1c, and vital signs. The typical approach to counselling or educating individual patients and families was basic, brief, and provided as a monologue with minimal patient participation in asking questions, giving opinions, or asking for specific kinds of information.

SMS Practices in Nigerian Diabetes Clinics

I independently analyzed and compared the data from each research setting. Both settings were in southeastern Nigeria and were mostly inhabited by the same ethnic group. The sociocultural context and values observed and described by participants were the same. HCPs had similar perspectives, experiences, and SMS practices across the two study sites and are thus reported together. I developed four themes to represent the Nigerian HCPs' perspectives, experiences, and practices of SMS for persons with T2DM. These findings evolved from data generated through interviews, participant observation, and the review of SMS relevant documents such as patients' educational materials. The themes included (a) the cultural and social context of SMS, (b) navigating the sociocultural terrain, (c) compliance-oriented medical model approach, and (d) SMS within the context of the traditional hierarchical structure (see Table 2).

Table 2

Themes and Subthemes

Themes	Subthemes	Sub-subthemes	Description of major themes
1)The Cultural and social context of SMS	1a. Cultural beliefs and practices	i. Belief in the supernatural origin of diabetes ii. Individual-family interdependence	This theme is a description of the social and cultural context in which participants provided SMS.
	1b. Myths and limited understanding of diabetes		
	1c. Absence of health insurance		
	1d. The structure of diabetes care		
2)Navigating the socio-cultural terrain	2a. Allowing judicious use of herbs		Strategies used by Nigerian HCPs work through the challenging circumstances within the social and cultural environment they practice.
	2b. Involving God and prayer in patient care		
	2c. Family involvement		
3)Compliance-oriented medical model approach	3a. Priority on normal blood glucose		A paternalistic approach to care in which HCPs function as experts and sole decision-makers while patients passively obey instructions while relying on HCPs' expertise and goodwill.
	3b. Focus on Compliance		
	3c. HCPs as experts		
	3d. SMS as advice, informal counselling, and education		

Themes	Subthemes	Sub-subthemes	Description of major themes
4)SMS within the context of the traditional hierarchical structure	4a. Role validity, role boundaries, and poor teamwork		Participants' experiences as they attempted to provide SMS within a generalized system that was conventionally designed for acute disease management.
	4b. Inertia in HCP and the organization		
	4c. Lack of infrastructure: Shaping SMS practice	Lack of support for continuing education for SMS Brief, rushed basic, and inconsistent patient education Loss to follow-up Workarounds i. Providing personal phone numbers ii. Flexibility in the prescription of drug and lab investigations	

The cultural and social context of SMS. This theme addresses the social and cultural context in which participants provided SMS. Subthemes include (a) cultural beliefs and practices (including belief in the supernatural origin of diabetes and individual-family interdependence), (b) myths and limited understanding of diabetes and its management, (c) lack of health insurance and poverty, and (d) the structure of diabetes care.

Cultural beliefs and practices. The lay and popular beliefs and practices manifested in these locations that influenced the practice and experience of SMS included (a) belief in the supernatural origin of diabetes and (b) individual-family interdependence.

Belief in the supernatural origin of diabetes. Both hospitals were in the eastern part of Nigeria, and a vast majority of patients and HCPs alike belonged to the Igbo ethnic group. Among this cultural group, it is believed that-every disease has a cure, and chronic diseases are considered to have supernatural origins. In line with the belief in the supernatural origin of chronic illnesses, individuals in the Igbo ethnic group believe that diseases can be inflicted on an individual by another person through fetish methods. Members of this group also believe that the only way to manage such supernaturally caused illness is through supernatural or spiritual means. For example, a common complication of diabetes, the diabetes foot ulcer, is known as *acha-ere* among this ethnic group and is widely believed to be due to the machinations of one's enemies. Thus, the solutions to *acha-ere* are supposedly found in prayer houses or by a spiritual healer. This religious belief and practice are captured in one of the participants' quotes below:

> Most of them, if they have a diabetic complication like gangrene, they will go and be treating it and say it is *acha-ere* [That which rots as it ripens]. That is what most of them are doing. You see them only when it is bad and forming maggots; the thing is getting so bad, some will go to church and be doing prayers, pouring olive oil to the wound. Some go to native doctors and say it is *acha-ere*. So, at the point they are rushed to the hospital, we end up amputating immediately, or the person will lose his/her life. Most of them do not believe that it is gangrene. They will say that people have done something spiritual to them. (2nd interview H1D01, P2 L4-12)

During my participant observations, I noticed that patients did not readily talk about their beliefs in the supernatural origin of their diabetes with their HCPs. Patients skipped medications and often blamed their nonadherence to prescribed medications on their poor financial status. However, further probing sometimes opened alternative beliefs about the cause and management of the patient's condition. For instance, in one of my observation sessions, I met with a woman after she had seen the doctor and asked why she had skipped her medication for such a long time. The patient had told the doctor that she skipped her medications because she did not have enough money for a refill. However, she told me that diabetes was not the cause of her problem, but her sister-in-law, who had used evil influence on her. Due to these lay beliefs, some patients resorted to a combination of medical and traditional treatment, including herbs and spiritual exercises. These traditional treatments were rarely openly discussed in patients' consultations with the HCP.

Many of the HCPs I interviewed stated that issues such as alternative beliefs regarding the cause and treatment of diabetes affected patients' disposition to medical treatment. Some HCPs felt that patients' lack of adherence might result from the low level of priority patients accorded their medical treatment due to ignorance. HCPs believed that poverty played a secondary role. Further, HCPs explained that the nonadherence to therapeutic recommendations was sometimes seen among some educated patients who were neither poor nor educationally disadvantaged. An inherent belief in the supernatural cause of the disease was then used to explain such behaviour. One of the participants said the following about the prevalent beliefs and practices with regards to diabetes:

> Because we have cultural problems in this part of the country, people believe diabetes to be from curses and all that, and therefore, how they perceive our treatment is different. If you see them today, that may be the last time you can see them. They may go to traditional health care practitioners. I have a couple of them who stopped, educated people, you know, some people whom you think are even educated, some of them they stop the treatment, they even start trying other types of maybe herbal concoctions. When it gets bad, they come back to you; then, the complications would have set in like liver problems, renal problems. (HIE01, P1, L18-30)

Diabetes seems to be shrouded in mystery in the eastern part of Nigeria. It is generally believed that every disease can be cured. For instance, in the excerpt below from one of my participant observation sessions, a patient was surprised to hear that there was no cure for diabetes:

> The patient asked, "my diabetes, has it gone, or is it still there?" The doctor explained, "it does not have a cure; you will take the drugs regularly." The patient sighed in exasperation and said: "*haa, o bu na o nweghi olila*?" ["so, does it mean that I will never be healed of this disease?"]. (H1PO 8/9/2018)

Although every disease is traditionally believed to have a cure, Nigerians have heard stories or experienced a family member or someone else who has diabetes. Contrary to what they understand about diseases, many Nigerians see those with diabetes live with it from year to year, thereby creating a conflict with their assumed knowledge of the disease's course. Therefore, patients who held expectations of a cure were distressed by the conflict between their hopes and reality, as exemplified in the following exchange between a physician and a patient:

> Patient: "My parents lived up to 100. I do not know where this diabetes came from; I do not know if I was bewitched; sometimes, I feel like dying and resting."
>
> Physician: "Diabetes is not the end of everything, but you see it as such." [At that point, the patient started wiping tears from her eyes]. "I hope you are not crying."
>
> Patient: "Crying does not solve any problems. This diabetes has overtaken my life; I cannot even hold a pen properly; my hand trembles." (H1PO 8/16/2018)

It is widely assumed among people from the Igbo cultural group that patients with diabetes can only eat foods that do not contain carbohydrates or sugar. Incidentally, most of the staple and widely available foods in Nigeria are rich in carbohydrates. For instance, rice, yam, cocoyam, and cassava are calorie-dense foods (see Figure 3).

Figure 3. Nigerian open food market. Retrieved from "Become rich with Nigerian food export business!" by Onwukwe, ABA Business Blog, n.d. https://www.business.nwaba.ng/business-blog/46/become-rich-with-nigerian-food-export-business

Cassava is the principal food for the Igbo and is consumed daily in many households. The lay notion is that persons with diabetes should abstain from the above foods and instead eat alternatives such as wheat, beans, and unripe plantain, which are believed to be low in carbohydrates. Persons with diabetes are also asked to drink tea or maize gruel (*akamu*) without sugar. Often, these individuals with diabetes feel burdened with these diets, some of which are expensive and not widely available. These limitations also cause one's diet to be monotonous because the recommended options lack variety. This situation makes the diagnosis of diabetes especially distressing because nobody wants to live with a disease for the rest of their lives. Equally disturbing is that the management is expensive and uninteresting in terms of one essential domain of life: food. One nurse participant explained this further:

> Sometimes when you are talking to some [patients], you notice they are crying. I have met younger patients when you talk to them; they burst into tears, they will be like, "it is not their portion," some of them are newly diagnosed. Some know they have diabetes,

> but they do not want to accept it. When you talk to them, they will say they are too young for that. I met a 26-year-old girl that does not believe in this disease. 'It is not my portion; how can it be, as young as I am, I am a young Corper [recent university graduate]. It does not allow me to do anything, and if I eat this, they will tell me not to eat it.' (H2N01 P2, L10-16)

HCPs believed that some patients lived in denial after the diagnosis; they cried out for help, holding out hope for a cure through religion, faith, and superstition. The sentence, "it is not my portion," meaning, "it cannot happen to me," was typical. Many Christians in Nigeria emphasized that one would live in divine health if one followed through with the faith and fulfilled one's obligations as a Christian. A diagnosis of an incurable condition such as diabetes contradicted this principle; hence, the statement, "it is not my portion." In both hospitals, participants narrated their experiences with these beliefs, as exemplified by this doctor's observation:

> Then for some patients, when you tell them about their diabetes and the fact that it has no cure, they start expressing those beliefs that diabetes is a death sentence, that it is not their portion, and all those things. (2nd interview H1E04 P7, L16-17)

HCPs in both settings were aware that many of the patients subscribed to the notion of supernatural origins of disease. Therefore, HCPs routinely encouraged patients by giving them hope as well as persuading and explaining to patients that diabetes is a medical condition that is incurable but manageable:

> We start by telling the patient that it is true you have this disease, but it does not mean you will not live everyday healthy life. We try to convince that patient because some of them will start crying as soon as they come; as soon as they are diagnosed, their mindset

> will change, some will think that it is death knocking. However, we try and assure the patient that it is not like that; it is not the end of the world. You can still manage it and live a normal healthy life. (H2D01, P3, L10-16)

In the following quote, a participant explained how they responded to patients' belief in the supernatural origins of their diabetes or its complications by disabusing their beliefs of witchcraft or spells through education:

> In terms of beliefs, we explain to the person how diabetic foot comes, the damage to the nerves, the damage to the blood vessels and then sensation, or maybe sleeping on a hard surface and all that. We tell the person how the thing came about. Disabuse the person's mind that it is not somebody in Lagos because maybe they had a little quarrel. (2nd interview H1E03 P6, L 19-24)

HCPs also contended with the values of interdependence and family orientation—which is a fundamental cultural value among the Igbo ethnic group—and its influence on healthcare decision-making.

Individual-family interdependence. Igbo culture is considerably family oriented. Members of one's family are intimately involved in important decisions affecting one's life, including seeking health care. Family members within the Igbo cultural group are expected to take care of one another during ill health by providing financial support and assuming a caregiving role when necessary. During illness, family members rally around the ill individual and become involved in making decisions regarding where to seek healthcare and contribute different forms of support, including financial support. Thus, the family has a vitally important role in personal decision making around DSM. The family is critical in Nigeria because social safety nets are practically absent.

It was a common occurrence to see many of the patients coming to the clinics with their relatives. In my participant observation sessions, most of the patients—especially males—came with at least one or two relatives. Relatives were included in each patient's care. For example, patients said their daughters, sons, or grandchildren would check their blood glucose and give them insulin injections. This family orientation is depicted in the following quote:

> When patients come to the hospital, they come with, ehm, relatives, maybe father, the mother, sister, wife, or brother. A husband will come with his wife. A female may come with the daughter or son. They help to support that patient. (H1E02, P9, L9-P10 L5)

HCPs believed that family members act as caregivers, support patients financially, and give emotional and physical support. This ideal is demonstrated in the quote below:

> I have already said that most of the patients pay for their treatment. They may not be able to cope, carry the whole burden. They may not be able to do some of the things you tell them to do. Some of them may be completely helpless if they do not have relatives they can bring along to assist. (H1E03 P20 L25-P21, L4)

The involvement of patients' relatives had some value in this context. However, patients' relatives occasionally tried to protect the patients from facts or news about their condition that they considered upsetting, especially for older patients. For example, in the following field note excerpt, a relative tried to shield a patient by attempting to hide the fact that diabetes is incurable:

> An older woman in her mid-eighties walked into the clinic slowly but unaided; her granddaughter walked alongside her. In the treatment room, the doctor started to explain to them that diabetes affects the whole body. He stated that an organ of the body produces insulin, which is responsible for controlling the amount of glucose in the blood. He went on to explain the complications and how they occur. As soon as the doctor

> started the explanation, the daughter interjected and said in English, "Tell me, do not tell her because she is too emotional; I will know how to relay that to her." The patient asked, "my sugar (diabetes), has it been cured, or is it still there?" The doctor explained, "it is incurable; you will need to take your drugs regularly." The patient sighed in exasperation and said, "*Haa, o bu na o nweghi olila*?" ["so, does it mean that I will never be healed of this disease?"]. The daughter told the doctor, "Tell her that she will be cured." The doctor said, "No, I would tell her the facts, or she may stop taking her drugs." He explained to the patient what diabetes is, how it affects the body, and how it should be managed.
> (8/08/18 H1PO Field Note p. 11–12)

The doctor in the above quote confirmed that he had received similar requests, especially with the older adults; however, he never honoured such requests. The doctor added, "it cannot work with diabetes because patients need to be involved, and for them to be involved, they will need to understand the disease process." The daughter's request not to disclose this vital piece of information may have been influenced by her perception of diabetes as a hopeless condition.

Sometimes patients' relatives refused a particular form of treatment or strengthened the patient's resolve not to accept certain forms of treatment. The HCPs respected such decisions if the patient agreed with the family, as shown below:

> A patient in her mid-sixties came in to see the doctor. She came with a relative who helped her into the room and then waited for her at the reception. She was limping with the aid of a walking stick, and she wore slippers (flip-flops). FBS was 108mg/dl. Her left leg was blackened from the toes to about 5cm above the ankle. The doctor asked her if she had discussed with her children about the proposed surgery (amputation). She said that she had discussed it with them, and they said no to surgery. The doctor said she was

> booked for surgery, but since her children said no, the surgery was cancelled. The patient's response was as follows: "My children said that you people have not given me real treatment and that the wound will heal if properly treated." (09/03/18 Field Note)

The above incident was not unusual because family members are often involved in important decisions, even in those decisions that could mean the difference between life and death.

The notion of individual independence or individualism within the family is different in the Nigerian context. Family members have a say in one another's lives. Family members take part in important decisions regarding whether a treatment will be accepted or not and can override decisions made by HCPs. DSM, in this context, was not just an individual affair. Members of the family were involved with self-management activities such as meal planning and monitoring of blood glucose. Family members also helped to bear the cost of hospital treatment.

Myths and limited understanding of diabetes and its management. In addition to the belief in the supernatural origin of diabetes and individual-family interdependence, I witnessed a widespread lack of understanding of diabetes and its management among patients. For instance, during participant observation, I noticed that many patients did not know the standard parameters for blood glucose values and looked to the nurses for interpretation during FBS and FBS checks. I observed that HCPs often emphasized and reemphasized basic information about diabetes to patients, such as the current reality that diabetes has no cure. Some of these patients had lived with diabetes for more than 5 years. For example, a HCP said the following in an interview:

> At times, basic things you expect the patient to understand and know by the time they claim, they claim they do not understand, or maybe they do not understand. You keep on repeating and repeating. It is a challenge when you tell a patient what to do, and you explain, and you explain. You are sure that they understood what you told him or her,

> then the next time you are seeing him, he is coming with complications, or they are bringing him back in a coma. (H1E04, P26, L27 -P27, L1-10)

It was unclear whether patients and their family members experienced this repetition of basic information as an attempt to help them understand diabetes or whether it was experienced more like a conversational shut down using the power of professional knowledge. I saw both approaches used, often by the same HCP.

Patients often came with expectations of cure due to the general notion that every disease has a cure. For some patients, this initial misconception affected their understanding of diabetes, which was sometimes very difficult to change:

> Many people see diabetes as any other disease condition like malaria or typhoid fever that you will treat as soon as it is diagnosed. You give medications, and it is cured. We try to take our time to make them understand that diabetes is a different ball game; it lasts for life. However, even at that, because of culture, people do not believe that. They rather listen to people outside than believing what the doctor tells them. (H1E04, P10, L10-20)

Misconceptions of diabetes, along with cultural beliefs, resulted in patients listening to their families and others rather than their HCPs. The above quote suggests that HCPs tried to change the underlying cultural beliefs and practices through health education; however, a cognitive and rational discussion based on assumptions of knowledge held only by HCPs does not usually prevail when patients have more familiar, more reassuring, and deeply held lay beliefs regarding diseases and their evolution. The practicalities of everyday life, such as financial hardships, high cost of hospital care, and absence of health insurance, may make other explanations appealing.

Lack of health insurance and poverty. Many patients who visited the two hospitals paid out of pocket for their treatment. The health insurance scheme in Nigeria is limited in scope and only caters to employees of the federal government and the organized private sector (Fasanmade & Dagogo-Jack, 2015). The number of people with health insurance comprised a tiny fraction of the patients who attended the clinics. Both hospitals have specific fees that are mandatory, and patients are required to show their proof of payment before seeing a HCP.

All participating HCPs discussed the limiting influence of patients' poverty on HCPs' ability to provide adequate support to patients and patients' ability to manage. Many of the patients who visited these hospitals struggled to meet the demands of affording hospital bills, prescribed drugs, lab investigations, glucometers, and test strips.

At the time of this study, a person who took oral diabetes medications—such as Metformin 1000 mg twice daily and Glibenclamide 5 mg daily—and checked his or her blood glucose twice daily would spend about ₦15,000 (CAD 54) every month. Many patients are limited in their ability to manage their diabetes due to cost. The recently approved minimum wage in Nigeria is ₦30,000 (CAD 108). A person who earns ₦30,000 or an average income of about ₦43,000 (156 CAD) may also have the responsibility of providing for his or her family in addition to bearing the cost of his or her treatment. Table 3 presents typical costs in Naira for standard diabetes equipment and medication.

Table 3
Breakdown of the Monetary Cost of Managing Diabetes in Nigeria

Item	Cost in Naira	Monthly requirements	Monthly cost (₦)	Monthly cost $CAD
1000mg of Metformin (Pack of 30 tablets)	₦ 3,800	60	₦7,600	$27.5
5mg of glibenclamide (Pack of 100 tablets)	₦ 2,500	30	₦800	$3
Accucheck glucometer	₦ 10,000			
One pack of 50 glucometer strips	₦ 5,500	60 (BD tests)	₦6000	$22
A pack of 1000 lancets	₦ 1,200	60	₦600	$2.0
Total cost			**₦15,000**	**$54**

The implication of a total cost of ₦15,000 (54 CAD) monthly on drugs and strips is that minimum wage earners on oral antihyperglycemic agents who test twice a day spend about 50% of their monthly earnings on medications alone. This estimate does not account for patients who have comorbidities and need to procure other medications to cover other medical conditions. Fasanmade, Odeniyi, Amira, and Okubadejo (2003) noted that about 60% of Nigerians with diabetes are hypertensive and more than 90% have some form of lipidemia. A person with diabetes and renal failure or diabetes and hypertension will also procure the necessary medications and pay for laboratory investigations and possibly procedures such as dialysis. Incidentally, some of these patients are pensioners or unemployed and do not have a regular income.

These figures have grave consequences. Uloko et al. (2018) determined by a systematic review and meta-analysis of population-based studies that about 11,000,000 people in Nigeria had diabetes. Most Nigerians with diabetes are poor and can barely afford the financial cost of their disease management. According to many of the participants in this study, patients' inability to purchase required drugs, supplies, lab investigations, and other fees limited HCPs' capacity to provide ideal care. HCPs' views on patients' lack of resources and the impact this has on HCPs' ability to support patients are summed up in compiled excerpts from one participant below:

> Due to financial constraints, they do not have, ehm, glucometers; sometimes it is difficult to monitor their blood glucose because I will not be able to make adjustments in their treatment that I would like to do because they do not have a proper glycemic profile that they have been doing before they came to the clinic. So sometimes, we are forced to use FBS done on presentation to make the adjustment. That is not adequate, like what the profile has been like, maybe over a week or two at home, that will guide us in making better decisions. We request for HbA1C, eh, it is done every three months or every quarter; however, ehm, cost is also a constraint. Most of our patients pay out of their pockets, and the cost of doing it is also exorbitant, and sometimes they do not have that result that would have been used for adjustment. (H1E02, P7, L20- P8L19)

Poverty is more pronounced in Hospital Two, which receives less funding than Hospital One and serves a poorer community. Hospital One is owned by a state government; in Nigeria, federal government-owned institutions receive much better funding than those owned by state governments. This situation results from the fact that more significant revenue accrues to the federal government than the various state governments. Participants explained that inadequate funding was evident in the comparatively fewer staff who worked in Hospital Two. Patients' inability to afford medical bills and drugs was also more visible in Hospital Two.

It was difficult for patients to access hospital care without running the risk of financial hardship, especially considering the high cost of hospital care, the absence of health insurance, and the long-term nature of diabetes. For many patients who are already poor, the risk of incurring further financial hardship becomes a disincentive for engaging in self-monitoring of blood glucose, adequate medication management, and regular follow-up visits. With conflicting cultural beliefs and the absence of health insurance, many patients resort to religious or alternative healing. In the following quote, a HCP described poverty as the primary reason for patients’ “wrong courses of actions” or seeking alternative solutions to their medical problem:

> Poverty makes people think the wrong way; if you are telling somebody you have BP (hypertension), it can lead to CVA, the boy will go to church and claim, “it is not my portion.” Whose portion is it going to be? (H2E01P17, L5-8)

The excerpt above indicates that the first response of many individuals who experience both diabetes and poverty is an appeal to a greater power to solve the problem. HCPs regarded this response as resistance or denial of diabetes. Another participant explained that poverty causes a delay in seeking treatment, which results in complications. According to this participant, some patients do not come for follow-up visits and do not take their medications. This HCP also believed that excessive reliance on religion and religious leaders for healing are fueled by poverty, as highlighted below:

> Nigerians will only come when they are down. And even when they are down, they still go to the church and imagine the pastor takes it. The pastor will tell them, “I am taking them (illness) away,” and some of them [pastor] will even tell them they are healed, even when they are dying. (H2EO1 P21, L19-21)

Poverty and its effects played out daily at the clinics. In some of these clinic encounters, I observed that patients skipped their medications for weeks or even a full month due to their inability to afford prescribed medications. Some patients went without necessary laboratory investigations due to their inability to afford the payment. One of the HCPs in Hospital One felt that the real problem for some of the patients was ignorance or lack of belief or trust in the efficacy of proposed treatment. HCPs believed that such patients might indeed be able to provide for their medical needs if adequately educated: "Some of the patients who you think are poor are not poor, maybe they are not well informed. If they get well informed, those things we are looking for may start coming out" (H1E01, P9, L26-29).

HCPs confirmed that patients engaged in spiritual actions, combined biomedicine, ethnomedicine, and faith healing, and sometimes abandoned medical treatment. HCPs attributed these behaviours to both inabilities to afford hospital treatment and cultural beliefs.

The structure of diabetes care. This subtheme describes how diabetes care is organized within and outside the hospitals. In these settings, all diabetes care is provided within the hospital. No resources outside the hospital provided ongoing support for persons with diabetes. There is a state chapter of DAN; however, the organization is focused more on creating awareness about diabetes and occasionally conducting free blood sugar tests and referrals. The local chapter of DAN has recently begun to incorporate patients into the group. DAN holds radio programs on diabetes education and conducts awareness activities on World Diabetes Day, as explained below.

> At least once a year, they [DAN] go to the radio station and tell people about diabetes, management, and the complications. The last time was a contribution from certain people, which they [DAN] used to pay for the airtime. But it was part of DAN activities, and it was on World Diabetes Day. Last year we went to [name of radio station] and [name of radio station], and then the National Television Authority (NTA). The audience was the general masses. The topic was specific to diabetes, but anybody could listen to it. (2nd Interview H1E04, P1 L13-P2L8)

Endocrinologists are specialists in diabetes management and provide care to persons with diabetes and other endocrine disorders; other HCPs do not have any certification or specialized training in diabetes management or SMS. The same group of nurses, dieticians, and health educators who work in the endocrinology clinic also work with patients in the other units within the MOPD. An endocrinologist is head of the diabetes clinic. Patients primarily go to the clinic to see the endocrinologist, except when the endocrinologist refers them to see another HCP, especially the dietician. Participants discussed the lack of structure for providing ongoing support to patients beyond the hospital or in the community. Participants suggested that patients may not obtain the continued support they need to manage their condition daily without continued contact.

In summary, participants in both hospitals practiced in settings with unique cultural beliefs and practices and social barriers such as lack of health insurance and the absence of specialized structures for providing ongoing education and other forms of support for patients. Both HCPs and patients were constrained due to patients' lack of health insurance and difficulty sustaining hospital treatment costs by patients. No extra resources were dedicated to meeting the specialized needs of patients. For instance, the hospitals did not provide DSME or support training for HCPs. No resources were available to provide ongoing SMS within the hospital or the community, except for the brief clinic encounter that occasionally occurred during follow-up visits. The social, cultural, and workplace context in which the participating HCPs practiced undoubtedly influenced SMS experiences and practices.

Navigating the sociocultural terrain. This theme describes how Nigerian HCPs provide SMS to persons with diabetes within the social and cultural environment in which they practice. Participating HCPs combined cultural beliefs and practices and medical beliefs when these beliefs did not harm the patient. However, HCPs actively discouraged patients from undertaking lay practices when these practices were perceived as harmful.

As individuals and members of the community, the HCPs shared many of their patients' beliefs and values; for instance, the firm reliance on God, belief in the efficacy of herbs, and a strong family orientation were common in the community. HCPs' advice to patients to continue or not continue a cultural practice depended on whether the practice was considered harmful to health from the medical point of view. HCPs tried to straddle the two worlds of medical and traditional cultural practices by acknowledging patients' beliefs while encouraging them to combine remedies from both models. The "navigating the sociocultural terrain" theme has three subthemes: (a) allowing judicious use of herbs, (b) involving God and prayer in patient care, and (c) family involvement.

Allowing judicious use of herbs. Participants included patients' cultural practices in treatment by accommodating patients' use of vegetables and herbs to treat diabetes. However, the above practice is not uniformly encouraged due to lack of scientific evaluation and the unknown side effects of these herbs and vegetables, as highlighted below:

> The first one I told you is this *onugbu*, the bitter leaf [*Vernonia amygdalina*]. Then all these food supplements. Because of the misconception they have, they believe when they take it, they will be cured of diabetes. The problem, too, is that some of them abandon their drugs and start taking all those things. We tell them that all those things are not the proper way of treating diabetes. We tell them that those things even have side effects. They can even affect their liver, their kidney, and things like that, and even if those things have effects on lowering blood sugar, they do not know the appropriate dose to use and

> things like that, so it is better to use the drugs that are already tested and be coming for their checkups so that medical personnel will monitor them.
>
> (2nd interview H1E04, P3, L15-18, L23-25; P4, L4-7)

On the other hand, dieticians believed that some vegetables and herbs like bitter leaf and scent leaf (*Ocimum Gratissimum*) are simply vegetables; however, dieticians encouraged patients to modify the way they consumed the herbs. For instance, instead of washing the herbs and drinking the herb juice, dieticians encouraged patients to blend the vegetables and herbs and drink the juice with the fibre. The above practice is permitted by dieticians due to the supposed beneficial effects of the fibre on blood sugar, rather than any benefit from the juice as patients widely assume:

> They take *onugbu*, and *nchanwu*, also known as scent leaf; it is what some patients usually do these days. They squeeze out the water from *onugbu* and *nchanwu* and drink them. I tell them they should grind the *onugbu* with the fibres, and in small quantities, they can eat them. So when they come, we tell them that it is not right; they have to wash it very well, grind it together, and not remove anything. (2nd interview, H1D01 P4, L7-18)

All the participating HCPs actively discouraged patients from abandoning their medical treatment for any cultural belief or practice. Alongside their medical training, many HCPs believed in God and God's infinite power to do all things. HCPs felt free to engage in discussions about religion when it arose in their encounters with patients.

Involving God and prayer in patient care. HCPs leveraged patients' spiritual beliefs to support and encourage patients while offering the biomedical model of care as the primary standard of care. For instance, doctors encouraged patients not to abandon their prescribed medications but rather to combine prayers and medications:

> But we tell them that even if you have such beliefs [believe that praying will heal you], try and combine it with the orthodox way of treating this condition. We still pray. Because it is God that cures them, and it is also God that gives the knowledge and wisdom to discover those drugs that are being used. So that is what I tell them.
>
> (2nd interview, HIE03 P4 L23-P5)

Belief in God was used as a strategy to encourage patients to have hope and to endure the distress caused by diabetes but not at the expense of the secular care that hospitals primarily rendered. This approach is highlighted in the quote below:

> Some of us doctors are spiritually inclined; we also talk to them on that note, using spiritual tactics, but that will not be at the expense of the real physical thing they have come to know. Somebody like me, I know that there are spiritual aspects of many things, virtually everything, but these are things you cannot prove physically; it is by faith. You can try to explain to people that some things have a spiritual relationship, but they, as humans, have a role to play. (2nd interview H1E03)

In the following quote, the participant explained that spiritual well-being was also essential for a patient's overall health, even when the manifestations of the patient's disease were essentially physical:

> I try to encourage people spiritually and psychologically, and emotionally. You know health, as defined by the WHO, is not just a state of physical wellbeing but also has a spiritual and psychological component. I encourage people. I give them hope and tell them that we usually say that medical people care, but God heals. Those of us who are

> into the religious belief that God can do any form of miracle, God can heal anybody, so when we talk to people, we encourage them. Even if they are not physically healed, spiritually, and psychologically they will be encouraged.
>
> (2nd interview H1E03 P4, L4- P5 L17)

HCPs supported patients in the use of prayers; however, HCPs also emphasized the need for patients to comply with medical instructions concerning diet and medications.

Most people in the southeastern part of Nigeria practice Christianity. HCPs incorporated prayers in their clinic activities. For instance, health educators sang Christian songs and prayed with patients before initiating health education, as I observed regularly:

> The reception was full, and people were talking among themselves, and patients, as well as HCPs, were walking around. The health educator stood in front of the audience and called for attention. She prayed, thanking God for life and asking God to use the doctors and nurses to bring healing to the patients. After praying, she asked the audience to stop the noise and pay attention. She told them that the topic for the week was low back pain.
>
> (H1PO Field Note)

HCPs referred to God as the "ultimate healer" in their interaction with patients. In the following patient-HCP encounter, one of the participants suggested that the patient could find healing through prayer:

> Patient: "I have not been coming here because of money. I know how I got the money to be here today."
>
> Dr: "What of your relations, brother and sisters?"
>
> Patient: [scoffs] "They do not have enough."
>
> Dr: "What of your church?"

> Patient: "It is a small church, and we are very few and poor."
>
> Dr: "Tell your pastor, you never know who will help, it may not be money, he may just pray for you, and you will be well." (08/16/2018 HIPO Field Note)

All of the HCPs in this context did not share a belief in the supernatural origin of diabetes; however, most believed that God was the ultimate healer and that God can bring a total cure for all ailments, including diabetes. As such, HCPs subscribed to the common belief in God to give patients hope of everyday life despite diabetes. Besides religion, other cultural practices such as family orientation were also integrated into supporting patients by HCPs.

Family involvement. HCPs in this setting actively encouraged patients to come to the hospital with their relatives and talked to relatives alongside patients. HCPs believed that patients managed better when patients worked together with their family members. Additionally, HCPs sometimes provided education to relatives on self-management tasks such as blood glucose checks, insulin injection, and dietary management. The expectation was that those family members would encourage patients and reinforce HCPs' teachings at home. Additionally, this group's traditional cultural gender norms meant that female relatives, such as mothers, sisters, or sisters-in-law, were responsible for meal preparation. HCPs educated family members—especially female spouses, daughters, or grandchildren—about the diet requirements and encouraged family members to help patients adhere to the recommended diet:

> We tell the patients to come with their relatives and also educate them and tell them their needs. Some people come alone to the hospital, and I feel such people should be accompanied to the hospital by a family member. When they come alone, I tell them to come with their relatives. Then we educate them, tell them that the person needs help. (H1E03, P14, L17-23)

Some patients could not administer their insulin or check their blood glucose. In such cases, the patient's family members were taught and encouraged to assist with these self-management tasks, as narrated below:

> If it is those [patients] on insulin, some people outrightly refuse to give themselves insulin. So, we get their relatives to give them. Then, when we are in the wards [in-patient], we teach them and teach their relatives how to administer insulin. (H1E03, P27, L23-P28L4)

Family members were also invited into the treatment room when there was a significant decision to make regarding managing a patient's condition, especially when the proposed treatment was expected to cause emotional distress. HCPs, especially doctors, usually invited patients' relatives to explain the treatment to the patient and their relatives, convince the patient that the proposed treatment is beneficial, and have the relatives further convince the patient. One endocrinologist explained that he usually invites the patient's relatives to explain the patient's condition. However, this situation was usually for more extreme conditions, such as when treatment warranted amputation. Patients did not readily agree to amputation. Some cases involving amputations resulting from leg gangrene or foot ulcers entailed negotiation and attempts to convince the patients and relatives that amputation was the best course of action. Sometimes HCPs brought in other family members or people close to the patient to help reason with the patient or convince the patient of the need for amputation. Family members advocated for their loved ones by refusing forms of treatment which they perceived as distressing; however, in many situations, the conflict was resolved when HCPs involved the family in decision-making, as in the excerpt below:

> Ehm most of our, some of our patients do not want to oblige with amputation for both spiritual or cultural reasons, so these are part of the challenges we have. However, we counsel them, ehm, bring in their relatives, talk to their relatives, ehm some eventually agree, you know, agree to the treatment, others do not, and eventually, they die.
>
> (H2E01 P18, L 13-21)

Although HCPs involved families in obtaining the patient's consent to ensure everyone was in consensus, the process through which this was achieved was through persuasion and HCPs using their positions as experts to convince patients and their relatives that the HCPs' chosen course of action was in the patient's best interest. This method did not always work; some patients refused amputation and eventually died of their complications.

In sum, HCPs in both study settings used different strategies to accommodate the social and cultural context in which they practiced. Prevailing values such as belief in God and belief in the efficacy of herbs were integrated into SMS. Family members were also involved because they were brought in to support or convince patients when necessary. The family was an important stakeholder in diabetes management. HCPs actively encouraged patients to come with their family members as an SMS strategy. At the clinic, HCPs encouraged relatives to assist patients physically, psychologically, and financially; however, sometimes relatives hindered treatment. Notwithstanding, HCPs still endeavoured to incorporate patient's relatives in order to support patient care.

Compliance-oriented medical model approach. This theme emerged from the perspectives of HCPs and their approach, including values, assumptions, norms, and practices related to diabetes SMS. In this context, SMS seems to be equated with getting patients to comply with medical instructions. HCPs in these settings perceived SMS as controlling patients' blood sugar levels within commonly used parameters and preventing worsening of complications. HCPs identified themselves as experts responsible for diagnosing the illness, mapping out treatment goals, and planning for patients while ensuring that patients complied with their instructions. Health education and diet counselling provided to patients in the clinics were meant to give patients the necessary information about diabetes and details about what patients must do to regulate their blood sugar. Even with the focus on disease control, HCPs rarely helped patients develop problem-solving skills to deal with situations they might encounter while managing their disease. These attributes reflect the traditional compliance-oriented medical model approach to disease management (Anderson, 1995; Funnell & Anderson, 2004; Wagner et al., 2001). The subthemes include (a) priority on normal blood glucose, (b) focus on compliance, (c) HCPs as experts, and (d) SMS as advice, informal counselling and education.

Priority on normal blood glucose and other physiological values. Participants in both settings tended to focus on keeping FBS, RBS, HbA1C, and other laboratory results within specified ranges. Participants discussed their goal of SMS, which was to reduce patients' blood glucose level and prevent complications, as one of the dieticians noted:

> What I aim to achieve is to get their blood sugar level normal and maintain nutritional status, mainly to maintain their nutritional status. My goal is to get that person's blood sugar normal; do you understand? Moreover, to avoid future complications too.
> (H1D02, P6, L10-16)

HCPs' interpretations of the patient's biomedical results were the primary focus of care and influenced the support that HCPs offered. For instance, on follow-up visits, only patients with abnormal test results were given brief lectures on diabetes and its management. HCPs in these settings generally assumed that persons with normal blood glucose results were managing well and needed no extra education. In contrast, it was assumed that persons with abnormal values were not managing well and therefore needed support:

> Most times, we find that patients with diabetes also, most of them have, ehm, have raised BP, so it is crucial that we know so that we can advise the patient, then check the blood sugar, so that you generally know what the patient is like [INT- ok], then advise any abnormal sign. (H1NO1, P2, L3-10)

Conversations between patients and HCPs centred on the patient's biomedical results. Patient discussions about their feelings regarding diabetes and how the disease affected other aspects of their lives were not usually encouraged. Instead, HCPs often redirected the conversation to patients' symptoms and the need for adherence to their prescribed medications, as shown in the field note observation excerpt below:

> The patient was a woman in her late fifties. She was visually impaired in one eye, and tears were coming from that eye, which she continually wiped with a handkerchief. She came in and sat down, and the following conversation ensued:
>
>> Patient: "My husband's brother's wife told me four years ago, while we were quarrelling, that I will go blind. Now I am having problems with my eye."
>>
>> Dr: "Which drugs are you on?"
>>
>> Patient: "I came with my drugs." She looked inside her bag and said, "Glucophage and insulin."
>>
>> Dr: "I thought you were asked to stop Glucophage?"
>>
>> Patient: "If I stop it, what will I be taking?"

Dr: "You have a kidney problem; it was boldly written in your folder a month ago. Which type of insulin do you take?"

Patient: "Mix, Mixta," she stammers but eventually mentions "mixtard insulin."

Dr: "What dose do you take?"

Patient: "12 U morning, 8U night."

Dr: "Did you take it yesterday?"

Patient: "I have not taken it this week; I took it last a week ago."

Dr: "Why?"

Patient: "Is it not money that I will use to buy it? Besides, this insulin disturbs me; it gives me body ache."

Dr: "Any fever?"

Patient: "No, but I have headaches. They say that it is '*Okiri-mgbawa-isi*' [a native name for a severe headache supposedly inflicted on one by evil people or by evil power].

Dr: "Your BP is very high 190/100mmmHg; when last did you take your antihypertensive?"

Patient: "Last two weeks."

The doctor, frowning, faced the patient and said in a normal tone, "Go and see what is happening in the casualty [Emergency Department], that is where people that do not take care of themselves end, then that money that you do not want to spend will come out by force." The doctor continued, "stroke does not know that you have an eye problem. Your blood sugar is high, your blood pressure high; this combination comes with stroke." (08/16/2018 H1PO Field note)

The HCP above expected compliance from patients and manifested signs of frustration when there was a difference between his expectations and what the patient was doing. This quote illustrates the forceful attempts by a physician for compliance with his direction without exploring other influences on the person's life.

Focus on compliance: Patients must do as they are told. Participants in both clinics discussed their expectations of patients complying with their instructions; therefore, the focus of SMS appeared to be on getting patients to obey medical instructions. Participants believed that they knew what was best for the patients. Participants also believed that patients needed to do as they were told to manage their conditions effectively. Participants considered compliance with medical prescriptions to be a hallmark of good self-management. For instance, dietitians gave patients a diet guide to which they must adhere. During my participant observation sessions, questions from doctors such as, "Have you seen the dietician?" and "Do you obey her instructions?" were common. Physician participants believed that their role was to diagnose, decide on the management plan, and ensure that the patient carried out the treatment as prescribed:

> Our goal is to make the diagnosis, confirm the diagnosis, then harness a management plan for the person. When you start the management plan, you keep on monitoring the patient by giving an appointment. The patient's role is to adhere to the instructions. (H1E04 P7, L6-10; P8, L14-19)

Patients were expected to follow the dietary advice given by HCPs to keep their blood sugar levels under control, as is exemplified in the quote below:

> My ideal patient is a patient that adheres to the counselling given to him or her. A patient that complies, yes, if the patient adheres to the quantity of food prescribed and the

> method of cooking their food too, their blood sugar will be coming close to normal. (H1D03 P7, L 20-26)

Participants believed that a patient's blood sugar was controllable if the patient did as they were told in terms of diet and medications. Patients were expected to readily accept what they are told and operate strictly within the confines of the medical instructions. In the quote below, the participant spoke to the level of trust and confidence patients should have in the hospital staff and the staff's guidance, orders, and advice. Essentially, individuals who came to the clinic were assumed to be ready, willing, and able to follow self-management instructions:

> You know, when patients are not doing what they are supposed to do, not doing what they are told to do, it becomes a challenge. We are not happy because we are not achieving the aim. The solution is that if a patient is coming to the hospital, let the patient gear up his mind that anything he is told in the hospital to do, he should do it. (H2E02, P13, L1-L2)

In the following quote, a participant described persons who refused to abide by the instructions or asked too many questions as "difficult." Difficult patients were those with differing opinions, who insisted on asking questions, or who attempted to "waste" HCPs' time with tangential or "irrelevant matters," as highlighted below:

> Our challenge here is that sometimes they will not agree with you. When you say what they should do, they will say no, I cannot do this, that kind of thing. That is our challenge here. If you get a diabetic patient that is so difficult to handle, they will be asking questions and questions; some will start telling you stories, (and) time will go. (H2DO1 P8, L1-3; P9, L17-19)

In the quote above, education does not appear to be understood as an interactive process. In many of the quotes, study participants used the terms "compliance" and "adherence" interchangeably. Compliance has been defined in the literature as the extent to which a patient's behaviour matches HCPs' recommendations, whereas adherence is the degree to which the actions of patients match the agreed plan or recommendation (Horne, Weinman, Barber, Elliot, & Morgan, 2005). In the quotes above, it is clear that patients were expected to be passive and do as they were told; HCPs made treatment decisions and plans based on what they believed was the best for patients. HCPs then gave medical advice and instructions to patients who were expected to carry out the instructions for their good. In both research settings, treatment goals and instructions were given with little or no contribution from the patients, which was congruent with the definition of compliance.

HCPs as experts: HCPs know what is best for patients. HCPs believed that they knew what was best for patients. For instance, during diet counselling, patients were given a rigid generic diabetes guide with stringent specifications on the type and quantity of food that could be consumed:

> We have a guide, a rule, a written guide which is given to them individually, which contains the individual measurements and quantities of food. In the guide, you will see the dos and don'ts, the foods to eat, and what not to eat at all. They will have the paper with them. Anywhere they go, they carry it and study it. Each time they come, they can ask questions, and you answer their questions. (H1D01 P6, L15-23)

In the quote above, a dietician explained that each patient in diet counselling was given a copy of the diet guide to take home. The same guide was given to all patients; however, the diet guide was slightly modified if the patient had another medical condition. For instance, for a patient with diabetes and hypertension, the dietician would make a side note to reduce salt and fat intake. The slight modification based on the existence of a secondary diagnosis was described as individualizing.

Dieticians believed that patients only needed the diet guide, which listed different food items and quantities to be eaten per meal. Neither clinic provided a simple, practical meal planning tool that would give patients flexibility and a variety of options in making dietary choices. Dieticians thought that a diabetic food exchange list (a standard meal planning tool that usually includes a long list of exchangeable foods according to their group and caloric content) was unnecessary. The diabetic food exchange list guides individuals with diabetes in creating a meal with various choices while ensuring that the consumption of carbohydrates is controlled (Manzella & Sweigard, 2020). Dieticians believed that the food exchange list was too complicated for patients to use. Dieticians assumed that they were better suited for problem-solving rather than the patient or family. This idea is highlighted below in the context of diet education. I had asked if the food exchange list was introduced to patients, and the response was that only the dieticians were sufficiently educated to use the food exchange list:

> Why will you put the food exchange list in a diet guide you are giving patients? They don't need the food exchange list. What we are teaching them is what to eat and what not to eat. So, it is not everything dieticians know that we put in that thing. It is the dietician that will use the food exchange list when needed. The only thing they want to know is the ones not to eat at all and the ones to eat as they like. Even ones they should eat in limited quantity, they do not even value the quantity, because we use to show them [a] cup that will be easy for them to measure. (2nd interview H1DO1 P21, L4-8; P23, L6-9)

In the above quote, a dietician explained that patients only needed to know the specific foods to eat, those to avoid, and the measurements for each type of food. This explanation appears to be based on the assumption that the HCPs, particularly dietitians, were familiar enough with local cuisine to understand what foods were available, economical, and appropriate for a diabetes diet. Thus, the dietitians did not perceive any need for a food exchange list with its many options. Patients, on the other hand, expressed skepticism at the rigidity of the diet guide, as shown in the field note excerpt below:

> The dietician showed her the cup and listed the different measurements; under those to be eaten in moderation, she mentioned groundnut, *ukwa* (breadfruit), *ukpa* (black walnut), "you may eat salad without the cream/dressing." "*Ukpa!*" the woman exclaimed, "but I use that as a snack." She opened her bag and showed the dietician; she had about seven pieces of it. The dietician told her that when she eats the *ukpa*, she should assume that she has eaten an entire meal based on the carbohydrate content. "*O gakwa ekwe omume?*" ["Is what you are saying doable?"], the woman said. The dietician told her that the stomach is elastic, it adjusts to whatever quantity of food you put into it, and so it is doable. (HIPO Field Note 09/03/18)

Other patients refused outright to follow the guide and instead attempted to manage food exchanges themselves. Such patients believed that the diet guide was not feasible. During one of my observation sessions, I had an informal conversation with a patient who admitted that she did not follow the dietician's order:

> She said, "I saw the dietician only once; she showed me how to measure what I will be eating, but what she showed me was too small. I will die of hunger if I go by that, so I manage my diet on my own." (H1PO Field Note 08/27/20)

By withholding the food exchange list and instead writing specific foods and measurements of food to be taken by patients, HCPs strengthened their control over patients' choices and behaviour rather than helping patients learn to make informed choices about their diet. Unfortunately, most self-care decisions that directly influence the health of people with diabetes are outside the control of HCPs because patients spend most of their life outside the hospital.

Diabetes care in both clinics revolved around HCPs, who decided what was right for patients. SMS decisions and outcomes were focused on biomedical indicators, which were selected and monitored by HCPs. The SMS decisions reflected the HCPs' treatment goals and plan, which did not always incorporate patients' goals and priorities.

SMS as advice, informal counselling, and health education. HCPs provided advice, education, and informal counselling with a common goal of convincing patients to accept their diagnosis and comply with medical advice. HCPs in both hospitals had varying opinions about SMS. However, all HCPs generally viewed SMS as providing information to patients because they believed that knowledge was the basis for effective management. Nurses, dieticians, and health educators had a broader view; they perceived SMS as providing both education, informal and spiritual counselling, and advice to patients, whereas doctors focused more on delivering knowledge-based education or instructions.

HCPs educated patients by providing medical information to patients about diabetes, such as information about the signs and symptoms of diabetes, complications, and modes of treatment. HCPs referred to their actions as "advice" when they gave their opinions to patients, such as encouraging patients to adhere to the instructions or making suggestions about what patients should or should not do. For instance, HCPs advised patients to follow through with the dietary specifications, even if the specifications seemed daunting to the patients.

Participants saw themselves as engaging in informal psychological counselling when they talked to patients to help patients accept their condition. During counselling, HCPs told patients that the diagnosis of diabetes was not a death sentence and that people could live with diabetes for many years if they adhered to drug and other medical instructions. In the following quote, a dietician described how they provided counselling and the condition for which they counselled patients in the clinic:

> Some of them will be very sad as if they are dying today or tomorrow. Then we start counselling them; we tell them this is not the end of the world. Some people have been with the disease for 30 years, and I know a man that has diabetes from the day he was born, and now he is 74 years old, and he does not feel that way. It is when you are not under control that you face problems, we start telling them that they will live a long life, just for them to know that it is not dangerous like other diseases. Most of them, when you tell them that they have diabetes, they think they are going to die tomorrow. When they come, we start telling them; we, first of all, counsel them psychologically before we start telling them what to eat. That is why once they see the dieticians when they come to the clinic the next day, you will see life in them. Some of them will just be walking with their head down, thinking that they will die. I tell them that they can get better.
>
> (2nd interview H1D01 P11, L10-21)

Counselling was primarily provided to patients in the early stages of their diagnosis when patients were still struggling to accept their diagnosis. As shown above, HCPs believed that counselling helped patients accept their condition. One of the patients in Hospital Two had the following to say about the counselling he received from a doctor and a dietician:

> When I was newly diagnosed, I nearly died. I was depressed, but the doctor then helped me by counselling me and telling me that diabetes is not a death sentence. That once I keep to my drugs and diet, I will be fine. I benefitted from the counselling the doctor gave me and from the dietician's counselling. (09/19/18 H2PO)

Participants considered patients' acceptance of their condition important because of the cultural beliefs associated with chronic illness. The primary strategy to achieve acceptance was reassurance through education and repeated assertion that diabetes was not invariably fatal and could be managed well. Doctors perceived SMS as mainly providing health education to patients. One participant stated the following regarding SMS as providing instructions:

> SMS is education *nah* [a kind of Nigerian pidgin expression meaning, 'all right'] that is the main thing there. Adequate health education then, whatever you tell the patients, the patients should try to carry out those things. So, the major role of the doctor is to give instructions and educate the patients. (H1E04, P12, L17-21)

The bulk of diabetes education was mainly provided during HCPs' first contact with patients when the diagnosis was newly made, as this endocrinologist explained:

> How we do that [provide SMS] is by educating them more after making the diagnosis of diabetes. If that is the first time of diagnosing diabetes, we educate the patient on the condition called diabetes by telling them that diabetes is a lifelong condition, not like acute diseases like malaria that you can just treat, and it has gone. But for a condition like diabetes, it is for life. Then you now talk to the patient about adhering to medications and other instructions, and they need to be coming for a check-up. (H1E04, P8, L16-25)

Participants believed that health education, psychological counselling, and advice could be used in tandem to help patients understand their disease, accept it, and comply with HCPs' medical instructions. Some doctors expressed the opinion that patients should be actively involved in their diabetes management. However, this involvement primarily referred to blood glucose monitoring while complying with medical instructions in other areas. Diabetes education was the primary form of support discussed and practiced by all the HCPs in both settings.

All subthemes—priority on normal blood glucose, focus on compliance, HCPs as experts, and SMS as advice, informal counselling, and education—are subsumed under the compliance-oriented medical model approach theme. A compliance approach was characterized in the literature as a paternalistic approach to medical care. HCPs functioned as experts and primary decision-makers, with patients relying on HCPs' professional knowledge and goodwill (Wagner et al., 2001). With the focus on disease control, HCPs assume superior authority based on their professional knowledge and expertise. Participating HCPs' experiences and practice of SMS were affected by their compliance perspective and the unique context in which they practiced.

SMS within the context of the traditional hierarchical structure. The fourth theme involved the participants' experiences as they attempted to provide SMS within a generalized system designed for acute disease management. Both endocrinology clinics were structured the same as other outpatient clinics within the two hospitals in terms of staffing and clinic processes. As a result, participants worked to provide SMS to patients in a generalized system that offered no extra accommodations for managing persons with diabetes. Subthemes here include role validity, role boundaries and teamwork, inertia in HCP and organization, and lack of infrastructure.

Role validity, role boundaries, and teamwork. The absence of a designated discipline or person for diabetes education gave rise to a situation in which it was unclear who does or should carry out diabetes education. Some of the participating doctors believed that doctors were the only ones who provided diabetes-specific education to patients in the clinics and that other healthcare professionals contributed little or nothing in terms of delivering diabetes-specific education. This belief is shown in remarks by one physician participant:

> Well, patient management is multidisciplinary; it is not done by one particular healthcare professional, the educators, healthcare educators should, eh, play major roles, but it is as if the primary physician, endocrinologist does everything, almost everything; sometimes [also] the dietary education is done by us. (H1E01 P6, L9-12)

Another physician participant made a similar remark, "Actually, the detailed information is supposed to come from the diabetic educator, but there is no dedicated person in the clinic. It is only the doctors [who] do [as] much as they can" (H1E04 P4 L10-11).

Participating resident doctors in Hospital Two believed that they had the necessary knowledge to provide diet counselling; therefore, they offered dietary advice to patients and only referred patients to dieticians when patients had additional conditions such as obesity and other health conditions: "Extreme cases only, like obese patients, are referred to the nutritionist, somebody who is grossly obese patients who cannot help themselves … you ask them to see the nutritionist so that they can do some more serious things" (H2E01, P2, L25-P3 L9).

Patients in both hospitals were referred to the dietician once after diagnosis. Doctors and nurses subsequently reinforced dietary advice by giving general instructions such as "eat less of carbohydrates," "avoid sugary things," or "reduce the quantity of food you eat." HCPs conducted dietary counselling in both clinics to show or tell patients the kind of foods to avoid, what to eat, and the amount of specific foods to eat. Most dietary education was usually completed in one visit. HCPs did not structure diet counselling to (a) determine what worked for the patient, (b) teach the patient how to count carbohydrates, (c) enable patients to balance diet, medications, and exercise, (d) facilitate the integration of diabetes into patients' daily lives, or (e) teach patients how to problem solve everyday challenges. Instead, dietary counselling was considered effective in both settings when patients complied with the diet guide's directives.

My observation was that doctors, nurses, and dieticians all provided some form of dietary counselling or dietary education because no specialized knowledge or skill was involved. I observed that dietary counselling in both settings tended not to be experienced as an ongoing process but was merely a repetition of the instruction to completely follow the diet guide. Hence, dietary counselling was generally completed in one visit. I shadowed three different dieticians and one nutritionist in both hospitals. During that time, almost all the patients who came for diet counselling were newly diagnosed. The dieticians shared that patients did call the dietician or visit again to ask if they could eat a particular food if the food was not included in the diet guide. In the quote below, the doctor corroborated the one-time referral but stressed that dieticians have the authority to call patients back for further counselling:

> At least, they should see a dietician once a year. When patients come for the first visit, we give them a referral to see a dietician. After having a session with them, the dietician will have an idea of those who will comply and those who will not comply and those who will receive additional education. (H1E03, P15, L18-24)

In informal interviews to clarify the current reality of follow up visits for dietary counselling, the dieticians explained that when patients pay to see them, that one-time payment gives the patient access to diet counselling for a full year. However, I observed that this information was not well communicated to the patients and other HCPs, as many patients were reluctant to make the payment. Some of the HCPs I spoke with also appeared ignorant of this provision for multiple visits for diet counselling with one payment. Dieticians in both hospitals emphasized the issue of poor referrals, which they attributed to forgetfulness on the part of the doctors, as this dietitian stated, “Most of the time, the doctors forget to refer patients to us and just give them drugs. This happens mostly when the patients are too many; the doctors do not remember” (H1D01, P8, L9-24).

Besides inadequate referral mechanisms at both clinics, one of the nurse leaders who participated in the study talked about poor team cohesion, which resulted in the neglect of nursing input in SMS at the clinic:

> Our relationship with the doctor is not fantastic. From what I saw when I travelled to [name of another hospital], the way the nurses and the health attendants work, there was collaboration. Teamwork was good, but here, you do not give suggestions to the doctor; they think they know everything. When you see a diabetic patient, and you make suggestions to the doctors, some of the doctors will ignore you, and that (thing) has messed up my relationship with them. (H1NO3, P31, L1-11)

This participant also expressed the perception that nurses were underutilized and explained how nurses' role in patients' education was incrementally removed by the employment of general health educators who have a degree in health education. This situation limited nurses' scope of practice in the clinic to checking vital signs because interprofessional collaboration was not sustained:

> By right, any nurse is a health educator, forget all these things they are doing here. Somebody that did a health education program in school they will tell him or her to come and give health education; it is the work of a nurse, nurses should be involved. It is the work of the nurse; it is part of our training, but the health educator they have taken over all these things, so it is just dormant. But before, as a student nurse, it is the nurses that

> give health education and stand there and give health education even in ante-natal clinics. However, now these people are doing all these things. We are supposed to be doing our job, so our work is limited; it is not supposed to be so. This makes some of the nurses forget what they are supposed to do. Health educators, they are taking our work from us. Even if they are to work here, we are supposed to work with them, and we should do the schedule with them. (H1N03 P28, L7-24)

HCPs consistently discussed the lack of training and the unavailability of resources. The apparent underuse of nurses highlighted in the quote above shows inadequate role assignment and inefficiency in the use of available resources. HCPs who had background knowledge of diabetes were not effectively used in the general health education programs or the individual patient education opportunities. On the other hand, HCPs assigned the task of health education did not appear to have the background knowledge to provide diabetes education. Not all physicians believed that nurses were adequately prepared to offer diabetes education. All parties appeared reluctant to cross a line drawn by the official assignment of roles and by the paucity of knowledge; thus, patients did not get the maximum benefit from interacting with the HCPs during their time in the clinics. Unfortunately, the status quo had remained despite the increasing need to adapt strategies and resources to meet the needs of patients with diabetes.

Inertia in HCP and the organization. Both clinics lacked essential resources for diabetes SMS, such as dedicated time and personnel for DSME, varied and appropriate patient educational materials, and continuing diabetes SMS education for HCPs. Consequently, participating HCPs identified gaps and mismatches between the services they offered and patients' needs for SMS. The continual lack of essential resources and apparent lack of interest or leadership capacity in the hospitals to effect change resulted in a feeling of helplessness by

HCPs who had learned to adapt to the circumstance. HCPs recounted ways through which SMS could be strengthened in the two clinics. However, HCPs appeared powerless and unable to make any real change as individuals or a group. For instance, HCPs talked about employing diabetes educators, creating dedicated time for diabetes education, providing different educational tools, and putting structures in place for continued support to patients outside the hospital. However, despite HCPs' insights, conditions at the clinics have remained the same. Coiera (2011) referred to this inaction as "system inertia," which refers to a failure by a human organization to effect change despite the clear indication that change is crucial. The system inertia resulted in HCPs feeling powerless and impacted HCPs' perceived ability to effect change, as a physician highlighted: "The factors are not in the control of HCPs. To me, given the right environment and the right amenities, HCPs will be able to do what is expected" (H1E04, P29, L1-4).

Hospital One and Hospital Two are owned and run by the federal and state governments, respectively, with their shared bureaucracy. As stated in the description of Hospital One, the clinic is headed by the endocrinologist who reports to the head of clinical services, who in turn reports to the medical director. The medical director reports to the Federal Ministry of Health. The Ministry approves significant projects, and the Ministry itself had many cadres in the chain of command. On the part of the state government-owned hospital where bureaucracy is minimal, the overriding challenge appeared to be a lack of political will to invest in the hospital. HCPs in both hospitals believed that the solution to all the problems in the clinics rested with the government or the management:

> One of the problems we have here is practicing in an area where the government seems not to be sensitive to what they need to do. The problem most times is not that the

> government has no resources; if you have an administration that is interested in doing this thing, they get it done. Sometimes it is a question of personal interest. If a governor is interested, he can do what needs to be done, but if he is not interested, you cannot just do anything. So that is the issue. It depends. We keep on praying, maybe one day somebody just comes and decides to do something. (H2E02, P12, 19–24; P13, 1–6)

I became curious about how HCPs could provide SMS using the available resources in the clinic without waiting for the government. For example, I was aware that Hospital One had nurse educators. I wondered if those nurses could be used in the diabetes clinic in the absence of diabetes educators. In response, one of the participants explained that some form of support from management was still needed for nurse educators to develop the processes, practices, and resources to provide adequate SMS:

> Healthcare providers are doing what they can from their basic knowledge, that is why they are having that talk [general education and one on one education], but for us to administer the specific ones for diabetic patients, we need to come together as a team, supported by the hospital, we can even do the training here. All we need to do is to get the modules, some of us can even administer it, but we have to get the support from the management team. (H1E03, P22, L1-11)

With the status quo persisting, both clinics remained in a state where resources to support SMS were inadequate.

Lack of basic infrastructure: Shaping SMS practice. HCPs recounted the lack of necessary infrastructure for SMS. This lack of requisite resources affected their practice in different ways. Subthemes here include (a) lack of support for continuing education for SMS, (b) brief, basic, rushed, and inconsistent patient education, (c) loss of follow-up, and (d) workarounds.

Lack of support for continuing education for SMS. Lack of support for continuing education for HCPs resulted in a lack of skills for individualized support for patients. Many HCPs cited their lack of specialized training by the hospital or government as a huge limitation:

> The government does not send us for training. It affects us because you cannot give what you do not have. When you send someone on seminar, symposium, training, the person will be knowledgeable, able to interact with the patient. You cannot give what you do not have. (H1N03, P19, L12-17)

In one of my fieldwork sessions, I asked one of the nurses what she tells patients when she notices their blood glucose is outside the recommended parameters. The nurse said the following:

> I do not have any special training on diabetes, so when they have high FBS, I tell them the much I know; for instance, I ask them, what do you eat? Do you take your drugs? I tell them to stick to their drugs. (09/13/2018 H1PO Field Note)

From my interactions with HCPs in both clinics, I understood that there was no culture of providing continuous professional education for employees in both hospitals. Apart from physicians, it is not required by employers or regulating authorities that HCPs undergo annual continuing education. For nurses, continuing education is required once in the 3-year lifespan of an existing license. HCPs believed that such education and training would strengthen their knowledge and skills and enable them to provide good SMS. Both hospitals were owned by the government; thus, HCPs felt that the government had failed in this area.

Due to their health professional training, many HCPs had a basic knowledge of diabetes. However, specialized strategies and skills to support self-management were deficient. HCPs lacked specialized training; thus, HCPs felt comfortable giving generalized advice. They could not give details or provide practical, individualized information that would guide patients in making informed decisions in their day-to-day lives with diabetes. HCPs focused on providing rules and enough information for patients to understand why they must follow the rules. Patients were given measurements of what to eat during diet counselling; however, patients were not given enough room to maneuver or make complex decisions. Patients were not taught how to count their carbohydrates and calories or what to do to balance their blood sugar if they had to or wanted to eat more food than specified. I did not observe any situations where HCPs focused on how to balance medication, diet, and exercise. Likewise, I did not observe or hear HCPs talk about how other factors, such as hormones or stress, affect blood glucose or how to manage in social events, such as those involving social pressure to accept food from hosts.

In sum, many participants in this study believed that they lacked the specialized knowledge and skills to provide diabetes SMS because the hospital management and the hospital did not make staff DSME a priority. This situation was made worse by a lack of dedicated time for education, which forced HCPs to rush through diabetes education.

Brief rushed, basic, and inconsistent patient education. The two clinics did not designate specific times for diabetes education; therefore, education was only provided within the time available for consultation. When provided, this education was usually brief and superficial. Sometimes, it was omitted entirely. Consequently, many patients passed through the clinics without fully understanding their condition or its management. HCPs sometimes provided little bits of education, especially when the patient had abnormal lab results. In my fieldwork, I noticed that patients received little bits of information as they went from office to office. HCPs did not have a uniform approach or structured education; instead, each HCP decided what to tell the patient. However, the absence of a diabetes educator left a gap because no one helped patients connect these bits of information, keep track of what was covered or not covered, or help patients learn how to problem-solve and integrate their diabetes knowledge into their daily lives. The following quote highlighted the impact of the absence of diabetes educators in the clinic:

> We try as much as we can to talk to the patients in the clinic there. However, you know, considering the nature of our clinic, how busy it is, and the number of patients we see, we usually do not have enough time to [give] thorough education. However, at least, we give them an overview. (H1E04, P3, L9–14)

Sometimes patients did not receive any education even when they demonstrated a lack of knowledge of their condition and its management. The following excerpt captured a clinical encounter between a patient and an endocrinologist. The patient described a scenario in which he experienced hypoglycemia and asked what to do if such a situation arose again. The HCP appeared to be receptive to the patient's concern but became distracted by his prescription plans:

> A man in his 60 s came in and sat down beside the doctor. The doctor asked him what his FBS was, and he said it was 72mg/dl [4 mmol/L].
>
> > Patient: "I checked it yesterday, and it was 54mg/dl[3 mmol/L]. At times my sugar can be very low, as low as 40 mg/dl [2.2 mmol/L]."
> >
> > Dr: "What did you do when it was that low?"
> >
> > Patient: "I drank a bottle of Coca-Cola, and I skipped my drug for the whole day."
> >
> > Dr: "Did you recheck the blood sugar afterward."

> Patient: "No, but after the drink, I did not eat anything else for the day; I took boiled corn at night. I want to understand what to do when it is very low."
>
> Doctor: "We have not told you?"
>
> Patient: "No."
>
> Doctor: "Ok, it is a mistake on our part. When did you start coming here for diabetes?"
>
> Patient: "Since 2014."
>
> Doctor: "Have you been educated here on diabetes and how to manage yourself?"
>
> Patient: "Not really, sometimes they give us an open lecture, sometimes, not all the time."
>
> The doctor flipped through his folder and remarked that the patient was asked to stop glibenclamide when he last came. He asked the patient if he had stopped it, and the patient said yes. He told the patient that he would further reduce his drug. The patient was also taking a combination of metformin and sitagliptin. The doctor informed him that he should now be taking metformin only, 500mg twice daily. The doctor also advised the patient to return in two weeks for an assessment of his blood glucose control with the new treatment regimen and then gave the patient's folder to an intern to write out the prescription. Later, the patient got his prescription and left. (8/13/18 HIPO)

Amid the concern about taking the right medication, the opportunity to offer some education about hypoglycemia was forgotten, and the patient left without the information he had requested.

Doctors in the two settings did not just see patients with diabetes; doctors also saw patients with other endocrine disorders. Nurses and dieticians attended to patients in other clinics as well. The clinic was usually crowded and very busy; thus, HCPs were caught up with their primary duties. Therefore, it is not surprising that the SMS aspect of diabetes management was relegated to the lowest priority because no specific HCP had DSME as his or her primary duty. Few HCPs have specialized skills in supportive diabetes education. The notion that lack of patient education is due to time pressures and the number of patients was incongruent with the values expressed by HCPs about the importance of facilitating patient understanding and acceptance through education. In the extract below, the HCP perceived a direct link between information provided, psychological acceptance of the condition, and appropriate self-management defined as following the HCP's treatment plan instructions:

> We help them to understand the disease process. If they can understand it, they will do better, help them to accept it too. Some understand, but they refuse to accept; we help them to accept it; if they accept it, they can now comply to the treatment and do as they are told. (H2N01, P7, L9-14)

In addition to the brief and inconsistent education given to patients, many HCPs I interviewed mentioned the issue of time as one of their limitations. HCPs each had a brief time to carry out their primary duties. HCPs barely had any time to spend on patient education due to the patient load in Hospital One. Thus, patients were rushed through education when education was provided. The HCPs failed to notice cues that indicated areas of concern from patients. HCPs gave the patients much information in an abbreviated time, creating difficulties for the patient to assimilate the information. An excerpt from the observation of a consultation between a doctor and a 70-year-old woman illustrates this difficulty. The woman lived alone but was accompanied to the hospital by her two sons. In the excerpt below, the doctor was teaching the family how to give an insulin injection:

> Dr: "How do you use your insulin?"
>
> Patient: "A nurse comes to inject me once a day; I also take tablets."
>
> Dr: "You will need to be fully on insulin, and you will be monitored to get your blood glucose under control."
>
> The doctor quickly ran through many of the things that should be done, explaining to the patient and her sons what to tell the nurse who gave the insulin. She suggested that insulin be given 3x a day, possibly on the arms, thigh, abdomen or buttocks. She advised rotating the sites for maximum absorption and counselled giving the drug 30 minutes before food. Finally, she stated that food must be available before injection. The patient said, "The nurse gives me insulin before food, and sometimes after the injection, I feel as if there is no sugar in my body." The doctor continued as if she did not hear the patient; she talked about the insulin pen and how it is used. She said all the above in rapid succession, and I tried hard to catch up with her in my notes. I wondered if the patient and her relations understood all she said. This incident happened towards the close of the clinic, and the doctor was hurrying to see other patients as well. (09/13/2018 HIPO Field Note)

The lack of dedicated time for a focused patient education meant that education was incorporated into the primary medical consultation. Many patient needs were left unattended due to the limited time available for consultation. This situation inadvertently fostered the lack of knowledge found among many patients, even among those who had lived with diabetes for many years. The patient in the above excerpt raised a significant personal concern that was not addressed. The doctor did not attempt to check if the information given was understood. For a condition such as diabetes—which requires critical thinking skills to make regularly informed decisions and solve daily challenges associated with the condition—the importance of SME cannot be overemphasized. The next subtheme describes how difficult it was for patients to maintain adequate self-management without ongoing support from HCPs.

Loss to follow-up. HCPs complained about the absence of a structure for continued SMS and follow-up. No structure was in place to coordinate the care of patients within the community. Additionally, no structures were in place to reach patients who failed to appear for clinic appointments or send reminders to patients. HCPs could only call patients at their own cost. Thus, many patients did not follow up, which resulted in some returning in critical conditions, as demonstrated in the quote below:

> We try as much as possible to educate patients and then start them on treatment as early as possible, ehm, then we plan outpatient care, follow up with them, whether two-weekly, weekly, depending on the severity of the illness, and ehm, quite a number of times, we lose some of our patients like they stop coming, we lose them to follow-up, you do not see them again till next year. When they come back again, they come with complications; some of them stop their treatment. I have a couple of them who stopped, some of them stop the treatment, they even start trying other types of maybe herbal concoctions. When it gets bad, they come back to you; then, the complications will have set in like liver problems, renal problems. (H1E01, P1, L20-29)

In summary, the diabetes clinics in both settings were acute-illness oriented. The clinics did not have enough resources to provide SMS. HCPs provided some form of support to patients with diabetes without the full complement of resources needed. Many patients succumbed to preventable complications due to the clinics' lack of structure for providing continued support to patients outside the hospitals. HCPs devised strategies to work around some identified problems and provide continuing SMS to patients.

Workarounds. HCPs in both settings described how they used different approaches to bypass some of the organizational challenges to provide better SMS to patients. For example, HCPs gave their phone numbers to patients and encouraged them to call the HCP from home when they had a problem related to their diabetes. HCPs also adapted their drug and lab prescriptions to suit patients' economic status and bypass patients' inability to afford their hospital bills.

Workarounds have been described as positive or negative behaviours that differ from organizational norms or approved practices. These behaviours are used to sidestep or temporarily find a solution to a workflow hindrance or blocks to meet a goal or achieve it more easily (Debono et al., 2013). Workarounds are positive when used as a strategy to compensate for inadequate resources or technology, address poor workflow design, or improve efficiency (Alper & Karsh, 2009). On the other hand, workarounds are negative when health workers bypass such safety measures, thereby jeopardizing patients' safety (Koppel, Wetterneck, Telles, & Karsh, 2008). In this study, I used the term workaround to describe processes used by HCPs to compensate for inadequate resources, such as the absence of diabetes educators and lack of resources for providing continued support to patients outside the hospital. Examples of workarounds included providing personal phone numbers and flexibility in the prescription of drugs and lab investigation.

HCPs were resourceful in meeting the needs of patients in the clinic and in navigating through the challenges. HCPs did not have a medium for maintaining contact or providing continued support to patients beyond the clinic hours and outside the hospital. However, many

HCPs in both hospitals gave their private phone numbers for patients to call if the patients were confused about what steps to take or how to interpret their blood sugar results:

> I feel free to give them my number so that if there is any problem at all, if there is something that is confusing them at all, they are free to call me. I even tell them to call me at any time; I will pick your call if you are a patient. (H1H02, P12, L11-15)

HCPs used this medium to provide continued support to patients while outside the hospital and to reassure patients when necessary:

> Yes, we give them our numbers, they call to tell me their blood sugar, sometimes they are like, "I am worried; my blood sugar seems low, lower than expected or despite my drugs, it is still going high." If the patient feels that the blood sugar is enormously low, you reassure the patient by saying something like, "that is the level we want, and there is no cause for alarm, continue your medications at that level." If actually, it is getting low, you can tell your patient okay, omit your drug for today or reduce the dose of your medication, either insulin or the tablets you are taking, and come to the clinic during the next available clinic day. A patient can call you on the phone and tell you he doesn't know how he is feeling. With your experience as a doctor, maybe the person is having hypoglycemia symptoms, and because of that, we instruct the patient to check blood glucose. Then, they check and tell you. You can then tell them what to do before coming to the hospital and things like that. (H1E04 P15, L6-22)

The practice of HCPs providing patients with their phone numbers could potentially avert emergencies or complications that may arise with diabetes and allowed HCPs to assist patients with problem-solving. On the other hand, the strategy used to support patients through this call was to instruct patients to do a blood sugar test and phone for further instructions rather than for patients to solve the problem themselves. This strategy is similar to what happened in the clinic in which patients were told what to do. It was difficult to determine the actual percentage of patients who sought support through this means. Again, few patients appeared confident calling their HCP on their private number. The nature of support that could be derived from this method varied with different HCPs. I did not observe any phone calls from a patient to a HCP.

In addition to preventing diabetes emergencies by giving timely advice via the phone, HCPs also sought to reduce the financial burden of diabetes management on patients by tailoring their prescription to the patients' financial status and soliciting free drugs from drug companies. Doctors in both settings exhibited flexibility in their approach to management to accommodate the patient's inability to afford necessary drugs and laboratory investigations, as highlighted in the quote below:

> For patients of low socioeconomic status who require insulin, it might be difficult to prescribe the type of insulin that is necessary, and you might go with what the patient can afford. The same goes for the treatment. Most patients might benefit from, okay, let's take, for example, patients with severe hyperglycemia that require soluble insulin basal-bolus regimen. Still, if the cost is a problem, it is a challenge, and a patient cannot afford that basal-bolus regimen, you might make do with, ahm, administering insulin, the pre-mix insulin twice a day. For patients who are on basal-bolus, especially those with severe hyperglycemia, they will need to monitor the blood glucose more frequently. But some of our patients with cost constraints may have to do with less monitoring. You know, it just depends on how the patient presents; we tailor the treatment towards the patient's peculiar case and also put into cognizance the patient's socioeconomic status (SES). (H1E02, P16, L19-P17, L11)

The above scenario usually occurred unofficially when patients complained of an inability to afford the prescribed drugs or when they skipped their medications for a long time because of cost. Diabetes care in both clinics was structured according to the acute care model, a structure for managing acute and short-term conditions. With this model, the emphasis was on the disease, and HCPs focused on biomedical values and worked towards ensuring patients' compliance with their instructions. The acute care structure of both clinics was characterized by a lack of adequate resources for providing SMS and a lack of interprofessional collaboration.

The clinic processes' hierarchical nature led to poor teamwork and underuse of select HCPs, such as nurses and dieticians. Moreover, HCPs lacked support for continuing SMS education. Consequently, many HCPs in both clinics lacked the skills essential for SMS, thus leading to inadequate patient education on diabetes. Many patients experienced avoidable complications as a result. HCPs compensated for lack of structure for ongoing support by providing their phone numbers to patients and being flexible in drug and lab prescriptions to enhance the patient's ability to afford hospital care.

Conclusion

Data from this study suggest that the participants worked in a setting where specific cultural beliefs and practices directly impacted DSM. These cultural influences included beliefs in the supernatural origin of diabetes and interdependent family values. Most persons with diabetes paid for their medical treatment out of pocket due to a lack of health insurance. Diabetes care in both clinics aligned with the acute care model.

SMS was characterized as HCPs navigating (a) the sociocultural terrain, (b) a compliance-oriented approach, and (c) how to work within a hierarchical system. Participants usually treated diabetes as an acute condition where patients received medical treatment and then went home to carry out medical instructions as prescribed. HCPs mainly focused on the disease and the biomedical status of the patient. This narrow focus placed unbalanced attention on controlling blood glucose and other laboratory parameters to the detriment of psychosocial support and education in problem-solving and decision-making in diabetes. Participants did not pay much attention to other aspects of chronic disease management, which requires continuous support of the patient. Such broader attention is crucial to the survival of the patient with a chronic disease and to patients' ability to live a wholesome life with their condition.

Participating HCPs encountered different organizational constraints as they supported and cared for patients with diabetes. HCPs also dealt with values inherent in the social and cultural environment in which they practiced. HCPs regularly traversed the prevailing sociocultural terrain and often helped patients resolve the dilemma of coping with a disease with no cure, contrary to many patients' long-held beliefs about such conditions and their natural course. HCPs sometimes called upon their shared religious beliefs, which most patients could identify with, and used this commonality as a vehicle for psychological support. HCPs in both hospitals relied heavily on patients' relatives to assist patients with self-management tasks and receive SMS information and transmit the information to the patients, especially the elderly. In many cases, patients' relatives were deeply integrated into the routine care of the patients. The relatives had vested interest and influential decision-making power in crucial health decisions with their loved ones, such as limb amputation.

Participants widely recognized that their SMS was suboptimal. HCPs partly attributed this inadequate support to their lack of continuing education and the structure of diabetes care in the clinics, which only created room for the formal doctor-patient consultation and underused other HCPs' knowledge and skills. Personnel or resources have never been explicitly devoted to continuing individualized SMS; many patients remained uninformed even many years after their diagnosis. HCPs recognized that continuous engagement with the patient was essential but lacking, which led to defaults on follow-ups and appointments and inevitably resulted in poor health outcomes.

HCPs in this setting predicated any substantial change in their SMS practices on the government providing conditions that HCPs considered conducive to their work. HCPs from both hospitals agreed that the government should provide training and more funding to enhance HCPs' work in the clinics.

Chapter 5

Discussion

Chapter 5: Discussion

In this chapter, I focus on the conceptualization of SMS that I developed from my analysis before moving onto the main themes. I also discuss my findings in relation to the literature, thus placing this study in the context of the overall knowledge regarding SMS for persons with T2DM.

The data gathered in this study suggest that the Nigerian HCP participants understood SMS from a biomedical approach. HCPs using a biomedical approach helped patients regulate their blood sugar and prevent complications by giving brief information to patients about diabetes. HCPs also gave instructions to patients on what to do while expecting compliance with their instructions. The support provided by HCPs was limited by HCPs' knowledge and expertise in SMS, the organization of diabetes care within the clinics, and lack of personnel and other essential resources. HCPs also contended with sociocultural factors such as cultural beliefs and practices and lack of health insurance for most of the patient population. HCPs sometimes negotiated the biomedical model by leveraging shared beliefs and practices and using other practical measures to work around the system and sociocultural challenges.

Several assumptions underlined Nigerian HCPs' perspectives and practices. Firstly, HCPs believed that they were the ones to determine what was best for patients while patients' and families' role was to follow their instructions. Such assumptions indicate HCP-centred diabetes care instead of patient-centred diabetes care. HCPs determined what was best for patients; this perspective guided SMS practices in which there was a strong focus on getting patients to comply with HCP instructions. In these settings, controlling the blood glucose took undue priority, and very minimal attention was given to patients' psychosocial and educational needs.

A strong hierarchical relationship was present between the medical experts (HCPs) and laypeople (patients and relatives). This power inequality was also evident amongst the HCPs in each setting. A form of parallel practice was observed as different professional groups in the clinics carried out their activities in relative isolation despite being in the same clinic.

Collaboration among professionals is key to meeting the needs of patients with diabetes who face diverse challenges such as medical, informational, psychosocial, and lifestyle and dietary changes. Interprofessional collaboration is the "continuous interaction of two or more professionals or disciplines organized in a common effort to solve or explore common issues with the best possible participation of the patient" (Morgan, Pullon, & McKinlay, 2015, p. 1218). This approach enables HCPs to generate solutions to a complex problem, improve patient care, promote the maximal use of health professionals time and expertise, enhance patient and family-centred care, provide the mechanism for continuous communication among caregivers, optimize staff participation in clinical decision-making within and across disciplines, and increase healthcare quality (Herbert et al., 2007; Morgan et al., 2015). Such collaborative practice was missing in the clinics observed in this study. Instead, HCPs worked within informal role boundaries that reflected territorial and professional lines rather than patients' holistic needs.

The conceptualization of SMS and the underlying assumptions identified in this study differed significantly from the Western world's current approach, where SMS is seen as a collaborative process in which patients, HCPs, families, and communities work together to assist patients in managing the medical role or emotional consequence of their condition (Captieux et al., 2018). The current conceptualization of SMS in the West, particularly in North America, has focused on power sharing between HCPs and patients (Aujolat et al., 2008; Lorig & Holman, 2003) by enhancing patients' self-efficacy and problem-solving skills. This practice is a significant contrast to the findings in this study, where HCPs assumed effective control while patients and families took a subordinate and passive role of listening and carrying out HCPs' instructions. Traditionally, this practice is conceptualized as compliance (Anderson, 1985). The study participants' interactions with clinic patients were focused on HCPs' desire for patients to comply with medical instructions. Developing SMS from this stance involves a shift from expecting compliance to enabling independent judgment and freedom to act; this shift is possible when patients are enabled to develop the knowledge, skills, and confidence to manage themselves (Thille, Ward, & Russell, 2014). Major principles inherent in modern SMS approaches include patient autonomy and empowerment, patient-centeredness, and collaboration between patients and HCPs (Aujoulat et al., 2008; Kawi, 2012; Morgan et al., 2016).

Participants in this study practiced in unique settings where widespread beliefs in the supernatural origin of disease were present. These beliefs were interspersed with misconceptions and a lack of understanding of diabetes and its management among the general population and the population living with diabetes. The majority of patients lacked health insurance, and few adequate resources were available to meet the psychosocial and educational needs of patients with diabetes. The study findings indicate that HCPs frequently contended with these social and structural barriers that impaired their capacity to support persons living with diabetes fully.

Despite these barriers, HCPs still strove to support their patients by developing some workarounds. In the nursing literature, workarounds refer to behaviours that bypass or temporarily fix a recognized limitation in a system to meet a goal or achieve it more readily (Debono et al., 2013). HCPs systematically used strategies such as involving family members and integrating shared cultural beliefs and practices like prayers. HCPs also employed workarounds such as giving out personal cell phone numbers in an attempt to bypass the systemic, organizational, and sociocultural barriers. The concepts of compliance and workarounds to address institutional and sociocultural barriers permeated participants' practices, as seen in the following four themes that emerged during the study: (a) social and cultural context of SMS, (b) navigating the sociocultural terrain, (c) compliance-oriented medical model, and (d) SMS within the context of the traditional hierarchical structure. I will now discuss each theme in relation to the extant literature.

The Cultural and Social Context of SMS

The unique social and cultural context in which HCPs in this study provided SMS included beliefs in the supernatural origin of diabetes, widespread misconceptions about diabetes, individual-family interdependence, lack of health insurance, and the acute disease model structure of diabetes care. This context is congruent with the contexts described in many of the studies carried out in Nigeria and other African countries (Adejumo et al., 2015; de-Graft Aikins, 2005; Sule, 2013). In the present study, participants recounted that belief in the supernatural origin of diabetes was prevalent among persons with diabetes in the two study sites. Additionally, misconceptions about diabetes and its management were widespread among patients and their relatives. Participants believed that it was common for patients to seek treatment outside the spheres of biomedicine, either alongside medical treatment or with a complete abandonment of medical management.

People in many parts of Africa believe in the supernatural origin of chronic diseases. For instance, Abdulrehman et al. (2016) found misconceptions about diabetes and the pervasive use of herbs, prayers, and other nonmedical remedies among the Swahili people in Kenya. This finding was also true among people living with diabetes in different parts of Cameroon, Ghana, and Nigeria (Adejumo et al., 2015; Awah, Unwin, & Philimore, 2008; de-Graft Aikins, 2005;

Abdulrehman et al., 2016). Adejoh (2014) conducted a quantitative study in which a structured questionnaire was administered to 152 persons with diabetes recruited from seven different hospitals in northern Nigeria. Adejoh examined the association and influence of diabetes knowledge and health beliefs on diabetes management and noted that most respondents believed that diabetes could be cured using local herbs from competent herbalists. Adejoh suggested that this belief could have affected participants' self-management. Similarly, Sule (2013) conducted a qualitative case study with 14 participants and observed that several participants in southeastern Nigeria believed that their connection to God through prayers could cure them of diabetes. HCPs in the present study considered faith in the supernatural origins and course of diabetes to be a significant factor that led to poor self-management among patients. A review of the above studies of diabetes in Africa provided a little glimpse into the values, beliefs, everyday practices, and challenges of people living with diabetes in poor resource settings such as Africa.

Beliefs and practices regarding disease origin and mode of treatment are considered an aspect of culture. Kleinman (1978) and Kleinman and Benson (2006) explained that both patients and HCPs possess knowledge and beliefs regarding illness that are deeply influenced by patients' and HCPs' different cultures. The ideas that patients, families, and practitioners hold about a specific disease are referred to as their explanatory model of health (Kleinman, 1978, 1988; Kleinman, Eisenberg, & Good, 1978). Explanatory models reflect people's understanding of their health problems and possible solutions to those problems. HCPs' explanatory models are primarily derived from the scientific and biomedical knowledge that HCPs acquire in their medical education. On the other hand, patients' model of explanation is far more complex and influenced by their social environment, which includes folk and lay beliefs, sociocultural dynamics, religious beliefs, and some aspects of the biomedical model picked up from interactions with HCPs (Kleinman, 1988; Naeem, 2003; de-Graft Aikins, 2005; Taylor, Awobusuyi, Adeniran, Onyia, & Ogedegbe, 2015). Kleinman's theory of explanatory model involves a set of questions to guide providers during an assessment; the answers to these questions provide insight into the patient's perspective on health, illness, and care. The idea of the explanatory model is to enable HCPs to broaden their focus to include the patient's beliefs and perspectives. Individuals with diabetes cannot be effectively counselled to change their lifestyle without first understanding their perception of their health condition and its management. With mutual understanding, HCPs, patients, and families can discuss the patient's issues in the language that all understand, thereby facilitating holistic patient care. A different explanatory model of illness between patients and HCPs affects the transactions within the HCP-patient relationship. This mismatch can result in miscommunication, distrust, nonadherence to medication, and poor management outcomes (Kleinman, 1978).

Having different values and beliefs about a health condition influenced by one's culture and environment is not a problem in itself. Clinicians can inquire about a patient's or family's explanatory model to encourage open communication. Thus, HCPs can use their expert knowledge to find common ground with patients' explanations and viewpoints. In the current study, HCPs believed that many patients came to the hospital still holding fast to the spiritual causal theories of their condition and the expectation of a complete cure for their diabetes. In response, HCPs who believed that practices such as prayers and herbs would do no harm aligned with patients by praying with them, talking about support from pastors, and allowing the use of herbs. Other HCPs considered it their responsibility to persuade patients to let go of such supernatural beliefs and accept the biomedical explanation of diabetes and its treatment.

Another aspect of SMS-related cultural beliefs and practices found in the study was the individual-family interdependence. A strong family orientation exists in Nigeria; this contrasts with Western culture, which emphasizes self-determination and independence in SMS (Pulvirenti, McMillan, & Lawn, 2014). In Nigeria, as in many African countries, the conceptualization of self in SMS is oriented to collectivism, interdependence, and family (Eaton & Louw, 2000). Collective decisions often weigh more than individual choices (Airhihenbuwa, 2007; BeLue et al., 2016).

I observed that participants commonly used interdependent self-description such as "us" and "we" when interacting with patients and relatives. HCPs and patients appeared to have a mutual understanding that when a HCP says "you" to a patient in the presence of a relative, it is understood as the patient and family as a unit. Through informal conversations with patients and family members, observations at the clinic, and participant interviews, I learned that family members acted as caregivers by helping the patient with self-care activities such as food preparation, blood sugar checks, administering insulin, and sharing in the financial cost of hospital treatment. This finding is supported by Sule (2013) and Abdulrehman et al. (2016), who also documented Nigerian families' supportive roles in assisting relatives with diabetes. Sule found that patients depended on their loved ones' advice and trusted that their relatives would make the choices for them even when their loved ones were not informed. Sule also noted that persons with diabetes relied on their family members to prepare their meals, oversee their medication regimen, check their blood glucose, and accompany them to the hospitals. Abdulrehman et al. explored DSM practices within the context of the Swahili (Kenyan) culture. Abdulrehman et al. found that none of the study participants had any form of health insurance and depended on their family members for financial support. Participants in the current study involved family members in assisting in different areas, including educating family members to reinforce patient education at home, giving financial support, and convincing patients to accept some management decisions when necessary.

Support from families has been shown to yield positive results. Ojewale et al. (2018) studied 197 participants from two tertiary hospitals in southwestern Nigeria to determine the association between patients' characteristics, perceptions of family support, and DSM. Ojewale et al. found a positive association between perception of family support and effective DSM. Ojewale et al. also found a statistically significant difference between participants who had a good perception of family support and those who had a poor perception of family support with respect to DSM ($p < .01$). However, more exploration is needed to determine other instrumental ways in which families may or may not influence DSM and SMS in the Nigerian context.

Family members were essential stakeholders in DSM and had significant power and authority levels to steer the management outcome. Although data from the current study illustrated different ways in which families support patients in managing their diabetes, families in this study were also not always helpful. Family members sometimes discouraged patients from following specific medical recommendations, such as the need for amputation surgery.

In this study, families occasionally overruled management decisions made by HCPs; hence, family involvement in SMS was critical. For example, a woman I encountered while conducting this study refused a recommended leg amputation surgery because her children decided—without any discernable logical reason articulated to the physician—that she did not need it. These contradictory roles played by family members are documented in other studies (Abdulrehman et al., 2016; Okolie et al., 2010). For instance, Abdulrehman et al. (2016) and Mogre et al. (2019) noted that family members are not always inclined to accommodate patients' dietary needs, which causes problems for patients in situations where families live together and cook communally. The significant effects of family involvement on self-management in the Nigerian context underscore the need to make patients and their family members essential partners in SMS. Involving patients and their family members will ensure that all are engaged in setting goals and making decisions in tune with the medical needs, priorities, and values of patients and their families. Family member involvement will also provide an opportunity for family education and support.

In the present study, diabetes appears to be experienced as a family issue. Study participants described family members as playing several supportive roles. Many of the persons with diabetes had family members accompany them to the clinic. These family members contributed to clinic consultations by providing necessary information about the patient. Although the terms self-management and SMS are used in this study, one must recognize that a patient's diabetes is managed by the patient and family in the Nigerian context. Therefore, both the patient and the family need SMS.

As seen in this study and others, family influence on patients' behaviour may be positive or negative; this influence could depend on how informed the family member is. For example, family members who believe that a supernatural influence causes diabetes and that solutions should be sought outside the hospital could unduly influence their family members with diabetes in coming to terms with their condition. Among this cultural group, dietary management—including grocery shopping and food preparation—is usually done by female family members. Providing dietary education to a male patient alone without a female family member may be a futile attempt. Dietary management could also be adversely affected if families have misconceptions regarding the dietary management of diabetes. Such negative influence may not be ill-intentioned, especially if family members have misconceptions or have an inadequate understanding of diabetes.

SMS must involve family members. A growing body of evidence suggests that family involvement in SMS is associated with increased self-efficacy, improved knowledge and self-care, and better glycemic control (Baig, Benitez, Quinn, & Burnet, 2015; Lee, Piette, Heisler & Rosland, 2018). The positive outcomes of family involvement reported in this body of evidence could result from informed and targeted family members' support. WHO also recognized the essential role of the family in chronic illness management. The ICCC framework, an adaptation of the CCM, postulates that successful outcome in chronic disease management can be achieved through a triad relationship between patients and families, community partners, and healthcare teams who are informed, motivated, prepared, and working together with the support of the larger healthcare organization, the broader community, and broader policy (WHO, Chronic Diseases and Health Promotion, 2002). In the ICCC framework, a healthy policy environment is promoted through law, governance, partnerships, funding, and allotment of human resources, all of which ensure the ongoing sustenance of partnerships between patients and families, community partners, and healthcare teams. In Nigeria, the enactment of such a partnership will go a long way in improving SMS practices. Participants in the present study engaged relatives in patients' care; however, family involvement was neither uniform nor structured. Moreover, HCPs in this study focused more on getting family members to convince patients to comply rather than working with families to support patients. The current study results indicate that SMS for persons with T2DM in Nigeria must be provided within the family context. It is essential to centralize family rather than an individualistic approach to management; therefore, it is crucial to explore comprehensive and structured ways through which families could be integrated into SMS for persons with T2DM in Nigeria.

Another critical observation was that many of the patients who came to both clinics had no form of health insurance. Patients had to pay out of pocket for their health services in many of the cases observed. Patients sometimes skipped essential services to avoid extra costs. For example, some patients decided not to go for diet counselling or follow through on specific investigations such as HbA1C or vascular study for a suspected vascular dysfunction. Some patients skipped their medications for weeks, and others did not regularly check their blood sugars because they could not afford their medication or supplies. The NHIS and private insurance organizations provide coverage to federal public sector workers and their families and staff of some large private organizations; however, insured individuals only constitute about 5% of the Nigerian population (Okpani & Abimbola, 2015; Onyejekwe et al., 2019). The implications of the unavailability of health insurance for all is that people who live within or slightly above or below the poverty line cannot access health care. Abdulazeez, Omole, and Ojulani (2014) found a significant association between patients' financial status and compliance with medications among persons with diabetes receiving care in Ilorin, Nigeria. Similarly, Awodele and Osuolale (2015) found that patients often viewed their drugs as expensive and could only afford to buy their medications in partial amounts or only fill select prescriptions. Awodele and Osuolale also found that patients are sometimes not able to refill their medication at the right time, leading to multiple skipped doses. With the high cost of hospital treatment, adhering to prescribed medications can expose individuals to further impoverishment. Poor financial conditions can lead patients to recourse to other seemingly less expensive options (de-Graft Aikins, 2005), such as alternative herbal medicines and spiritual remedies. In the present study, HCPs admitted that many of their patients had resorted to herbal and spiritual remedies. This shift in care was mostly due to patients' inability to sustain their orthodox medical treatment and their cultural beliefs.

HCPs in this study noted the absence of robust follow-up mechanisms and resources within the community to support patients with diabetes. Historically, the Nigerian primary healthcare system has many community health centers situated mainly in rural areas where most of the populace reside. Unfortunately, these community health centers play little or no role in diabetes management in Nigeria because diabetes is not among the focus areas of care, unlike child and maternal health and acute endemic diseases. Thus, the primary healthcare centers are generally not equipped to handle chronic illnesses such as diabetes (Abdulraheem, Olapipo & Amodu, 2012; Oyewole et al., 2020). Therefore, diabetes is primarily managed at the secondary and tertiary levels of care (Fasanmade & Dagogo-Jack, 2015; Oyewole et al., 2020). With primary healthcare centers being excluded from diabetes management, patients living with diabetes in Nigeria—especially those from rural areas—are denied the benefit of ready access to care, affordability, and community participation inherent in primary health care.

The social and cultural context described above, such as cultural beliefs and practices, poverty, and lack of access to health care, have been described in other studies carried out in Nigeria and other developing countries (Awah, 2014; de-Graft Aikins, 2005; Fasanmade & Dagogo-Jack, 2015). Poverty is a universal concern throughout much of Africa, and poorly designed chronic care infrastructure is widespread (Atun et al., 2017). Healthcare systems in many parts of Africa are weak and not fully equipped for managing chronic illnesses. Human resource constraints and an overconcentration of resources to other programs such as acute illness and infectious diseases are also significant challenges (Atun et al., 2017; de-Graft Aikins et al., 2010).

Diabetes management outcomes have not improved despite the awareness of the above factors, which have existed over time. HCPs who implement SMS focus on patients and their unique needs to identify specific individual and sociocultural challenges and devise a plan that addresses those problems (Brach & Fraseirector, 2000; Dauvrin, Lorant, & d'Hoore, 2015; Powers et al., 2016). Therefore, SMS for persons with diabetes in Nigeria should incorporate measures to tackle known barriers such as poor access to health care, poverty, lack of health insurance, and cultural beliefs and practices. Interventions to remove patient-related barriers, HCP-associated barriers, and other impediments inherent in the Nigerian healthcare system will improve disease outcomes.

The mere awareness of cultural values, beliefs, and customs is not enough; instead, interventions should be targeted towards culturally competent care. Betancourt, Green, Carrillo and Ananeh-Firempong (2003) described cultural competence as follows:

> Understanding the importance of social and cultural influences on patients' health beliefs and behaviours; considering how these factors interact at multiple levels of the health care delivery system (e.g., at the level of structural processes of care or clinical decision-making); and, finally, devising interventions that take these issues into account to assure quality health care delivery to diverse patient populations. (p. 297)

Benavides-Vaello, Brown, & Vandermause (2017) suggested that self-management recommendations that are contextually relevant and reflect the cognitive, emotive, and behavioural areas of a group are more effective than a global recommendation, which does not usually address reality. Similarly, in a qualitative study of seven focus groups to address the diabetes-related needs and challenges of rural American Indians and Alaska natives with T2DM and their families, Scarton et al. (2019) found that participants emphasized the importance of involving families and family-based activities. Participants in Scarton et al.'s study also suggested integrating aspects of their culture in SMS, such as using their traditional native dancing as a form of physical exercise and integrating interventions that remove specific barriers to self-management. Clinicians should be aware of an individual's or group's religious and moral values, everyday practices, and challenges. Such knowledge will enable the clinician to empathize with patients and provide care in tandem with their circumstances.

In response to the inability to afford the cost of hospital treatment, some authors of prior Nigerian studies recommended that HCPs use low-cost generic drugs in diabetes management, intensify primary and secondary prevention measures through mass education, and create awareness to prevent or delay the onset of diabetes as well as avoid or delay complications (Chinenye & Young, 2011; Raimi et al., 2014). Other suggested measures include subsidizing the cost of care and using peer support as a cost-effective means of providing support for persons with chronic diseases in low-income countries (Van Olmen et al., 2011). HCPs must understand the context in which patients live and use that knowledge to enhance patient well-being and diabetes outcomes. HCPs must implement practical measures to address contextual issues that act as barriers to self-management. Such implementation will be made possible through knowledge translation in chronic illness management in Nigeria.

Compliance-Oriented Medical Model

The current study illuminated a compliance-oriented perspective among HCP participants in the two research settings. HCPs' primary goal was to ensure that patients complied with medical instructions. Participants gave scant consideration to the process through which patients attempted to achieve compliance, patients' plans and insights into their condition, and the broader situation and background within which self-management takes place. This orientation is evident in many studies conducted on diabetes in Africa. Mogre et al. (2019) systematically reviewed articles that measured the degree to which patients adhere to diet, exercise, medication, self-monitoring of blood glucose, and foot care. Mogre et al. recommended that HCPs in low and middle-income countries continue to monitor adherence and that resources should be invested in improving adherence to prescribed regimens. Many researchers in Africa who have conducted studies on adherence (used interchangeably with compliance, the degree to which a person follows a prescribed regimen) found that instructions and treatment goals were usually established with little or no input from patients and were based on the assumption that SME and SMS were in place for patients (Abrahams et al., 2019; Adejoh, 2014; Watermeyer et al., 2019). Unfortunately, this assumption does not seem to be borne out, given the findings of this and other studies.

The clinics observed in the present study had inadequate infrastructure and professional collaboration to support SME and SMS. Many patients were unprepared to play an active role in their diabetes management. Furthermore, most providers did not elicit patients' perspectives or act to enhance feelings of control or choice. For instance, Adejoh (2014) surveyed the knowledge, health beliefs, and DSM among 152 individuals living with diabetes among the Igala—an ethnic group in Nigeria—and found that most patients were only told what to do and what not to do. In many cases, this occurred without eliciting the patient's perspectives, needs, and priorities or tailoring the information given to the patients' specific situations. Additionally, many of the patients were in positions that made it impossible for them to conform to such directives. For instance, patients cannot engage in a specific activity if they lack the knowledge, skills, or the means to execute the action. This awareness should lead us to reconsider the nature of instructions given to patients. The HCPs in my study stated that they attempted to provide patients with essential information about diabetes and its effect on the body. HCPs placed more emphasis on reinforcing the need to eat correctly, test, and take prescribed medications. However, instructions given did not always suit patients' circumstances, forcing them to chart their course irrespective of medical advice. Adejoh found that both diabetes knowledge ($\beta = .262$, $t = 3.328$, $p = .001$) and health beliefs ($\beta = .07865$, $t = 2.439$, $p < .016$) influenced diabetes management. Similarly, the current study findings indicate that decision-making—a cognitive process—does not occur in isolation of sociocultural factors. This finding is consistent with Adejoh's findings, which revealed that knowledge alone is insufficient to increase self-efficacy and adherence. Therefore, HCPs implementing SMS approaches must focus on developing problem-solving and decision-making capacities to integrate knowledge into the patient's lifestyle.

Abrahams et al. (2019) aimed to determine the factors that influenced patient empowerment in an inpatient chronic care clinic in South Africa as perceived by 18 participants, including HCPs and patients. A participating HCP described a situation where patients with diabetes were "treated like babies" (Abrahams et al., 2019, p. 7), thereby disempowering them. Telling a patient what to do and what not to do without involving them in the plan (Adejoh, 2014; Abrahams et al., 2019) could be likened to the patient being treated like a helpless child. The current study findings revealed that HCPs who provide instructions without considering the patient's social, cultural, and financial background or who fail to include the patient in determining appropriate learning goals are at risk of creating a plan that does not match the patient's needs and priorities. Thus, the patient may not respect or implement the plan. The emphasis in SMS should be on promoting patients' autonomy by empowering them to make informed decisions and manage themselves at home rather than forcing patients to comply with instructions.

HCPs in this study had a disease-focused orientation in which the emphasis was on controlling a patient's blood sugar. Ironically, the acquisition of knowledge, skills, and confidence needed by patients to successfully achieve blood sugar level goals was mostly absent because HCPs did not have the time and resources to educate patients fully. Instead, HCPs gave instructions on what patients should do. Unlike acute illnesses that last a short duration, patients with diabetes live with the condition for the rest of their lives. These patients must cope with the symptoms and manage the psychological, social, and financial impacts of living with the disease. HCPs must use a more holistic approach that incorporates the management of the disease and the person living with it to help patients live with these challenges for the rest of their lives (Morgan et al., 2016).

SMS emphasizes patient-centred care and collaboration between patients and HCPs to promote holistic care and empower patients to make self-directed behaviour change (Castro, Regenmortel, Vanhaecht, Sermeus, & Hecke, 2016). Attributes of patient-centred care include a holistic approach to care, individualized care, and partnership between patients, families, and HCPs (Castro et al., 2016). A biopsychosocial perspective is necessary to account for the full range of needs and challenges patients might experience. Additionally, patients are treated as unique individuals and efforts are made towards meeting patients' unique needs, concerns, values, and beliefs (Epstein, Fiscella, Lesser, & Stange, 2010). Patient-centred care is associated with improved diabetes knowledge, adequate self-management, improved glycemic control, and higher quality of life (Williams et al., 2016). Patient-centred care entails accommodating patients' cultural values, needs and circumstances. In this study setting where an individual's definition of self is intertwined with the family, SMS must consider the individual-family interdependent values, other religious/cultural beliefs, and financial situations. Patient-centredness should also operate at the level of the institution and the health system. This approach entails making the patient the focus of both the organization and the design of institutional resources such as office hours, modes of communication, and facility location (Williams et al., 2016).

In my study, the absence of official channels to communicate with patients between clinic appointments was another factor that impeded self-management and potentially left patients vulnerable to complications from their disease. Although some HCPs provided their private telephone numbers to patients to mitigate the communication gap, the institutional impediments to optimal SMS remained obvious.

Participants in this study decried the lack of political will by hospital administrators and leaders to institute changes in the clinics. Participants also lamented the absence of a sustainable healthcare financing regimen. Without a doubt, this lack of political will and healthcare financing have contributed to the less-than-optimal SMS that patients receive from HCPs. Notably, the HCPs still appeared to be dependent on the authorities to provide professional education; the notion of professional continuing education and self-directed learning was not evident. This passiveness extended to the type of resources that were available. Despite the plethora of free materials on the internet that could be adapted to the local context, HCPs demonstrated little motivation or capacity to access these resources.

SMS Within the Context of the Traditional Hierarchical Structure

The compliance orientation found among HCPs, persistent lack of infrastructure, and inertia in HCPs and the organization affected participants' SMS experiences and practice. HCPs experienced some friction in work processes caused by the mismatch between patients' needs and available resources. Experiences described by participants included role validity, role boundaries and poor teamwork, inertia in HCPs, and lack of support of the organization and infrastructure.

Role validity, role boundaries, and poor teamwork. Doctors independently managed the care of diabetes patients in both clinics. The HCPs sometimes referred patients to other specialist medical doctors or dieticians. Persons with diabetes often presented with multiple health conditions and comorbidities that required management by a range of professionals. Interprofessional collaboration is part of the delivery system redesign required in the CCM to meet the needs of people with chronic conditions such as diabetes (Wagner et al., 2001). Interprofessional collaboration is a model of care in which different healthcare professionals, including physicians, nurses, diabetes educators, dieticians, pharmacists, work closely together to manage patient care, provide services, and refer patients to community programs when necessary (Szafran, Kennett, Bell, & Green, 2019). Interprofessional collaborative practice has been associated with patient-centred care and increased patient satisfaction (Morgan et al., 2015). In the present study, physicians attempted to provide diagnosis, treatment, referrals, health education, and sometimes diet counselling. As a result, essential aspects of care were not delivered to patients because the available physicians were both distracted and overwhelmed.

The HCPs in this study alleged that they provided diabetes education to patients. Similarly, Essien et al. (2017) suggested that diabetes education in Nigeria is provided mainly by doctors. On the other hand, other researchers such as Agofure, Oyewale, Igumbor, and Nwosu (2018) and Onyekachukwu (2016) determined that in many hospitals in Nigeria, nurses doubled as diabetes educators by providing group-based didactic education to patients every morning. However, the nature of the education provided was not defined. In this study, doctors, nurses, and dieticians informally provided abridged information about diabetes management, signs, symptoms, and complications to patients depending on the patients' laboratory results. This education was brief, inconsistent, and dependent on the time available to the HCP. Study participants considered this short and irregular education to represent DSME. Essien et al. reported on HCPs' tendency to give quick and uneven diabetes education. Essien et al. attributed this brief education to time constraints; the current study findings echo this assertion. A lack of coordination and the absence of designated certified diabetes educators were also significant impediments to adequate patient education in the present study.

Onyekachukwu (2016) suggested that DSME is a regular activity at every clinic visit in Nigeria. Such an assertion may be an unwarranted assumption, given the findings of this study and others. Perhaps such a claim may stem from a fundamental misunderstanding about the nature of SME. Any instruction or information deemed to be SME must meet the required teaching and learning of problem-solving and decision-making skills that constitute ideal DSME. The nature of instruction provided to patients and families in the diabetes clinic in Nigeria and the content, structure, and mode of delivery warrants further exploration.

SMS is one of the components of the CCM, a synthesis of evidence-based system changes aimed to improve healthcare to meet the needs of people with chronic illnesses (Sherifali, Berard, Gucciardi, MacDonald, & MacNeil, 2018; Wagner et al., 2001). The CCM has other interlinked elements that work together to ensure appropriate care for persons with chronic conditions (Wagner et al., 2001). In my study, Nigerian HCPs provided a form of SMS without the facilitating elements of (a) a supportive health system leadership, (b) availability of resources within the community to offer ongoing support to patients with diabetes, (c) core diabetes SMS training and certification and continuing professional education for HCPs, and (d) a healthcare system that is designed to provide holistic needs for persons with diabetes and other chronic illnesses. Providing adequate SMS proved to be an uphill task without these supporting components. These supporting elements listed above are what Pearce et al. (2016) termed indirect SMS in a descriptive taxonomy of SMS components. SMS is direct when interventions are delivered to people with long-term diseases and their caregivers. Indirect SMS occurs when HCPs and the organizations where they work (hospitals and clinics) are empowered to provide direct support to patients and their caregivers. The hospital settings and participants in my study were not adequately prepared for SMS.

Inertia in HCP and organization. Participants regularly identified gaps and different ways diabetes SMS practices could be enhanced. However, there seemed to be no active effort to effect change. Similar to the findings of this study, Abrahams et al. (2019) documented bottlenecks, which resulted in resistance to change. Abrahams et al. suggested that system inertia was a considerable hindrance to innovations because older staff in their study did not want anything that would add to their workload. Persistent lack of essential resources may have resulted in characteristics of learned helplessness and reliance on authority to conceive and initiate change found in this study. Similarly, Watermeyer et al. (2019) described a situation where HCPs in a South African public hospital adapted to the chronic lack and deprivations in their healthcare system by overlooking the systemic issues. The HCPs studied by Watermeyer et al. tried to develop creative strategies to meet their goals. Participants in the present study believed that hospital management was unwilling to engage in any undertaking that would incur extra cost to an already impoverished system. Rather than effecting change, HCPs found ways to work amidst the deficiencies within the system; for instance, by giving on-the-spot, brief diabetes education.

The lack of material and human resources in the Nigerian healthcare system and other African countries is well documented (Atun et al., 2017; Fasanmade & Dagogo-Jack, 2015; Oyewole et al., 2020). This lack of resources includes a shortage of staff, absence of diabetes educators, and lack of specialized training for health professionals who work in the diabetes clinic (Abrahams et al., 2019; Dube et al., 2017; Fasanmade & Dagogo-Jack, 2015; Murphy et al., 2015). Inadequate staffing creates overcrowded clinics, which causes rushed consultations. Watermeyer et al. (2019) described the high workload and time pressure that HCPs experience, which causes HCPs to rush patients through consultations. This pressure results in HCPs not providing adequate support while patients feel uncared for or unheard. Patients’ SMS needs are not adequately addressed when consultations are hurried. Consequently, such patients manifest inadequate knowledge of their condition and are thus poorly prepared to manage their disease at home. Many participants in the present study did not feel particularly confident in their ability to provide SMS. Some admitted that they were not being prepared for their SMS roles. Similarly, Abrahams et al. (2019) noted that the absence of in-service training for HCPs in specific aspects of chronic care hindered HCPs’ capacity to provide SMS.

In my study, HCPs did not receive diabetes continuing professional education for SMS. Many HCPs—notably the nurses, dietitians, and health educators—did not acquire education on current concepts in chronic illness management such as self-management, empowerment, quality of life, behaviour change techniques, and how to promote empowerment and maximize functional status for people with chronic illnesses during their prelicensure professional education programs. Nurses and possibly other HCPs may have competence in the pathophysiological knowledge of diabetes and understand the signs, symptoms, pathophysiology, and medical and nursing management; however, many HCPs lack competency and education on providing SMS and SME. Practitioners in chronic disease care must be specially prepared for their roles and require a specialized set of skills to be successful. Adequate preparation results in a skilled and confident clinical team that can support patients in managing their chronic conditions. Patients who are not supported may struggle to manage their diabetes effectively.

Although participants attempted to provide SMS in a system that was not fully equipped to support it, some positive findings could be drawn from this study. For instance, HCPs tried to make their care culturally acceptable to their patient population by incorporating existing cultural values such as prayers, herbal treatments, and the patient's family. HCPs also provided their phone numbers to assist patients with immediate decisions that could save lives, such as responding to hypoglycemia. One of the critical activities that the Nigerian HCPs in this study engaged in was helping patients accept their condition amid social beliefs that made diabetes seem like a death sentence. Some HCPS also addressed patients' spiritual needs, including providing hope.

Some may question whether these Nigerian HCPs actually provided SMS given their focus on compliance; however, some of the HCPs' activities undoubtedly met the criteria for SMS according to the comprehensive descriptive taxonomy of SMS interventions (Pearce et al., 2016). HCPs described how they used different strategies and resources to bypass challenges in providing SMS. For example, participants gave their phone numbers to some patients to ensure the patients continued communication while at home, thereby providing patients with easy access to advice and support. This practice filled a gap created by the absence of a channel for providing continuous support to patients. HCPs also prescribed cheaper generic but equally effective medications for overcoming the problem of cost, making it easier for patients to adhere to prescribed medications. Also commendable was the HCPs' actions to provide culturally acceptable care through incorporating certain cultural beliefs and practices such as prayers, family involvement, and use of herbs rather than outrightly dismissing these practices. Incorporating knowledge about patients' cultural beliefs, values, and practices in patients' care is associated with reduced HbA1C levels and improvements in diabetes-related knowledge, perceived competence in managing diabetes, and quality of life (Attridge et al., 2014; Gucciardi, Chan, Manuel, & Sidani, 2013). Although some of the SMS interventions by Nigerian HCPs are commendable, there remains considerable room for improvement.

Limitations

This study was limited in three primary ways. First, this study was restricted to the perspectives and experiences of HCPs. Patients' and families' perspectives were not explored; both perspectives could have provided more balanced data to inform the understanding of SMS in Nigeria. Further, this study was carried out in two government-owned hospitals; these hospitals are used mostly by people of low- and middle-income brackets. Individuals in the upper class mainly prefer to use private hospitals; therefore, the assumptions and inferences made in this study may not apply to those in a higher-income bracket because the orientation of HCPs in such settings might differ. Additionally, this study was carried out in two outpatient clinics located in one state in southeastern Nigeria and may not represent the experience of all HCPs in Nigeria. Nigeria consists of people from multiple ethnic groups with different cultural beliefs and practices; therefore, the context and strategies used by HCPs in this study may differ in different regions of the country.

Although these findings represent the views of HCPs working in two diabetes clinics in Nigeria, the findings may also reflect the views of other professionals providing care to persons with T2DM in many developing countries. This research aimed to develop a deep understanding of the perspectives, experiences, and practice of SMS among Nigerian HCPs providing care to persons with T2DM. The detailed account of my methods and rich analytic findings will allow readers to determine the credibility and transferability of my findings.

Summary

Some researchers have explored self-management of diabetes in the context of Nigeria and many studies revealed poor diabetes outcomes (Fasanmade & Dagogo-Jack, 2015; Uloko et al., 2012); however, prior studies have mainly focused on the patients and their adherence or compliance with self-care recommendations. Few researchers in Nigeria have focused on HCPs and no prior studies have explored the nature of support provided to patients with T2DM in Nigeria. This study provided a unique insight into the perspectives, experiences, and practice of SMS among Nigerian HCPs and their consequent contribution to poor self-management and diabetes outcomes. Nigerian HCPs in this study practiced in a context in which there were distinctive cultural beliefs and practices around diabetes, lack of health insurance, and a situation in which diabetes care was organized in the same manner as acute illnesses. The participants' values and practices reflected SMS that was characterized by an emphasis on compliance, hierarchical relationship between HCPs who see themselves as experts, and patients as passive followers. Despite this context, HCPs attempted to provide as much support as time and resources permitted. I will recommend ways to strengthen SMS for persons with diabetes in Nigeria in Chapter 6.

Chapter 6

Conclusion and Implications for Practice, Education, Policy, and Research

Chapter 6: Conclusion and Implications for Practice, Education, Policy, and Research

My objective in this study was to inform SMS practices for persons with T2DM in Nigeria through exploring the perspectives, experiences, and practice of SMS among Nigerian HCPs providing care to persons with T2DM. Based on this study's findings, I offer recommendations framed as implications for practice, education, policy, and research. The recommendations will help strengthen SMS for persons with T2DM in Nigeria.

The study findings indicated that Nigerian HCPs do not have the most effective organizational infrastructure and support to provide SMS. In turn, HCPs in Nigeria do not adequately provide SMS to persons with T2DM. Nigerian HCPs practised in a unique social and cultural context where many of the infrastructures usually taken for granted in developed countries are not available. For instance, many of the patients who visited the clinic paid out of pocket for their medical expenses because they lack health insurance. Additionally, patients had a widespread belief in the supernatural origin of diabetes and culture of individual-family interdependence, unlike the value of individual responsibility that the western culture upholds. Diabetes is primarily managed at the secondary and tertiary levels of care, excluding primary care. Further, both clinics lacked diabetes educators, and no personnel or time were dedicated explicitly to diabetes education.

Given the uniqueness of this context, I have made suggestions related to (a) eliminating known barriers to self-management and SMS, (b) identifying and using available resources within the communities to support patients in their self-management, and (c) adapting interventions to suit the Nigerian social and cultural context. HCPs should identify and strengthen measures to bypass challenges within the Nigerian context while providing care that will be culturally acceptable to patients; these measures could have an immediate impact on SMS.

Like many developing countries, Nigeria has a weak health system characterized by poorly developed health infrastructure. Consequently, HCPs have difficulty applying evidence-based approaches for improving the care of people with chronic diseases, such as SMS and other components of the CCM. As a result, WHO Chronic Diseases and Health Promotion (2002) adapted the CCM to suit developing countries such as Nigeria. The adapted form of the CCM—the ICCC framework—provides a comprehensive and robust layout for updating healthcare to meet the needs of persons with chronic illnesses across a range of settings (WHO, Chronic Diseases and Health Promotion, 2002). The central premise of the ICCC framework is that an optimal outcome in chronic illness is achieved when a healthcare triad is formed among patients and families, healthcare teams, and community supporters. The triad best functions when each member is informed, motivated and prepared to manage chronic conditions and when members of the triad communicate and collaborate with each other at all levels of care. The triad is influenced and supported by the larger healthcare organization, the broader community, and the policy environment. The ICCC framework suggests that the different levels of the healthcare system—micro (patients and families, and healthcare teams), meso (healthcare organization and community), and macro (policy)—interact and influence each other (WHO, Chronic Diseases and Health Promotion, 2002). Therefore, HCPs, leaders, public health officials, and policymakers must consider influencing these different levels of the system to be effective. Recommendations in this study are targeted towards influencing changes at these different levels.

Implications for Practice

Based on this study's findings, I have made recommendations focused on organizing and equipping healthcare teams and providing enhanced SMS interventions for patients and their family members.

Diabetes SMS education for HCPs and the creation of dedicated and certified diabetes educators. No HCP was explicitly dedicated to SME in the two hospitals. Many of the participants in this study mentioned being ill-equipped to offer many SMS interventions needed to improve patient's DSM. HCPs were also too time-pressured to address the educational deficits and psychosocial needs of patients. HCPs who work with individuals with diabetes need evidence-based skills, such as advanced communication skills (e.g., motivational interviewing), behaviour change techniques, SME, and counselling skills for managing patients with chronic conditions. HCPs also need a wide variety of affordable educational resources, such as posters. Healthcare organizations must ensure that HCPs who provide care directly to persons with diabetes at the diabetes clinics have the expertise and tools to provide SMS. Furthermore, diabetes educator roles must be created. The diabetes educator role could be assumed by existing staff members such as nurses, dieticians, and pharmacists who should be formally trained and certified for that role. No diabetes educator certification programs currently exist in Nigeria; however, such programs are available online (IDF School of Diabetes, n.d.). Diabetes educator roles may not be feasible in Nigeria given the organizational context and poorly funded healthcare systems. In some low-resource countries, other resources within the community such as nongovernmental organizations, community health workers, expert patients, volunteers, and peer supporters have been used to provide SMS to patients with positive results (Angwenyi et al., 2019; Sharp et al., 2020; Van Olmen et al., 2015). Such initiative could be replicated in Nigeria.

Knowledge is central to self-management. Persons with T2DM must have a full understanding of their condition to manage themselves adequately; therefore, having someone whose role is to provide education and dedicated time for SME will help bridge the gap and ensure that this vital aspect of diabetes management is not being rushed or relegated.

Enhanced SMS for patients and family members. Diabetes care should be oriented around patients and families who can become more effective through enhanced knowledge, skill, and confidence in managing T2DM (Lorig & Holman, 2003). This study showed that, on the one hand, family members provide different kinds of support, including helping with self-management tasks, financial support, reinforcing diabetes education at home, and meal planning. On the other hand, this study showed that family members could also interfere with self-management. Negative interference from family members occurs when family members have a different or opposing belief regarding diabetes and its management; thus, HCPs must find a systematic way to support and involve family members in SMS. Patients and families require appropriate information to effectively participate in care and decision-making. Baig et al. (2015) conducted a systematic review of 26 studies that reported findings from family-based DSM interventions for adults with diabetes among racial and ethnic minority groups in the United States. Baig et al. reported that most of the studies noted significant improvements in HbA1c from baseline to postintervention, reduction in blood pressure and body mass index, improvement in patient-reported depressive symptoms, improvement in patients' diabetes knowledge, improvements in dietary habits, and a significant decrease in emergency room visits. Family participation described in different studies included a family invitation to attend intervention classes or meetings, family-themed topics in the SME sessions, and family participation in physical activities and cooking classes (Baig et al., 2015; Pamungkas, Chamroonsawasdi, & Vatanasomboon, 2017). SMS should include interventions designed to help patients and families manage their diabetes and include SME and other supportive interventions, such as the provision of easy access to advice, practical help with behaviour change activities, lifestyle advice, information about available resources, and training for psychological strategies (Pearce et al., 2016). The expectations of adequate glycemic control and satisfactory quality of life are unrealistic if patients and their families do not receive ongoing SMS; therefore, SMS should be at the center of diabetes management in all diabetes clinics in Nigeria. As Onyekachukwu (2016) recommended, SMS must occur in every clinic visit rather than primarily on diagnosis, as was found in my study

The occasional one-on-one education given to patients from different HCPs is necessary, but not enough for patients to sustain a lifetime of DSM. DSME and other supportive interventions must be ongoing for patients to manage themselves well (Beck et al., 2020). SME involves more than knowledge-based content delivered passively to patients as is currently practiced in both clinics; rather, SME incorporates a variety of informative, interactive, and collaborative teaching methods and content tailored to the patients' needs, concerns, ability, culture, literacy level, and available resources (Castro et al., 2016; Anderson & Funnell, 2010). To this end, there is a need to not only improve the education provided to persons with diabetes in Nigeria but to make SME a core aspect of diabetes management. The content of DSME should include (a) essential principles such as diabetes pathophysiology and treatment options, (b) healthy eating, (c) physical activity, (d) medication usage, (e) monitoring and using patient-generated health data, (f) preventing, detecting and treating acute and chronic complications, (g) healthy coping with psychosocial issues and concerns, and (h) problem-solving (Beck et al., 2020). However, HCPs must adapt the content and mode of delivery of this education to make it more useful, contextually relevant, and practical (Sidani, Ibrahim, Lok, Fan, Fox, & Guruge, 2017). Cultural adaptation is defined as modifying the nonspecific elements of an intervention to align the intervention with the community members' beliefs and experiences (Williams, Wang, Burgess, Li, & Danvers, 2013). In this context, the intervention must be consistent with the deep and surface-level aspects of the culture (Sidani et al., 2017) by using familiar terms, languages, food, and images to drive the message home. For instance, diabetes education in this context could be made culturally appropriate by including culturally sensitive information such as the meaning of chronic disease, spiritual causal theories, and other native ideas such as "*acha-ere*," which refers to diabetic foot ulcers. Educators should be considerate of the patient's sociocultural context and incorporate practical everyday issues to help patients build the necessary skills and confidence for managing their condition at home. DSME should involve interactive sessions among patients and HCPs or peers. Patients may then feel free to share their stories and real-life challenges in a conducive setting. Hospitals could also recruit volunteers and peer educators or expert patients to provide practical and useful advice and information to which patients and their families can relate.

Furthermore, HCPs should provide different SMS diabetes educational materials. For instance, posters with relevant and culturally appropriate messages, metaphors, and images in native languages to enhance self-management should be displayed in different locations in the clinic. Diabetes educational materials written in simple everyday language that target major issues—such as diabetes knowledge, self-management strategies, and cultural issues—should be developed in the form of pamphlets, flyers, or booklets and given to patients either freely or at a modest cost. Educational materials should be written in simple English as well as in the local native languages. HCPs do not need to develop these materials from nothing as there are extensive patient support and education materials available on the internet; instead, HCPs must adapt these resources to local requirements. As part of dietary education and counselling, persons with diabetes should be taught the principles guiding dietary management, how to make healthy food choices, how to use the food exchange list, and how to count their carbohydrate intake. This knowledge would give patients some flexibility and alternatives, provide a guide for healthy nutrition, and deepen patients' understanding.

Organizing and equipping healthcare teams. Compliance orientation was prevalent among participants in this study. The current conceptualization of chronic disease care emphasizes patient-centred care and collaboration between patients, families, and HCPs to promote holistic care and empower patients to make self-directed behaviour change (Kawi, 2012). Such collaboration is a crucial aspect of SMS, a universal concept of chronic disease care that applies to both high-income and developing countries. Patient-centred care involves an understanding of the patient's peculiar circumstances, including the patient's culture. HCPs in both settings understood the place of family and cultural and religious belief in SMS; these cultural values must be encouraged.

In this study, the healthcare system was organized around an acute care model that attended mostly to the patients' immediate medical needs rather than providing the ongoing proactive care that chronic conditions require. Patients, HCPs, and policymakers must recognize and act on the understanding that effective chronic care requires a different kind of healthcare system. Each group of HCPs in the current study worked independently, thereby limiting the use of their collective strength. Interprofessional collaborative practice occurs when HCPs from different professions work together with patients, families, and communities to provide the highest quality of care (WHO, 2010). Additionally, collaborative practice involves a team-based approach based on a commitment to meet patients' holistic needs (King, Nancarrow, Borthwick, & Grace, 2015). Diabetes management requires a multidisciplinary approach where all involved HCPs work together for a common goal. This approach requires mutual trust and respect among the different members of the team. Interprofessional education in which students from two or more professional groups learn about, from, and with each other is needed to promote collaborative practice (WHO, 2010). Through this medium, HCPs learn to respect and trust one another and understand each other's scope of practice and knowledge base (WHO, 2010). Interprofessional education also helps to produce professionals who are ready and competent in collaborative practice. Other suggested strategies to build interprofessional collaborative practice include staff training, institutional support, and organizational commitment (WHO, 2010). The hierarchical structure, unclear role definitions, and lack of understanding of each group's scope of practice observed in my study settings were among the factors that negatively influenced the ability to collaborate.

Provision of necessary resources. Kawi (2012) identified organizational support as one of the essential attributes of SMS. Without corporate support, it becomes difficult for HCPs to access crucial resources that will enhance SMS. To improve diabetes management, health institution leaders must rise to the challenge of providing the necessary resources to support self-management. Such resources include patients' educational materials, certified diabetes educators, volunteers, peer educators, and a conducive environment. It is important to define SME roles and distribute tasks among the healthcare team. For instance, it is essential to designate and prepare specific HCPs for diabetes education. Such role assignments will make it easy for patients to access clear and timely information and care when needed. Role assignments will also make it easy for persons with diabetes to receive effective SME at diagnosis and at other critical times

(Cavan, 2010). Staff training on collaborative practice and institutional support will help eliminate some of the territorial issues observed in this study setting.

Implications for Education

Patients and relatives depend on HCPs for the knowledge and skill they require to manage their conditions at home. Therefore, the knowledge and skill set of Nigerian HCPs must be enhanced to enable HCPs to provide adequate support to patients. This knowledge enhancement could be done by improving the curriculum of professional education for different HCPs. Regular continuing education in chronic illness management, SMS, and collaborative practice is also needed.

Enhanced training of HCPs. An enhanced curriculum of training for HCPs is needed, especially for nurses. This recommendation is directed at diploma, undergraduate, and graduate-level courses for nursing and other HCPs. All team members should use their unique professional orientation to attend to the physical and other needs of patients. For example, nurses should work collaboratively with physicians to provide education and teach new skills such as self-monitoring of blood glucose and insulin injections. Nurses should also focus on patients' psychosocial and relational support needs by providing counselling and advice to patients, as shown in this study. Nurses' unique position between patients and other HCPs enables nurses to (a) use their knowledge and skills to inform patients' self-management and (b) work collaboratively with other HCPs to meet patients' health needs. Nurses must have a vital role in the multidisciplinary team and a voice amongst other HCPs. In this regard, the leadership competencies of nurses should be deliberately developed through undergraduate and higher education. Education curricula for nurses and other HCPs should incorporate the current concepts in chronic illness management, principles of chronicity, the psychosocial impacts of chronic diseases, behaviour change techniques in chronic illness management, and the role of SMS in diabetes management.

Many of the participants in this study confirmed that they had never received any continuing education on DSME or SMS despite working in the clinics for several years. Some participants attested to the limits of their ability to provide SMS. Nurses and other HCPs need special skills and knowledge beyond traditional biomedical training to effectively support patients. Many of the nurses in the clinics had been in clinical practice for many years without being required to update their foundational knowledge gained in their BScN licensure programs.

In 2010, the NMCN introduced the Mandatory Continuing Professional Development Program (MCPDP) to help practicing nurses keep abreast of modern trends in practice (NMCN, 2020). All nurses practicing in Nigeria are expected to have at least one MCPDP prior to renewing their nursing license every 3 years; however, the courses covered in this program are selected by the NMCN and are limited in scope. My personal experience is that all the nurses from diverse nursing backgrounds and areas of practice are offered the same course irrespective of its relevance to the nurses' areas of practice. For instance, while teaching in one of the Nigerian universities, I had to undergo one of the MCPDPs to renew my license. All the continuing education courses offered focused on the care of patients with selected medical and surgical conditions, such as "nursing care of a patient with stroke" and "nursing care of a patient with rheumatoid arthritis." These topics had no relevance to my area of practice or most nurses who did not work in medical-surgical units. Similarly, Nsemo, John, Etifit, Mgbekem, and Oyira (2013) found that 95% of nurses who attended one of the MCPDPs in Cross-River State Nigeria believed that the program was not tailored to individual nurses' needs. The implication is that many nurses come to the program with expectations of learning new information and skills to improve their practice (Ingwu et al., 2019); however, these expectations are often not met.

Many nurses participate in MCPDP just to be able to maintain their professional registration and retain their jobs (Ingwu et al., 2019; Nsemo et al., 2013). The NMCN must restructure the MCPDP for nurses by designing different courses in diverse areas of practice. The restructuring implies that nurses working in diabetes clinics should be provided with access to resources to enhance their knowledge and skill in diabetes SMS. Additionally, different hospital leaders should be responsible for ensuring that the knowledge and skills of HCPs who work at the hospital are regularly updated.

Policy Implications

Many of the above recommendations may not work without a favourable policy environment to support and reinforce them. Decision-makers and planners can use appropriately planned policies to significantly impact the health of people living with chronic conditions such as diabetes. Recommendations included here comprised of leadership and advocacy, integrating chronic disease management into an already existing framework, promoting consistent financing, and developing and allocating human resources.

Leadership and advocacy. Advocacy should be used to create awareness about chronic diseases and the need for a shift in their management. Policymakers, leaders, patients, and HCPs can influence decision-makers and leaders to create the right environment for a positive change to enhance SMS. All forms of media could be employed as powerful tools for educating the public and promoting new attitudes concerning T2DM prevention and its management. The DAN currently uses the media to educate the populace on World Diabetes Days. The media should be used more regularly to share diabetes information, and diabetes education must be taken outside the confines of the hospitals. Public education will gradually erode widespread misconceptions about diabetes; such education will entail a deeper engagement of the masses to build confidence among the populace. Public education will also help diagnose many patients living with undiagnosed diabetes, which is frequently attributed to other factors.

Integration of diabetes management across all levels of health care. Chronic illnesses in Nigeria are managed at the secondary and tertiary system level; the primary healthcare system in Nigeria, which includes the primary healthcare centers, do not have the capacity to manage chronic illnesses (Fasanmade & Dagogo-Jack, 2015; Oyewole et al., 2020). This lack of capacity can be addressed by providing targeted education to primary healthcare center staff on core diabetes care and providing simple but essential diabetes education and disease monitoring tools.

Noncommunicable disease management must be incorporated into the existing primary healthcare system, particularly given the expected rise in chronic illnesses in the coming years. Primary healthcare facilities are uniquely positioned to manage chronic conditions in the community because they are the most physically accessible level of healthcare and provide essential services to the largest portion of the Nigerian population (Aigbiremolen, Alenoghena, Eboreime, & Abejegah, 2014). Integrating chronic disease management into the existing primary healthcare structure will bring diabetes management to the communities and also make available community resources such as community nurses, community health extension nurses, peer educators, and district officers accessible for continuing SMS.

Some innovative approaches used at the primary care level for other chronic diseases in Africa could be replicated in Nigeria. For instance, in many parts of Sub-Saharan Africa, innovations to deepen HIV care have leveraged existing resources within the primary healthcare setting; these existing resources include nongovernmental organizations, volunteers, community health workers, and peer educators (Angwenyi et al., 2018; Sharp et al., 2020). Such changes have improved access to care, reduced costs, boosted patient education and medication adherence, and cut the overall cost of care. In developing countries such as South Africa and Pakistan, measures have been taken to integrate chronic disease management at the primary care level with significant positive results (Egbujie et al., 2018; Sharp et al., 2020). These measures have resulted in treatment for uncomplicated noncommunicable diseases shifting from the hospitals to primary health centers where nurses could manage them. In some primary care centers, community health assistants have been trained to provide counselling, nutritional advice, promotion of treatment adherence, and instructions to family members on the care of their sick relatives. In Mozambique, Uganda, and South Africa, peers or trained expert patients have undertaken tasks such as the delivery of drug refills, adherence support, and referrals if problems occurred (Bekker et al., 2018; Decroo, Van Damme, Kegels, Remartinez, & Rasschaert, 2012). Angwenyi et al. (2019) found that volunteers from community-based organizations in Malawi provided patients with essential emotional and spiritual support. The recruitment and use of HIV experts to assist with HIV services in health facilities, communities, and patients' homes produced positive results.

Integrating diabetes management into primary care will enhance access to care, increase awareness of the condition, and make diabetes care more affordable to the populace. For example, nurses and community health extension workers could be trained by certified diabetes educators and employed as diabetes educators. The expansion of the diabetes workforce will help decongest the hospitals and ease the burden on HCPs at the higher levels of care, freeing them to manage complicated cases.

Strengthen healthcare financing. Nigerian healthcare financing must be reorganized. Strengthening the health insurance system will make it easier for patients to obtain needed medications and tests. This situation will relieve some of the tensions in patient-HCP interactions and ease the process of SMS. The results of this study and findings from Moucheraud, Lenz, Latkovic, and Wirtz (2019) have indicated that the cost of diabetes management is beyond the reach of many, especially for people of low socioeconomic status. Many of these people lack health insurance and are forced to disregard or downplay their condition as a result. Out of pocket payments for diabetes management pose severe financial burdens on families. To this end, cheaper strategies—such as activating the community-based health insurance—must be identified (Odeyemi, 2014). Additionally, prevention strategies are needed to reduce the number and severity of complications.

Regular audits. Diabetes care in various clinics must be monitored and evaluated. Such supervision and appraisal could be conducted by DAN and the regulatory bodies of the different professional groups closely involved in diabetes care. This recommendation could be achieved by developing a system of accreditation for diabetes education and SMS activities by monitoring care and outcome processes. The feedback should be used to improve diabetes care in many diabetes clinics in Nigeria.

Implications for Research

Potential changes to be made in the Nigerian healthcare system must be based on evidence; therefore, more research must be conducted in different areas of diabetes care. It is well established that patients in Nigeria are not managing well. Thus, the focus must shift to the processes through which SMS is offered and how SMS translates into actual DSM practices. Researchers could design studies to explore SMS experiences from the perspective of persons with diabetes and their families in Nigeria. It is crucial to study SMS experiences from the perspectives of persons with diabetes to determine what SMS interventions were helpful and determine other barriers that influence patients' self-management. Participatory action research is needed; such research would involve researchers working alongside community representatives to clarify the community's cultural beliefs about diabetes and discuss the effectiveness of different SMS interventions. The use of mixed-method research in this regard will enable people to (a) give their views about the problem and the interventions and (b) measure and expand on their cultural beliefs, values, norms, and experiences while reaching an agreement on aspects of the interventions that must be adapted as well as how to adapt them (Sidani et al., 2017). The findings of the proposed studies will help create a robust and culturally appropriate SMS program for persons with T2DM in Nigeria.

Future researchers could build on the findings of the present study by studying other institutions in Nigeria, such as private versus public hospitals, to determine similarities and differences and each setting's unique challenges. Furthermore, future researchers must explore how the existing resources at all levels of care could enhance the care of patients living with diabetes and other chronic illnesses. Additionally, future researchers should investigate issues of affordability for patients. The issue of cost reduction should be explored in the context of the health system structure and the potential role of government and other system financiers in managing costs. Researchers should identify and study successful DSM programs in the developing world to determine how these programs dealt with issues of poverty and health financing. It is also essential to explore how DSMS can be provided within a family context.

Reflection on my Research Journey

As I started this research, I had some bias based on my experience with patients and my observations at the clinic. I chose to study SMS due to my experience of seeing many patients with diabetes develop numerous complications. Therefore, my desire to find out what was wrong with the management of persons with diabetes in Nigeria and contribute to addressing it may have influenced my view. As a teacher, I am used to seeing things from an idealist perspective. Years of reviewing the literature on SMS also informed my thinking, and I started searching for ideas within my data that were expressly written in the literature. At first, it was difficult for me to recognize that my participants (Nigerian HCPs) provided SMS. Data construction reflects the researcher's active role in deciding what becomes data from the world of possibilities (Thorne, 2016). I realized that my study aimed to explore what HCPs do (regarding helping patients to manage their diabetes) and what informs HCPs' actions, rather than judging HCPs based on what I read in the literature.

I actively searched for the answers to my research questions in my data. Researchers who enter the field to find answers to carefully designed questions narrow the range of possibilities for a study and reduce the capacity to understand the complexity of their research (Thorne, 2016). The researcher should not select among available information to support a bias or preconceived opinion; instead, researchers should account for their intellectual processes through the data construction process (Thorne, 2016).

My experience was that my participants provided scant answers whenever I asked questions about SMS or associated concepts such as involving patients in their care and shared decision-making. Instead, participants used words such as advice, counselling, education, compliance, and adherence. According to Thorne (2016), what people talk about and how they talk about it is a form of social construction influenced by what they know and have experienced. Therefore, rather than putting words into the HCP's mouth or steering discussions in expected directions, I decided to be a nonjudgmental, neutral facilitator who allowed individuals to explain themselves as fully as possible. I explored what was articulable and shareable by individuals in their own way, context, and time, with the understanding that Nigerian HCPs may engage in different activities to help patients in their disease management rather than provide SMS as precisely as presented in the literature. It was this set of actions, how they are done, and their underlying motives that I aimed to uncover in this study.

As I collected data, critically reviewed the literature, and engaged in reflections, I came to a broader understanding of SMS. By providing easy access to advice through giving personal phone numbers to patients, promoting medication adherence by exercising flexibility in drug and lab prescriptions, and integrating cultural beliefs and values in patients' care, Nigerian HCPs assisted patients with diabetes in managing their condition. However, there remains much room for improvement. I hope that the findings of this study and future ones that will build on it will guide us in designing a robust SMS program for persons living with T2DM in Nigeria.

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Appendix A: Interview Protocols

Protocol 1

The order in which the questions will be introduced will depend on the healthcare providers' responses. They will be encouraged to give examples and details of circumstances about their work. Demographic data will be collected during the interview. After the first interview, I will thank the participants and ask for permission for a follow-up question to clarify or extend emerging ideas.

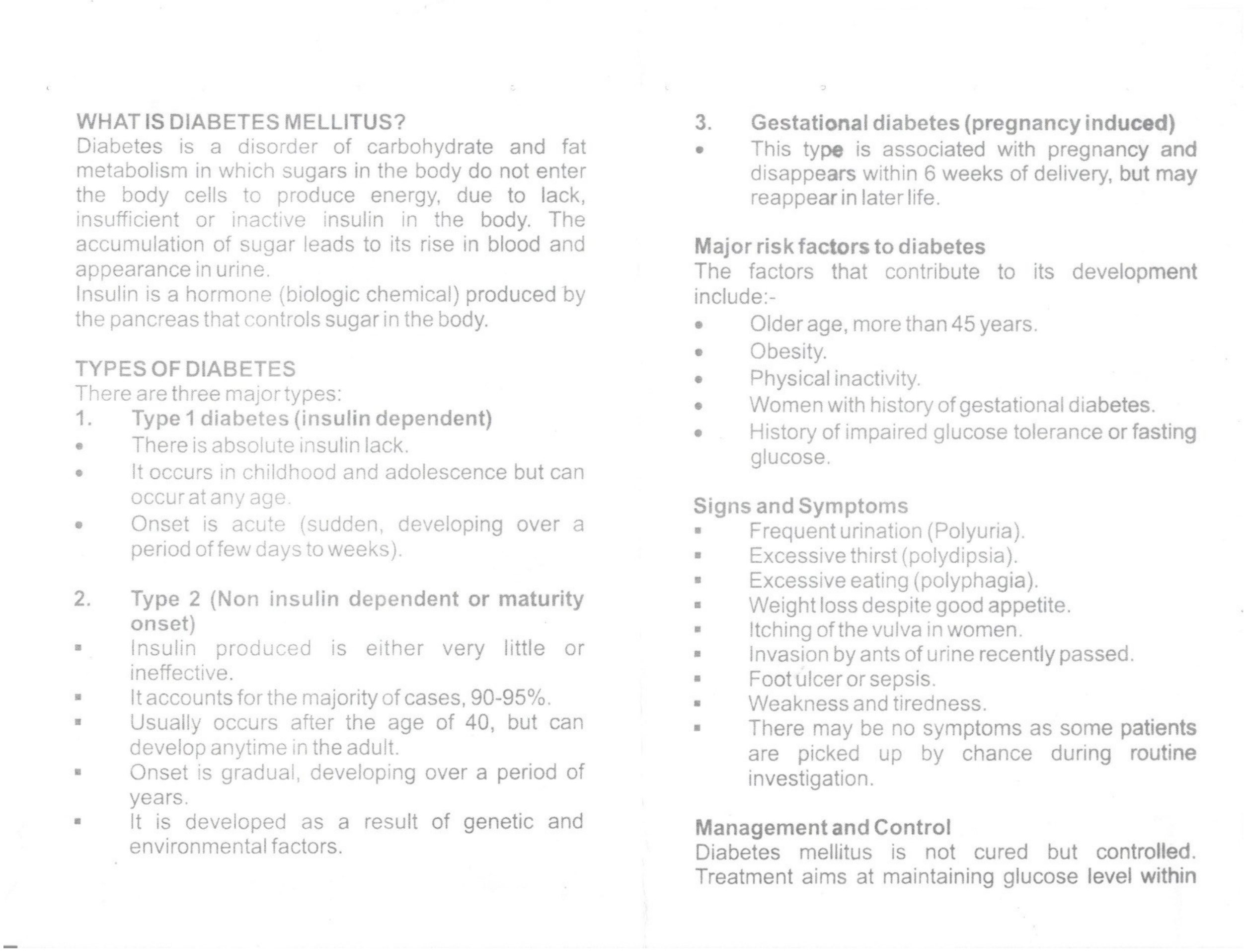
1. Could you tell me about your experience in working with out- patients with diabetes?
2. What is your goal when you provide care for persons with type 2 diabetes?
3. How do you help patients to manage their diabetes?
4. Tell me about the different ways you provide care to patients and why?
5. Think of a person who you think has benefitted really well from your care at the clinic. What made this patient's care so successful?

Protocol 2

In addition to the above interview questions specified in interview protocols 1 and 2, I will engage with participants informally to clarify issues that I noted during observation. The questions in the interview protocols are guides only and may be used in any order (during the formal interview), according to the flow of the discussion. Questions will be selected according to situational need. I will use follow up probes to explore more (e.g., tell me more, can you give me an example, what did you mean by X?). As the study progresses, I expect the interview questions to evolve and change to reflect my growing understanding of my participants experiences and perspectives and my theoretical analysis. Interviews will be audio-recorded and transcribed.

1. What influences the nature and extent of care that you provide to persons with type 2 diabetes at the clinic?
2. Are there difficulties you encounter in supporting out patients in managing their diabetes and how do you resolve them?
3. If you could make one change, without regard to money, what change would you make to enhance patients' care and why?
4. What three things would you like me to champion with regards to patient management and why?

Appendix B: Hospital One Patient Educational Material (used with permission)



WHAT IS DIABETES MELLITUS?

Diabetes is a disorder of carbohydrate and fat metabolism in which sugars in the body do not enter the body cells to produce energy, due to lack, insufficient or inactive insulin in the body. The accumulation of sugar leads to its rise in blood and appearance in urine.

Insulin is a hormone (biologic chemical) produced by the pancreas that controls sugar in the body.

TYPES OF DIABETES

There are three major types:

1. **Type 1 diabetes (insulin dependent)**
   - There is absolute insulin lack.
   - It occurs in childhood and adolescence but can occur at any age.
   - Onset is acute (sudden, developing over a period of few days to weeks).

2. **Type 2 (Non insulin dependent or maturity onset)**
   - Insulin produced is either very little or ineffective.
   - It accounts for the majority of cases, 90-95%.
   - Usually occurs after the age of 40, but can develop anytime in the adult.
   - Onset is gradual, developing over a period of years.
   - It is developed as a result of genetic and environmental factors.

3. **Gestational diabetes (pregnancy induced)**
   - This type is associated with pregnancy and disappears within 6 weeks of delivery, but may reappear in later life.

Major risk factors to diabetes

The factors that contribute to its development include:-

- Older age, more than 45 years.
- Obesity.
- Physical inactivity.
- Women with history of gestational diabetes.
- History of impaired glucose tolerance or fasting glucose.

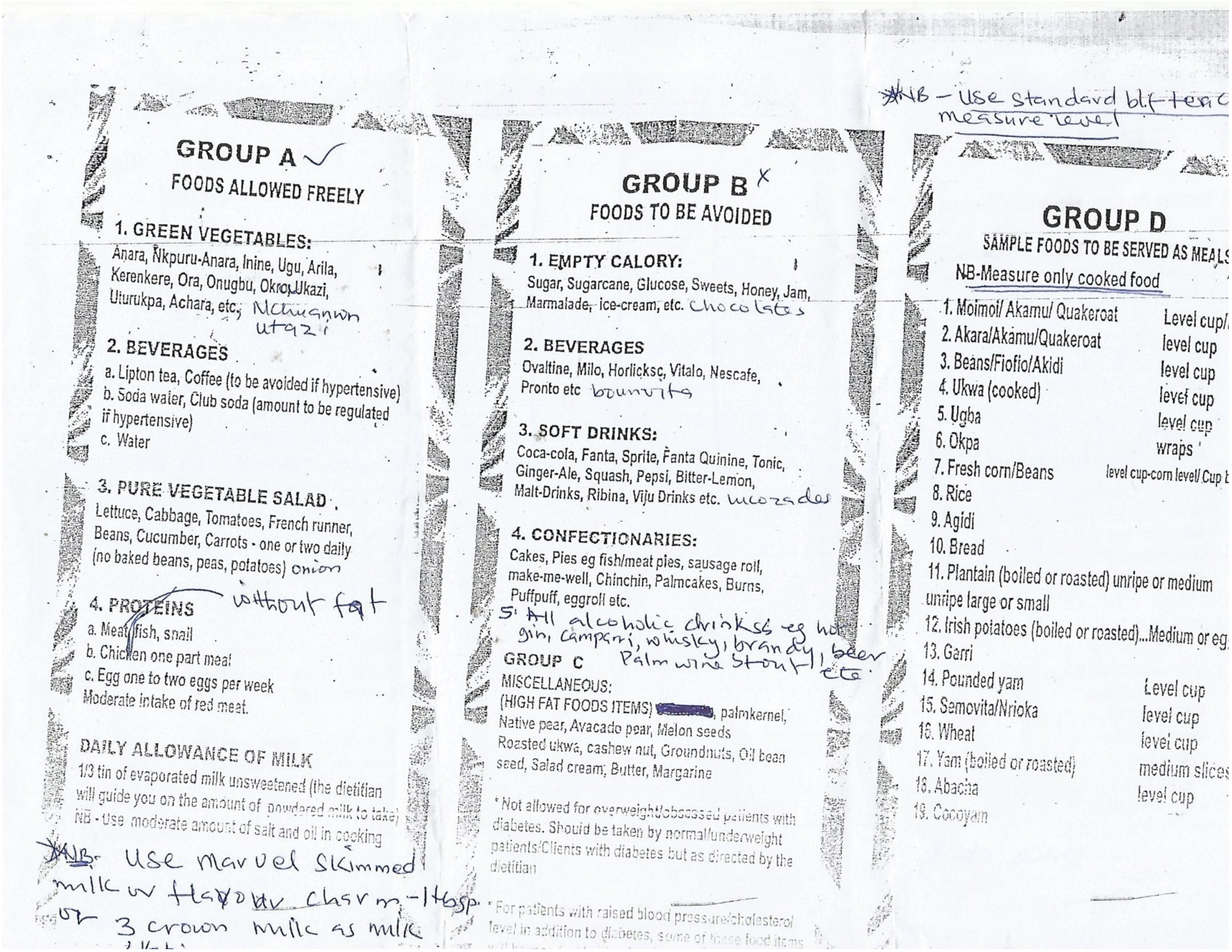
Signs and Symptoms

- Frequent urination (Polyuria).
- Excessive thirst (polydipsia).
- Excessive eating (polyphagia).
- Weight loss despite good appetite.
- Itching of the vulva in women.
- Invasion by ants of urine recently passed.
- Foot ulcer or sepsis.
- Weakness and tiredness.
- There may be no symptoms as some patients are picked up by chance during routine investigation.

Management and Control

Diabetes mellitus is not cured but controlled. Treatment aims at maintaining glucose level within

Appendix C: Hospital One Diet Guide (used with permission)



GROUP A ✓
FOODS ALLOWED FREELY

1. GREEN VEGETABLES:
Anara, Nkpuru-Anara, Inine, Ugu, Arila, Kerenkere, Ora, Onugbu, Okro, Ukazi, Uturukpa, Achara, etc; Nchuanwu utazi

2. BEVERAGES
a. Lipton tea, Coffee (to be avoided if hypertensive)
b. Soda water, Club soda (amount to be regulated if hypertensive)
c. Water

3. PURE VEGETABLE SALAD.
Lettuce, Cabbage, Tomatoes, French runner, Beans, Cucumber, Carrots - one or two daily (no baked beans, peas, potatoes) onion

4. PROTEINS without fat
a. Meat, fish, snail
b. Chicken one part meat
c. Egg one to two eggs per week
Moderate intake of red meat.

DAILY ALLOWANCE OF MILK
1/3 tin of evaporated milk unsweetened (the dietitian will guide you on the amount of powdered milk to take)
NB - Use moderate amount of salt and oil in cooking

*NB: Use marvel skimmed milk w ~~flavo~~ur charm - 1tbsp. or 3 crown milk as milk

GROUP B ×
FOODS TO BE AVOIDED

1. EMPTY CALORY:
Sugar, Sugarcane, Glucose, Sweets, Honey, Jam, Marmalade, ice-cream, etc. Chocolates

2. BEVERAGES
Ovaltine, Milo, Horlicksc, Vitalo, Nescafe, Pronto etc bournvita

3. SOFT DRINKS:
Coca-cola, Fanta, Sprite, Fanta Quinine, Tonic, Ginger-Ale, Squash, Pepsi, Bitter-Lemon, Malt-Drinks, Ribina, Viju Drinks etc. lucozades

4. CONFECTIONARIES:
Cakes, Pies eg fish/meat pies, sausage roll, make-me-well, Chinchin, Palmcakes, Burns, Puffpuff, eggroll etc.

5. All alcoholic drinks eg hot gin, camparri, whisky, brandy, beer, Palm wine Stout!! etc.

GROUP C
MISCELLANEOUS:
(HIGH FAT FOODS ITEMS) [redacted], palmkernel, Native pear, Avacado pear, Melon seeds Roasted ukwa, cashew nut, Groundnuts, Oil bean seed, Salad cream; Butter, Margarine

* Not allowed for overweight/obsessed patients with diabetes. Should be taken by normal/underweight patients/Clients with diabetes but as directed by the dietitian

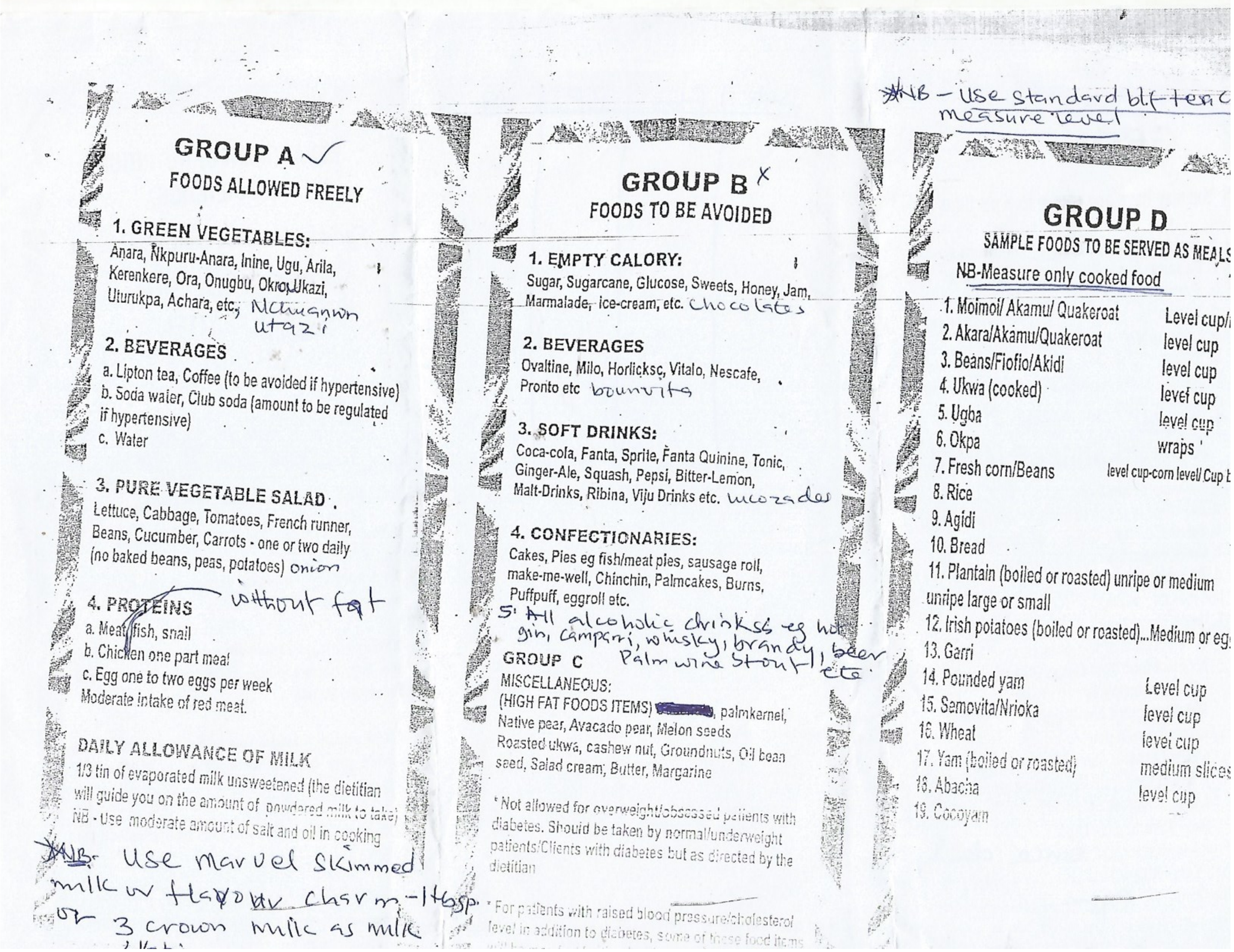
* For patients with raised blood pressure/cholesterol level in addition to diabetes, some of these food items

*NB – Use standard bl.f tea c measure level

GROUP D
SAMPLE FOODS TO BE SERVED AS MEALS

NB-Measure only cooked food

1. Moimoi/ Akamu/ Quakeroat	Level cup/
2. Akara/Akamu/Quakeroat	level cup
3. Beans/Fiofio/Akidi	level cup
4. Ukwa (cooked)	level cup
5. Ugba	level cup
6. Okpa	wraps
7. Fresh corn/Beans	level cup-corn level/ Cup
8. Rice	
9. Agidi	
10. Bread	
11. Plantain (boiled or roasted) unripe or medium unripe large or small	
12. Irish potatoes (boiled or roasted)...Medium or eg	
13. Garri	
14. Pounded yam	Level cup
15. Semovita/Nrioka	level cup
16. Wheat	level cup
17. Yam (boiled or roasted)	medium slices
18. Abacha	level cup
19. Cocoyam	



GROUP A ✓

FOODS ALLOWED FREELY

1. GREEN VEGETABLES:

Anara, Nkpuru-Anara, Inine, Ugu, Arila, Kerenkere, Ora, Onugbu, Okro, Ukazi, Uturukpa, Achara, etc; Nchuanwu utazi

2. BEVERAGES

a. Lipton tea, Coffee (to be avoided if hypertensive)
b. Soda water, Club soda (amount to be regulated if hypertensive)
c. Water

3. PURE VEGETABLE SALAD

Lettuce, Cabbage, Tomatoes, French runner, Beans, Cucumber, Carrots - one or two daily (no baked beans, peas, potatoes) onion

4. PROTEINS without fat

a. Meat, fish, snail
b. Chicken one part meal
c. Egg one to two eggs per week
Moderate intake of red meat.

DAILY ALLOWANCE OF MILK

1/3 tin of evaporated milk unsweetened (the dietitian will guide you on the amount of powdered milk to take)
NB - Use moderate amount of salt and oil in cooking

*NB. Use marvel skimmed milk or flavour charm - 1tbsp. or 3 crown milk as milk

GROUP B ✗

FOODS TO BE AVOIDED

1. EMPTY CALORY:

Sugar, Sugarcane, Glucose, Sweets, Honey, Jam, Marmalade, ice-cream, etc. Chocolates

2. BEVERAGES

Ovaltine, Milo, Horlicksc, Vitalo, Nescafe, Pronto etc bournvita

3. SOFT DRINKS:

Coca-cola, Fanta, Sprite, Fanta Quinine, Tonic, Ginger-Ale, Squash, Pepsi, Bitter-Lemon, Malt-Drinks, Ribina, Viju Drinks etc. lucozades

4. CONFECTIONARIES:

Cakes, Pies eg fish/meat pies, sausage roll, make-me-well, Chinchin, Palmcakes, Burns, Puffpuff, eggroll etc.

5. All alcoholic drinks eg hot gin, campari, whisky, brandy, beer Palm wine Stout, etc.

GROUP C

MISCELLANEOUS:
(HIGH FAT FOODS ITEMS) [redacted], palmkernel, Native pear, Avacado pear, Melon seeds Roasted ukwa, cashew nut, Groundnuts, Oil bean seed, Salad cream, Butter, Margarine

* Not allowed for overweight/obsessed patients with diabetes. Should be taken by normal/underweight patients/Clients with diabetes but as directed by the dietitian

* For patients with raised blood pressure/cholesterol level in addition to diabetes, some of these food items

*NB - Use standard b.t tea c measure level

GROUP D

SAMPLE FOODS TO BE SERVED AS MEALS

NB-Measure only cooked food

1. Moimoi/ Akamu/ Quakeroat	Level cup/
2. Akara/Akamu/Quakeroat	level cup
3. Beans/Fiofio/Akidi	level cup
4. Ukwa (cooked)	level cup
5. Ugba	level cup
6. Okpa	wraps
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8. Rice	
9. Agidi	
10. Bread	
11. Plantain (boiled or roasted) unripe or medium unripe large or small	
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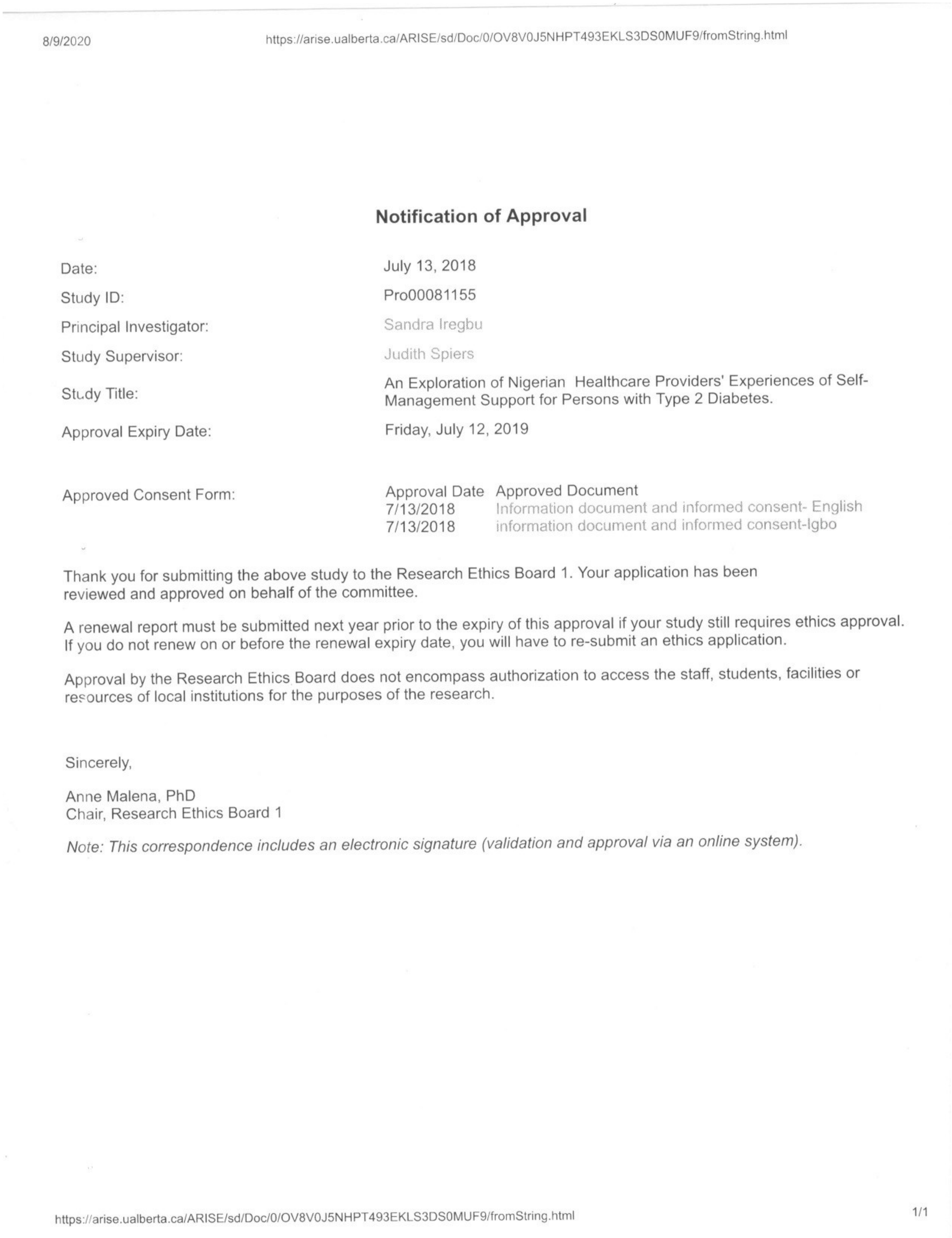
13. Garri	
14. Pounded yam	Level cup
15. Semovita/Nrioka	level cup
16. Wheat	level cup
17. Yam (boiled or roasted)	medium slices
18. Abacha	level cup
19. Cocoyam	

Appendix D: Research Ethics Board 1 Approval



8/9/2020 https://arise.ualberta.ca/ARISE/sd/Doc/0/OV8V0J5NHPT493EKLS3DS0MUF9/fromString.html

Notification of Approval

Date:	July 13, 2018
Study ID:	Pro00081155
Principal Investigator:	Sandra Iregbu
Study Supervisor:	Judith Spiers
Study Title:	An Exploration of Nigerian Healthcare Providers' Experiences of Self-Management Support for Persons with Type 2 Diabetes.
Approval Expiry Date:	Friday, July 12, 2019

Approved Consent Form:

Approval Date	Approved Document
7/13/2018	Information document and informed consent- English
7/13/2018	information document and informed consent-Igbo

Thank you for submitting the above study to the Research Ethics Board 1. Your application has been reviewed and approved on behalf of the committee.

A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the Research Ethics Board does not encompass authorization to access the staff, students, facilities or resources of local institutions for the purposes of the research.

Sincerely,

Anne Malena, PhD
Chair, Research Ethics Board 1

Note: This correspondence includes an electronic signature (validation and approval via an online system).

https://arise.ualberta.ca/ARISE/sd/Doc/0/OV8V0J5NHPT493EKLS3DS0MUF9/fromString.html 1/1

Appendix E: Poster for Recruitment of Study Participants

Healthcare Professionals: Invitation to Participate

Healthcare Providers' Experiences of Self-Management Support for Persons with Type 2 Diabetes in Nigeria

Who? Healthcare providers such as Endocrinologists, nurses, pharmacists, dietitians and health educators, who provide care to patients at the diabetes clinic.

What & Why? We are looking for the above healthcare providers to share their experiences of providing care to persons with type 2 diabetes.

I need your expertise in understanding how social, cultural and Nigeria's healthcare context influence your self-management support decisions and practices.

When & Where? I am seeking as many eligible healthcare providers as possible. You will talk about your experiences in about two interview which will last about 30-45 minutes each. You may also be observed as you provide care to patients at the clinic.

If you have worked with diabetes patients in the clinic for up to a year, can speak English or Igbo language and is willing to be interviewed or observed, I need you. Times, dates and place will be determined once participants have volunteered. You will be provided with snacks in appreciation of your time.

How? If you are interested or would like more information, please contact Sandra Iregbu, by email: **iregbu@ualberta.ca** or phone: **08038752609**.

This study has been reviewed and approved by the University of Alberta Research Ethics Board #Pro00081155 and Hospital Ethics committees

Appendix F: Information Letters and Consent Forms

English Version

Study Title: An Exploration of Nigerian Healthcare Providers' Perceptions and Practice of Self-Management Support for Persons with Type 2 Diabetes

Research Investigator: Sandra Iregbu, MSN, RN
Doctoral Student, Faculty of Nursing
University of Alberta
Email: iregbu@ualberta.ca
Phone: 08038752609

Supervisors
Wendy Duggleby, PhD, RN
Professor and Associate Dean, Research
Email: wendy.duggleby@ualberta.ca
Phone: 780-492-6764

Jude Spiers, PhD, RN
Associate Professor
Email: jaspiers@ualberta.ca
Phone: 780 492 9821

Address: Faculty of Nursing Level 3, Edmonton Clinic Health Academy
11405 87 Avenue, University of Alberta
Edmonton Alberta, Canada. T6G 1C9

Background

Invitation to Participate In A Research Project

My study focuses on Nigerian healthcare providers' experiences of self-management support for persons with type 2 diabetes. The focus of this study is informed by the widely reported poor state of health, with high rates of disability and death, among persons with diabetes in Nigeria. The poor state of health in this population has been attributed to poor self-management caused by lack of adequate understanding of the disease and its management, poverty and inability to afford prescription drugs and other essentials. In addition, low health literacy and cultural beliefs and practices that differ from the biomedical norms have been implicated in poor self-management outcomes.

While many of the studies carried out in Nigeria have focused on patients, very few have attempted to look at processes through which patients are educated and supported to manage their diseases effectively. My study attempts to bridge this gap by exploring Nigerian healthcare providers' experiences of self-management support for persons with type 2 diabetes.

You are being asked to be in this study because you are a healthcare provider and provide care to persons with diabetes at the diabetes clinic. This study is being conducted at two out-patient clinics in the South-Eastern part of Nigeria to understand healthcare providers' experiences of self-management support. Participants will include physicians, resident doctors, registered nurses, dietitians, pharmacists and health educators. As a health professional who provides direct care for persons with diabetes, you are well suited to share your experiences.

The study is being conducted as part of the requirement for my degree
This information sheet is included to provide more information regarding this study.
Before you decide to participate, the researcher will go over this form with you. You are encouraged to ask questions if you feel that anything needs to be made clearer. You will be given a copy of this form for your records.

Purpose

Self-management support is an essential aspect of chronic disease management. As a way of informing a comprehensive self-management support program for patients living with type 2 diabetes,-I am interested in understanding the nature of support that healthcare professionals provide to patients, as well as factors that influence their self-management support decisions and practices.

Study Procedures

This is a qualitative study exploring Nigerian healthcare providers' perspectives of self-management support. If you agree to participate, you will be required to do the following:

- Participate in a minimum of two interviews which will last about 30 to 45 minutes each. The interview will be audio recorded to facilitate data analysis. The interview will take place at a mutually agreed time and place or as deemed appropriate by the clinic manager and health professional. Phone interviews may be done when there is need to clarify issues discussed earlier.
- You may be observed as you provide care to patients during their follow-up visit. The observation will take place in the diabetes clinic. I will shadow and observe you, perhaps

for a full day or as I follow patients and write down my observations. I will also ask you questions about what I am observing. I will be at the clinic every clinic days. Initially, I will be in the clinic throughout the day for observation, but as the study progresses, my observations will become more focused lasting for fewer hours in a day.

- This study will also involve a review of Clinical Practice Guideline developed by the Diabetes Association of Nigeria and patient educational materials in use at the clinic.

Benefits

This study will not be of immediate and direct benefit to you. However, the findings of this study may enhance understanding of factors that influence the provision of self-management support for persons with type 2 diabetes in Nigeria. It may lead to improved knowledge that could potentially help to improve the state of diabetes care in Nigeria.

You will not be paid for being in this study; however, I will provide snacks to you after the interview in appreciation of your time.

Risk

It is not possible to know all the risks that may happen in a study, but the researcher has taken all reasonable safeguards to minimize any known risks to a study participant. You may get tired, upset or experience discomfort in talking about difficult patient care experiences or in reflecting on your practice. You may also feel a sense of loss of privacy from being observed as you carry out your routine work or from sharing your ideas and experiences in the clinic.

To mitigate the above, Interviews will be conducted in a comfortable place which will be mutually decided by you and the researcher. The interview or observation may be stopped and re-started any other time if you feel tired or stressed. Also, each interview will last for only 30 to 45 minutes or less if you choose to stop and re-schedule.

You have the option of just being interviewed or being observed or both.

I will not discuss your individual views with others in ways that might identify you. I will remove every piece of information that can identify you such as your name, contact details and name of your hospital to protect your identity.

Voluntary Participation

You are under no obligation to participate in this study. The participation is completely voluntary. Also, you are not obliged to answer any specific questions even if participating in the study. You can withdraw at any time by telling me directly or let the clinic manager know and the message will get to me. You can opt out without penalty and can ask to have any collected data withdrawn from the database and not included in the study. Even if you agree to be in the study, you can change your mind and withdraw at any time. However, because the research cycle employs concurrent data generation and analysis, I cannot remove or forget data. I would stop analyzing a transcript if you asked to withdraw from the study within a week of the interview. If after this time, I will not use that participant's quotes in my reports but cannot withdraw the data once analyzed.

Confidentiality & Anonymity

This study is being carried out as a requirement for my doctoral program. Findings will be published in academic journals and presented in professional and academic conferences/workshops. Findings will bear no information that can be linked to you.

Your data will be kept private. No data relating to this study that includes your name, contact details and any other information that can identify you including the name of your institution will be released outside of the researcher's office or published by the researcher.

Audio interview files will be securely transferred to a password protected folder, accessible to only me and my supervisory committee members and when appropriate destroyed in a way that ensures privacy and confidentiality. Field notes, journals and memos will also be scanned and stored in the password protected folder. Hard copies of documents related to this study such as the consent forms, demographic information sheet etc. shall be stored in a locked filing cabinet accessible only the principal investigator and the supervisory committee members.

All hard copies of documents related to the study will be destroyed through confidential shredding at the end of the study.

I will ensure participant confidentiality by storing electronic data securely in a secure shared folder in the Faculty of Nursing network where only my supervisors and I will have access. Once the study is completed and I have passed my final defence, all data stored on the Faculty of Nursing Secured Network folder will be downloaded into password protected and encrypted folders in my home computer and will be kept for a minimum of five years. There are currently no plans for future data use. Should opportunities arise for the potential future use of these data, they will occur only in accordance with all necessary ethical approvals in place.

Further Information

If you have any questions about this study now or later, please contact [08038752609] The plan for this study has been reviewed by a Research Ethics Board at the University of Alberta. If you have questions about your rights or how research should be conducted, you can call (+1780) 492-2615. This office is independent of the researchers.

The researcher did not receive any funding from any funding agency.

Consent Statement

I have read this form, and the research study has been explained to me. I have been given the opportunity to ask questions, and my questions have been answered. If I have additional questions, I have been told whom to contact. I agree to participate in the research study described above and will receive a copy of this consent form. I will receive a copy of this consent form after I sign it.

_______________________________________ _____________
Participant's Name (printed) and Signature Date

_______________________________________ _____________
Name (printed) and Signature of Person Obtaining Consent Date

This study has been reviewed and approved by the University of Alberta Research Ethics Board #Pro00081155 and Hospital Ethics committees

Information Letter and Consent Form: Igbo Version

Aha Nyocha: *Nyocha ndi nlekota ahu ike iji mara obi ha na ihe ha na-eme iji nyere ndi na-aria oria shuga aka.*

Onye Nyocha: Sandra Iregbu, MSN, RN
Doctoral Student, Faculty of Nursing
University of Alberta
Email: iregbu@ualberta.ca
Phone: 08038752609

Ndi nkuzi:
Wendy Duggleby, PhD, RN
Professor and Associate Dean, Research
Email: wendy.duggleby@ualberta.ca
Phone: 780-492-6764

Jude Spiers, PhD, RN
Associate Professor
Email: jaspiers@ualberta.ca
Phone: 780 492 9821

Address: Faculty of Nursing Level 3, Edmonton Clinic Health Academy
11405 87 Avenue, University of Alberta
Edmonton Alberta, Canada. T6G 1C9

Ihe nyocha a putara.

A si ka I sonye n'ihi na I so na ndi na elekota ndi na-aria oria shuga na ulo ogwu anya. Nyochaa bu maka iji mara obi unu na kwa Ihe unu na-emegasi iji kwado ndi na aria udi oria maka ilekota onwe ya nke oma.

Tutu I kpebie isonye na nyochaa, a ga m eso gi guo akwukwo nkowa a ma kowawakwara gi ihe nile ikwesiri ima maka nyochaa. Juo ajuju ma o nwee ihe gbagwojuru gi anya. A gam enye gi otu akwukwo nkowa akwukwo a.

A ga-eme nyocha a na ulo ogwu abuo. Ndi nlekota oria iri abuo na ise ga esonye na ya. Nyochaa bu maka iji mezuo ihe di na akwukwo m na agu.

Ihe kpatara e ji eme nyocha a

Ihe e ji eme nyocha a bu iji muta ka a ga-esi dozie out e si enyere ndi na-aria oria shuga aka iji lekota onwe ha anya nke oma.

Ihe a choro na aka m di ka onye choro isonye na nyocha a

O buru na I choro isonye na nyocha a, I ga-eme ihe ndia:

- *A ga-aju gi ajuju gbasara oru gi. Ajuju agaghi ewe karaia nkeji iri ano na ise. A ga-erekodu aziza gi ka e wee nwee ike icheta ya.*

- *E nwere ike ile gi ebe I na elekota ndi oria.*
- *A ga m eleba kwa anya na akwukwo e ji elekota ma na-akuziri ndi oria*

Ihe nrita di na nyocha a

Ihe mmuta ga esi na nyochaa puta nwerike ikwalite nghota gbasra out a ga-esi na elekota ndi nwere oria shuga. A gaghi akwu gi ugwo maka isonye na nyochaa.

Ihe ufu m nwere ike inweta ma msoro na nyocha a

Ike nwere ike igwu gi, iwe ma o bu ahu mgbakasi nwere ike ime gi. I ji gbochie nkea, oge a ga-ewe wee juo gi ajuju agaghi akari nkeji iri ano na ise. Nke ozo, a ga ano ebe ichoro wee juo gi ajuju. Ike gwu gi, I nwere ike ikwusi, ma bidokwa oge ozo. I nwekwara ike isi na ichoghizi isonye mgbe obula omasiri gi. I gaghi emefu ego obula maka isonye na nyochaa. A ga m ezobe aha gi, ma wepu kwa ihe obula nwere ike ime ka a mata onye ibu.

Isonye na nyocha

I ga-esonye na nyocha a nani ma I choo. O buru na ichoghi, onweghi onye ga-ado gi ado. O bughi iwu na I ga aza ajuju nile ajuru gi. I nwezikwara ike ikwusi mgbe o bula I choro. O buru na isi na ichoghi kwa isonye zi na nyocha nke a, a ga m ewere asisa ndi izara aza ma o buru na ikwughi ka m ghara iwere ya. Ma o buru na isi ka m ghara iwere asissa gi, a gam ahapu ya ma o buru na ikwuru otua otu izuka mgbe izachara ajuju. Ma o buru na ikwughi ya na oge, a gaghi m ewepuzi ya, ma na agaghi m ekwu ihe ikwuru out isiri kwuo ya

Mkpuchi asisa ndi m sara

A ga m ekpuchi asisa gi nile. A ga m eme ihe nile di m n’aka iji mee na ekpuchiri ya. A ga-ewepu aha gi ma o bu ihe obula ga egosi onye ibu dika aha ulu ogwu ebe I na aru na kwa ekwenti gi. A ga edobe asisa gi na Mahadum Alberta I ji mee ka mmadu ozo ghara ihu ya. Nani mu na ndi nkuzi m nwere ike ihu asisa gi

O buru kwanu ma mnwee ajuju

I nwee ajuju, kpom n’ekwe nti nke a [08038752609]

Ndi isi ihe gbasara nyocha na Mahadum Alberta enyego m ikike iji mee nyocha a. I nwee ajuju gbasara ikike di na nyochaa, I nwere ike ikpo ekwe nti a +1780-492-2615. O bughi m nwe ya.

Nkwenye Iso na Nyocha Nkea

A guola m akwukwo a nke kowara ihe di na nyochaa. Onye nyocha kowakwara m ihe nile di na ya. O nyekwara m ohere iju ajuju. O zala ajuju nile mnwere. O buru na mnwee ajuju ozo, o gwakwaram onye m nwere ike ikpo.

E kwenyere m na isonye na nyocha nke a. A ga m ewere kwa otu akwukwo a mgbe m binyechara aka na ya.

Aha m (printed) na Signature m	Oge
Aha(printed) na Signature onye nkowa	Oge

Appendix G: Guide for Verbal Consent

My name is Sandra Iregbu, I am a doctoral student at the University of Alberta, Canada. I am doing a study about how health professionals support patients with diabetes. I am following healthcare professionals around. Could I observe during your consultation with healthcare professionals? It is okay if you do not want me present or if you want me to step out anytime. It will not affect your care here at the clinic. After the observation, I might ask you a few questions to make sure I understand what is going on. You do not have to answer these questions if you do not want to. Later, I will write some notes, but I will not record any information about your identity.

Thank you
Sandra Iregbu

This study has been reviewed and approved by the University of Alberta Research Ethics Board #Pro00081155 and Hospital Ethics committees

Appendix H: Demographic Information Sheet

Code Number

What is your name?

What are your contact details, Phone number/email?

What is your gender?

What is the name of the hospital where you work?

Which profession do you belong to?

What is your highest level of education?

Is your professional experience general or in diabetes care?

How long have you worked as in your profession?

How long have you been working in this diabetes clinic?