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The Perception of Health among Omani Men Diagnosed with Type 2 Diabetes Mellitus

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The Perception of Health among Omani Men Diagnosed with Type 2 Diabetes Mellitus

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by

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ABSTRACT OF THE DISSERTATION

The Perception of Health among Omani Men Diagnosed with Type 2 Diabetes Mellitus

by

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Doctor of Philosophy in Nursing

University of California, Los Angeles, 2020

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Background: Health is considered to be a fundamental human right internationally. Many disciplines including nursing, medicine, psychology and sociology have attempted to define health. However, many definitions, including the historical definition offered by the World Health Organization do not take into consideration understandings of disease at the molecular, individual, and societal levels. Most, if not all, definitions have been derived from organizations or academic perspectives, while few have been developed from the perspective of the public. Aim**:** This study was conducted to explain, describe, analyze and interpret the perceptions of health and illness from the perspective of a sample of Omani men who have T2DM. Methodology: A qualitative thematic analysis was done using Grounded Theory techniques and informed by Symbolic Interactionism. Participants were recruited from a tertiary Polyclinic in one city in Oman and interviewed face-to-face in Arabic. An Arabic demographic questionnaire designed for the study was administered before the interview which was based on a semi-structured interview guide. Audiotapes were transcribed in Arabic and translated to English. Transcripts were checked for accuracy and all identifiers were removed. Then the transcripts were coded and analyzed based on the six steps as described by Braun and Clarke (2006). Data analysis was influenced by Symbolic Interactionism throughout each step of the process.

Results: Four main themes with multiple subthemes were identified. We entitled Theme 1, Perceptions and definitions of health, and it had five subthemes including: Definitions of overall health; impressions of mental health, stress and emotions; health is primarily experienced as physical; health is something you do; and health is understood in relation to illness. Theme 2 was titled Factors that facilitate or impede participants’ T2DM self-management, had five subthemes including: Health is a personal experience (my own), actual and expected social support; the lack of positive cultural / community influences on health; fear as a motivator and as a stressor; and avoiding knowing about illness. Theme 3 was titled, Personal experiences with healthcare systems and it had no subthemes. Theme 4 was named, The dynamics between perceptions of health and self-care actions, and it had 3 subthemes including: Struggling with craving control, rationalization for less health maintenance (stress at work and no time to exercise), and culture influenced health beliefs and attitudes about health maintenance.

Conclusions: This study was limited to participants with uncontrolled diabetes. Despite this, they all verbalized appreciation of health and its importance to their life. Health is a multifaceted concept that needs to be looked at from different perspectives; it is not solely a responsibility of individuals or healthcare settings independently. The involvement of individuals, clinics, as well as government organizations, sites of teaching, and social settings could help strengthen the health of communities while reducing the burden of chronic illness for people, young and old.

The dissertation of Yousuf Mohamed Habib Al-Hasani is approved.

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2020

DEDICATION

To Hamida (my grandmother) and Said (my grandfather) who both died during the period of my study,

To Fatma and Mohamed (my parents) and to the promise that I gave you 25 years ago,

To Zakiya (my wife) who shared the journey and endured the challenges of life with me,

To Oman, Mezoon and Majan who had patience and understanding of what I was doing,

To all the people that I love and care for and to my friends who encouraged and prayed for me,

This dissertation is dedicated to you.

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CHAPTER ONE

INTRODUCTION

Background and Context

Health is considered a fundamental human right (Ghebreyesus, 2017). An increasing challenge across the globe facing healthcare systems today, more than ever, is the burden and cost healthcare organizations face in relation to the rise of chronic conditions. Chronic diseases evolve as well as progress over a long period of time and thus require knowledge and skills of self-management and self-care. The pathophysiology, complications and effects of chronic disease on activities of daily living differs from one person to another; therefore, patients' participation and engagement in their own care has become a vital aspect of ensuring the integration of their voice and views in their care. The proposed study focuses on Omani men with Type 2 Diabetes Mellitus (T2DM), as a 174% increase has been projected for 2050 compared to estimates for 2015 (Al-Lawati et al, 2015). Omani men were chosen because in Oman, males have higher rates of pre-diabetes than women. In addition, the interviewer (PI) is male; cultural practices in Oman restrict men from interviewing and collecting qualitative data with/from female participants. Through the chapters of the proposed study, Diabetes Mellitus (DM) refers to both type 1 and type 2 diabetes while T2DM refers only to Type 2 Diabetes Mellitus.

Overview of the Problem

Definitions of Health

One of the most important views of patients relates to their concept of health. An understanding of health is the basis to all healthcare providers. As early as 1946, the World Health Organization (WHO) defined health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 2006, p1). However, as noted by the editorial staff of *The Lancet* (2009), the WHO definition does not take into consideration the era marked by new understanding of disease at the molecular, individual, and societal levels. In addition, the WHO definition of health is a product of a representative consensus of countries from more than 60 years ago and not based on extensive scientific data from today in the 21st century.

Social Influences on Meaning of Health

Nanjunda (2014) has pointed out that health and illness are common concepts in all societies. Napier and colleagues (2014) argued that poor health outcomes for all members of society, lack in health system efficiency, as well as financial, intellectual and humanitarian costs will result from the failure to recognize the intersection of culture, context, and other structural and societal factors related to health. Each community organizes itself through experience and through various elements to develop local approaches to deal with issues related to health and illnesses. Gaining a perspective on the social interpretations of health and illness holds promise for having a better understanding of people's concepts about the onset of various illnesses and treatments in cross-cultural contexts (Nanjunda, 2014). Singh and colleagues (2008) stressed that the health of any society is intimately related to the values of that society, the system of that society, as well as the philosophical, political, and ecological organizations within that society. Many renowned scholars in anthropology and medicine including Airhihenbuwa (1995), Helman (1984), and the team of Kleinman and Good (1985) emphasized that to ensure that appropriate, high quality care is being provided to a particular society, there is a need to incorporate local belief systems and cultural ideas into the health care systems. Integrating culturally-relevant perspectives derived from anthropological studies into health systems has the potential to improve such systems (Napier et al., 2014; Kral et al., 2010).

Local systems will utilize different symbols, practices, interactions, and institutions and need to be understood in context (Nanjunda, 2014). Additionally, attention is needed to focus on the patient's point of view, in order to generate suggestions to improve the care of patients who have uncontrolled DM (as indicated by high level of A1c) in Oman.

Oman's Social and Health Context

The Sultanate of Oman, resting at the southeastern corner of the Arabian Peninsula, borders the United Arab Emirates (UAE), Saudi Arabia and Yemen. Oman has a small population, at 4 million, but the people are scattered over great distances. The terrain in Oman can be difficult to maneuver, with mountainous areas as well as barren valleys. Most of Oman's population is concentrated in the North of the country, in and around the Capital. Approximately 32% of Oman's population lives in the Muscat governance, while 25% lives in the neighboring Al Batinah district. Oman also has a large expatriate population living in the country; about 47% of the current population (1,880,000 people) are expatriates or non-nationals living in Oman (Sultanate of Oman, 2014).

In Oman, the role of faith (Islam), traditions, family and community are large components of people's lives; however, social shifts are occurring within the country (Miller, 2014). Omani society was somewhat impacted during the late 1980s and 1990's by the increased access to higher education, job opportunities in the capital, and international influences (El-Haddad, 2003). Before the 1990's in Oman, extended families had stronger emotional bonds and family members experienced economic interdependency; but recently, there has been a shift away from large extended family structure towards more nuclear family structures (Jones &

Ridout, 2012). Historically, the level of wellness of people in Oman was based on that of the entire extended family rather than the individual. Despite the recent shift to a nuclear family structure, the health of the extended family remains an important aspect of life in Oman (Hodges, 2015).

In Oman today, there is also increased access to information and outside socio-cultural influences due to the Internet, especially with younger generations. Some attempts have been made by older generations to keep pace with the influx of knowledge consumed by younger Omanis (Khan et al., 2017). More access to education and greater online accessibility to information, along with advancements in health care and other social changes, has caused the life expectancy of Omanis to increase to 76.6 years from 65.9 over the previous 24 years (WHO, 2014). More recently in 2020, according to the National Centre for Statistics and Information (NCSI), the average life expectancy rate of the total population in Oman stood at 78.2 years (NCSI, 2020). All health services and medications are completely free for all Omanis (WHO, 2008).

Despite the implementation of government social programs to address access to education, healthcare, combating low literacy, childhood diseases, infant mortality and gender inequality, it appears that many Omanis lack health knowledge (health literacy) (Al-Barwani & Albeely, 2007). In Oman, a knowledge gap was identified in areas related to people's experiences of self-care and self-medication, and the utilization of available healthcare services (Al-Juma, 2017). Indeed, there are individuals who are readmitted to hospitals with preventable complications from illnesses due to a lack of information on how to care for their own health (Peter et al., 2015). Furthermore, from clinical practice, empirically there are individuals who do not pursue medical treatment until their symptoms have worsened. It is only after exhausting all other options, including local healers, and then they will come to the hospital. This prevents individuals from receiving health care at an early stage in their illness (Al-Sinawi & Al-Adawi, 2006).

Diabetes mellitus (DM)

In many countries around the world, diabetes mellitus (DM) is considered to be one of the leading causes for morbidity and mortality affecting all races and ethnicities (World Health Organization [WHO], 2009). According to the International Diabetes Federation (IDF), one person dies from complications caused by diabetes every seven seconds (IDF, 2017). The global prevalence of DM doubled from 1980 to 2014, mirroring a rise in overweight and obesity (WHO, 2016). According to WHO, the prevalence of DM (adults 18 + years old) increased from 4.7% in 1980 to 8.5% in 2014, affecting 422 million worldwide (WHO, 2016). Global health expenditures related to diabetes were 12% of total expenditures ($ 673 billion) in 2014 (IDF, 2015).

Experts from the IDF (2014) estimated that DM is set to rise and affect 592 million people worldwide within the next 20 years. Further, 316 million people are reported to have impaired glucose tolerance and are at high risk for DM, with projections indicating that over one billion people will be living with or at high risk of DM in the year 2035 (IDF, 2014). The latest data from IDF has revealed that five of the top 10 countries with the highest prevalence of DM in the world are from the Middle East, including Bahrain, Qatar, UAE, Kuwait, and Saudi Arabia (IDF, 2014). A recent study also identified that Middle Eastern countries have the highest prevalence of T2DM globally. The highest prevalence of T2DM was identified among men in Bahrain, Saudi Arabia, UAE, and Kuwait (Meo et al., 2019).

Overview of DM Care in Oman

In Oman, there is demographic transition of the population in which there is a shift from patterns of high fertility and mortality to one of low rate at various geographical scales due to urbanization, with rising rates of DM and associated risk factors (Al-Moosa et al., 2006). In 2002, it was noted that the prevalence of DM and rates of DM-related complications in Oman were on the rise (Al-Lawati, 2002). With the growing number of people suffering from DM, specialization of physicians and nurses able to work with diabetic patients was also increasing by the year 2000 (Ministry of Health, 2000). Prior to that, many specialized diabetic clinics were launched country-wide dating back to the 1990s. Despite the fact that health care services were provided at no cost to all Omanis during this time and these services were mostly accessible through referral systems, many patients still remained non-adherent to DM treatment (medication, dietary/exercise and care-seeking) based on HbA1C levels. For example, in a study conducted in Oman, Venugopal and colleagues (2008) found that 77.2% (n= 7442) of their participants had poor glycemic control (HbA1C > 7%). Investigators of another Omani study found only 2.4% of participants (n= 241) met the international treatment goal of HbA1C < 7% (Al-Mandhari et al., 2009).

DM Prevalence and Burden in Oman

In the early 1990's in Oman, 9% of all adult hospital admissions, 12% of all hospital bed occupancy, and 20 -30% of all outpatient visits in regional hospitals were associated with DM (Asfour, 1991). A national survey in Oman indicated that between 10.4% and 21.1% of adults (men and women) suffer from DM and its complications (Al-Lawati et al., 2015); these rates indicate an increase of 6% in 2018 according to the NCSI. In terms of DM prevalence, Oman is ranked eighth among the top 10 countries of the Middle-East and North Africa region (Majeed et al., 2014). In 2010, DM was the fourth leading cause of premature mortality in the country and the third leading cause of disability-adjusted life years lost (Global Burden of Disease 2010). The IDF (2013) estimates a 124% rise in the number of diabetics in Oman between 2012 and 2030.

In Oman, the distribution of chronic diseases and their related risk factors are similar to that of industrialized nations. As of 2020, the burden of non-communicable diseases (NCDs) accounts for 72% of all deaths in Oman (WHO, 2020). According to the IDF (2013), a survey in Oman showed that, NCDs constituted about 75% of the disease burden, wherein 12% of Oman's population of 4 million people suffered with DM. It also showed that 1,214 deaths per year were documented to be associated with DM and its complications in Oman. According to a recent report issued by the Ministry of Health (2020), 15% of the population in Oman is suffering from diabetes mellitus. In 2017, the IDF reported that healthcare expenditures for people with diabetes are on average two times higher than people without diabetes. Furthermore, the mean health expenditure for care of Omani patients with DM was $863 per person per year. This is noteworthy because the gross domestic product (GDP) per capita in Oman was estimated to be $24,700 (IDF, 2013). Recently, according to the NCSI (2020) health bulletin, the percentage of government spending on the health sector in the Sultanate by the end of 2019 reached 5.7% of the annual budget, or RO 843.5 million Omani Riyals (around 2.193 billion $).

DM Self-Management in Oman

The level of self-management of patients with DM appears to be less than optimal in Oman. For example, a descriptive study of 266 Omani patients with type-2 DM to assess the level of DM self-management (DSM) found that most participants had low levels of DSM, with male participants more likely to report performing physical exercise than females, whereas females were better at taking medications as prescribed (Alrahbi, 2013). The author adopted

Sousa and colleagues' (2009) definition and measurement of DSM that included a set of activities that patients with T2DM performed to achieve diabetes control. These activities included regulating diet, engaging in exercise, taking medication, self-monitoring of blood glucose (SMBG), problem solving, and risk reduction (Sousa et al., 2009).

Other studies carried out in Oman indicated that there was a lack of knowledge and awareness about DM and its complications among the general Omani population (Ministry of Health, 2000; Al-Moosa et al., 2006). Despite efforts to teach patients to use DSM to control DM and its associated complications, the meager available research from Oman suggests that there are many patients who are non-adherent to the prescribed treatment plan, which is likely to lead to complications. In a recent pilot study conducted by Al-Noumani and colleagues (2017) that examined the relationship between Omani patients' beliefs and their antihypertensive medication adherence, concluded that health beliefs regarding medication and perceived self-efficacy were significantly associated with medication adherence.

Adherence to DM Medication

According to Osterberg and Blaschke (2005), medication adherence is described as the "extent to which patients take medications as prescribed by their healthcare providers" (p. 487). They stated that there was no consensual standard for what constitutes adequate adherence in clinical trial research. For some research on chronic illnesses, data on adherence have been reported as dichotomous variables (adherence vs. non-adherence), but in reality, adherence can vary along a continuum from 0 to 100 percent (Osterberg & Blaschke, 2005). It is possible that low medication adherence leads to poor therapeutic outcomes, imposing financial burdens on the patients and healthcare system and resulting in poorer health, worsening disease with complications, or death.

Many diabetic patients suffering from Type 1 and Type 2 DM either take oral medication or inject insulin to control their blood glucose levels. Rubin (2005) did a literature review of 55 articles on various patient groups with Type 2 DM (T2DM) from various countries and found that the adherence rates ranged from 65–85% for oral medications and 60–80% for insulin. In another literature review, Delamater (2006) concluded that, in general, there were many potential factors that were related to medication adherence of patients in the management of DM. These factors included demographics, psychological and social status, other comorbidity and treatment-related factors, and the type of healthcare provider and medical system.

In Oman and neighboring countries, several studies were done that investigated medication adherence among T2DM patients (Al-Adsani et al., 2009; Al-Maskari et al., 2013; Jimmy et al., 2014; Kheir et al., 2011). Jimmy and colleagues (2014) concluded that 36.4% of the participants in Oman were non-adherent to their medication regimen due to forgetfulness despite understanding the medication regime (80%), while 10% of the T2DM participants from the UAE self-reported non-adherence due to poor knowledge (Al-Maskari et al., 2013). Additionally, Kheir and colleagues (2011) found that the participants with T2DM in Qatar reported inappropriate use of medications in relation to meals and lack of appropriate modification of dosage when necessary. Al-Adsani's research team (2009) reported poor level of diabetes and medication knowledge among Kuwaiti adults with T2DM. Together, the published studies described here indicate that there is a lack of knowledge and practice related to medication adherence in T2DM participants from Oman and various other Middle Eastern countries. Despite efforts made to improve the situation, the diabetic pandemic is still growing.

Introduction to the topic

In healthcare systems, healthcare professionals typically assume that patients will utilize the healthcare information provided to them (Graham & Brookey, 2008) because they assume that health is important and the management of health is personal (Minkler, 1999). Unfortunately, that assumption may be mistaken. The utilization of health information and the interaction between a patient and a health care professional during health teaching sessions may be received and processed differently by different people, which can lead to a different commitment by the patient to the plan than the health care provider expected. Thus, a deeper, more meaningful understanding is needed of patients' assumptions about what health and illness are and how they are perceived by the individual.

A Constructivist Grounded Theory (CGT) approach to research on this topic is appropriate to gain a better understanding of diabetic patients' understanding of health (including the lack of health) and illness, because CGT allows for participants to reflect on their personal experiences; this is embedded in the methodological approach to data collection in CGT. Understanding participants' perspectives holds promise for enhancing health care practitioners' abilities to work more effectively and more efficiently with patients and societies.

Symbolic Interactionism (SI) (Blumer, 1986; Denzin, 2008) is a useful philosophical theory that can aid the analysis of patients' perceptions of health and illness. According to Charon (2007), SI holds that any group of people who either live together or have a common experience could be generally participating in a "local culture". In other words, the 'local culture' is a shared perspective among people in a family living in a particular environment, including people who are DM patients. As a consequence, variables like the level of income, education, family size, and community support are important components of the reality of daily social life (Charon, 2007). Concepts from SI relate to how people make meaning from interactions with other people as well as interactions they have with themselves as part of the ongoing inner dialogue people engage in throughout any day in their life (Blumer, 1969). Meaning also is derived from interaction among people in groups (i.e., society) that form within local cultures. The proposed study of the views of Omani men with DM about perception of health will be undertaken with the assumption that their views are meaningful through interactions with self (through thinking) and others in small and large groups in a local context and could affect the adherence to medication and treatment in general.

Perception of Health

Perceptions of health have been investigated across different geographical, ethnic and cultural backgrounds. Many researchers have tried to explore and assess health perceptions in different sociocultural populations such as Mexican adults (DuongTran & Garcia, 2009), Latino adolescents in the United States (Garcia, et al., 2007), indigenous peoples such as the Plains Cree in the United States (Graham, & Leeseberg, 2010), Appalachian adults (Griffith et al., 2011), homeless veterans (Nyamathi et al., 2004), African American men (Ravenell, Johnson, & Whitaker, 2006), and older Arabian Gulf Arabs (Ypinazar & Margolis, 2006). Researchers who studied these populations have used various qualitative and quantitative methodologies to elicit information regarding participants' perceptions of health.

Statement of the Problem

Despite the importance of assessing patients' perceptions of health, illness, or health practices, however, many researchers fail to investigate this from the point of view of the patient. Most of the authors of the studies listed above used a standard Likert-scale to assess participants' ratings of their health, but this does not mean that the participants' perceptions of the meaning of health or illness were grasped by the researcher. Although, ratings of health using a Likert scale has been considered an acceptable and valid approach to measurement by some researchers, it does not include the patient's point of view nor does it take into account the meaning of health from the perspective of the patient. Use of a Likert scale led some authors to surprising results, such as the finding that patients claimed they felt healthy despite the fact that they had a chronic illness (Griffith et al., 2011). The subtle meanings embedded within and that underpin the meaning of such quantitative findings remain unknown but need to be understood in order to make progress on helping patients with T2DM engage in appropriate management of their health and symptoms.

Therefore, the purpose of the proposed study was to explore and describe the perceptions of health and illness from the perspective of Omani adult men with T2DM. A thematic analysis was done using the Grounded Theory techniques informed by constructivism, also known as Constructivist Grounded Theory (CGT) (Charmaz, 2014). In keeping with constructivism, the collaboration or partnership between the researcher and the participant in the research process was recognized at each stage of the process. This study provided participants (note: we referred to participants as patients here as this is the term used in Oman) with opportunities to voice their reflections on the meaning of health and illness derived from their own experiences.

Rationale for Use of Qualitative Research

A qualitative thematic analysis using CGT techniques was done with a sample of Omani adult men (20 years and above) who were T2DM patients to gain insight into their perceptions of health and illness. Due to the high rate of T2DM among men in Oman as it was reported by Al-Lawati and colleagues (2002) reported that 7.1% of males and 5.1% of females had pre-diabetes, a focus on men was warranted. In addition, in a country with a conservative social structure like that in Oman, it is socially questionable for a male researcher to privately interview female participants. Therefore, women were not the focus of this study; only men were.

The exploratory nature of this study required a research methodology that could maximally capture the participants’ lived experiences and reflections on those experiences. SI (Blumer, 1986; Charon, 2007) guided the Principle Investigator (PI) with the proposed study's emphasis on how Omani men (who are DM patients) defined and interacted with other people to make meaning related to health and illness. SI guidance was also employed to help in understanding the life and situation of the sample of DM patients, including interactions in their local daily lives in Oman and interpretations of themselves in relation to others.

This study can be considered a starting point for ongoing research focused on this complicated human phenomenon, as the concept of health and its practices differs between societies and even between individuals. The study results provide groundwork for subsequent studies in Oman. Over time and with additional research, the primary PI aims to develop a valid and reliable tool to measure the perception of health and illness for adult men in Oman. This foundational study is anticipated to help health care professionals better understand patients’ views which will lead to more culturally-sensitive care as well as a more comprehensive approach to care, in which patients’ views and interests are respected and considered.

Rationale and Significance of Research

Rationale of the Study

For health care providers to skillfully deliver culturally-sensitive care where non-Omani providers in Oman care for Omani patients, standard care DM patients, like all other patients, require a thorough and comprehensive physical and mental health assessment. Many healthcare providers in Oman are non-Omani which may contribute to language barriers between them and the patients; consequently, the care provided might not be as culturally-sensitive as patients might expect. From a clinical perspective, patients' previous experiences with DM, how they reacted to these experiences, and what health means for them is an important part of the assessment (Matza et al., 2004), but it is rarely considered when planning a patient's care in Oman.

Despite the best efforts of health care professionals to promote and emphasize the importance of medication adherence and the standardization of patients' health teaching, the treatment needs of non-adherent diabetic patients remain a daily challenge for various health services organizations (Hugtenburg, 2013). This is particularly dangerous for patients who have neglected their health so much that they reach a stage where there is no ability to reverse the damage due to uncontrolled diabetes (Boucek, 2006). To prevent this alarming health care situation from developing, a deeper understanding of Omani patients' perceptions about the meaning of health and illness including DM, and their perceptions of the meaning of DM management is needed so providers can effectively understand their patients and alter their communication with and education of people with DM.

Significance of the Study

An understanding of what patients think and what health means to them could lead to a more effective way to enhance interactions with patients to motivate them to make and keep a commitment to an agreed plan of treatment for T2DM. Health has different meanings to individuals (Sartorius, 2006). However, depending on how health is defined by a person, these meanings may dictate how individuals act and react to health care needs and symptoms of illness, and how they seek to maintain or restore health. A greater understanding about how patients perceive health and illness, may equip nurses and other health care providers to create stronger, more meaningful, and more appropriate management plans with their patients. This may increase the likelihood for improved treatment adherence, reduced readmissions, and/or reduced illness complications for patients.

There are various potential benefits that may occur as a result of this study, which was done within the Omani health care system. The production of data in this study was done in partnership with patients using rigorous scientific methods. This involved T2DM patients and may lead to future advances in shared decision making within health care in Oman, including an increase in active involvement of both patients and providers.

The results and recommendations from this study provided pertinent information that may be employed in the implementation of rehabilitation programs and educational initiatives for men with type 2 diabetes in Oman. The anticipated findings and recommendations from Omani men with T2DM have the potential to impact the standard of care in management of T2DM in Omani men and may help in the improvement of educational tools utilized by healthcare providers that might enhance compliance to treatment among diabetic Omani men and may facilitate the design of more culturally-sensitive, individualized interventions for Omani male patients with T2DM. Findings are likely to assist in enhancing the quality of DM health services. Furthermore, insight from the study may raise the awareness of other patients with chronic illnesses about their perceptions of health and illness.

The study may add to the current literature related to Omani patients suffering from T2DM. It has the possibility of enhancing our understanding of how health and illness as concepts are shaped. Understanding this may lead to better ways of dealing with patients who are non-adherent to medication as prescribed and patients who are at risk for readmission to inpatient services in Oman. Additionally, results of the study are likely to contribute to the establishment of “best practices” to be used by health care professionals working with Omanis in the management of T2DM.

Specific Aims

In a sample of Omani adult men diagnosed with T2DM but are non-adherent to treatment recommendations based on HbA1C levels (above 6.5% indicates poor blood sugar control for the last 3 months), the study aims were:

1. To explore and describe how participants perceived and defined health and illness based on their experiences;
2. To explore and describe the factors that facilitated or impeded participants’ T2DM self-management;
3. To explore and describe factors that facilitated or impeded participants in accessing healthcare services;
4. To explore and describe the dynamics between participants’ perceptions of health and their health maintenance;
5. To identify and develop themes, using grounded theory techniques, of the experiences, processes, and perspectives of participants’ regarding health maintenance.

Significance to Nursing Knowledge, Practice and Research

The overall goal of nursing is to work with patients to achieve the highest level of health possible. The groundwork of identifying how health is perceived by participants will provide insight that may aid in creating a nursing-oriented framework for developing health education interventions tailored to the needs of Omani men with T2DM. This holds promise for enabling future patients to reflect upon their health behaviors, their emotions and feelings about their illness and how they would manage it in the future.

This project adds to the nursing knowledge of how Omani T2DM patients perceive health and illness from their sociocultural perspective living in Oman. A future research goal is to devise a tool to measure the perception of health among Omani diabetic patients.

Organization of the Study

Chapter one of this proposal includes the introduction, statement of the research problem, and significance of the study. Chapter two contained a review of pertinent literature and research. Theoretical and philosophical underpinnings that influence the methodological approach in this study including pragmatism and SI was discussed in Chapter three. The methodology and procedures that used to gather data for the study are presented in Chapter four. Results of the study are presented in Chapter five and they are discussed in Chapter six.

CHAPTER TWO
LITERATURE REVIEW

Introduction

This chapter provides a review of relevant research studies that focused on the perception of health in general as well as in relation to chronic conditions; specifically perceptions of health among patients with type 2 diabetes mellitus (T2DM). The review describes the literature pertaining to the concept of health, definition of health, and perception of health. The review is relevant for nurses involved in clinical and administrative roles in the field of healthcare. A table of evidence was created to organize and facilitate the review.

Using a focused approach, the search for peer reviewed papers was accomplished by using the key word search strategy involving electronic databases such as Google Scholar, EBSCO host, ERIC, ProQuest, UMI ProQuest dissertation. Some of the key words used for this search included perceptions of health, perception of health among diabetic patients, perception of health and cultural influences, and adherence to treatment among diabetic patients. The search included papers, both United States-based and International, published between the years 2003 to 2019.

Results

During the search, using the key word “perception of health”, there were 90,803 articles. When using the exact key word “perception-of-health”, the results were 1,141. Of these, 682 were published in the last 10 years. From those articles, 641 were full text articles from which only 34 were related to diabetes. Articles were excluded if they assessed perception among health professionals or the perception of health risks but not the perception of health. Other articles were excluded due to methodological/ research design problems such as the improper use of methods or issues mentioned in study limitation. These exclusions reduced the number of articles to 25. However, using reference lists to search for other related articles, more articles were added. Also, during the process of pilot testing the interview questions on the SSIG to check for comprehensiveness and to determine the best order of questions, new issues were raised and 20 more articles were found and included in the literature review. Finally, a total of 45 articles were selected that were directly related to the aims and methodology of the proposed study.

Review of Studies

Background of the Concept of Health

Empirically, the concept of health has developed differently in different societies. Many concepts in the nursing profession have undefined similarities and are used loosely (Meleis, 2012). However, relationships, similarities and differences between nursing concepts are clarified through concept analysis, which enhances the development of theory and nursing knowledge (Meleis, 2012). Some of the content presented in this chapter involved findings from concept analyses.

Stronks and colleagues (2018) conducted a study to explore how people in different socioeconomic strata conceptualize health using the methodology of concept mapping. The sample consisted of lay people from Utrecht city, the Netherlands and was clustered to three groups that differed in educational level. The authors selected concept mapping because they believed that the concept of health has an evaluative dimension, informed by norms and values and involving different perspectives. The authors analyzed how different socioeconomic groups formulated their own answers regarding: what does health mean to you?

The finding of the study suggested that people in lower socioeconomic groups were more likely to show a conceptualization of health in terms of the positive aspect of absence of health threats, the quality of own body/mind, the value of functional notions of health and an accepting attitude towards life. The authors indicated that policy makers can use the findings of the study to ensure that policies reflect the conceptualization of health.

It is essential to recognize concepts and their associations and differences in order to effectively facilitate communication especially between health care providers and health care receivers. Conflict between the perceptions of nurses and patients can lead to miscommunication and unwelcomed effects or lesser amounts of desired results. McDonald (2011) indicated that nurses need to understand patients' perceptions to efficiently meet patients' needs in health care systems. Perception of health plays a major common platform to establish agreement and commitment toward the treatment plan.

Significance of the Concept of Health in Nursing

A solid framework for understanding the meaning of health and how it is actually perceived by people, especially patients, has the potential to increase the understanding of the concept of health because it comes from the patients' perspectives. This may create easier and more fruitful professional communication between nurses, patients and their families. It also has the potential to transform nursing practice and education based on a new paradigm in places like Oman, and improves the overall care nurses provide and the satisfaction of patients about the care they receive.

Defining Health

Many disciplines including nursing, medicine, psychology, sociology and anthropology have attempted to define health and what it entails. There seems to be an agreement on the importance of health, but there is no consistency of what health is and how it is defined. This section reports some of the attempts to define health and how it has been measured.

In the continuum of health and illness, nurses and health care providers tend to refer to the concept of illness in order to identify the concept of health. If illness is considered to be a weakness, then health is proposed as strength. In this view, the attention of health care providers should be directed toward strengthening health while dealing with illnesses (weaknesses).

For example, to understand perceptions of health and health influences among 71 African-American men, eight focus groups were conducted (Ravenell, Johnson, & Whitaker, 2006). Among these participants, definitions of health went beyond the conventional "absence of disease" description and encompassed characteristics of spiritual, economic, physical, mental and emotional aspects. Having a job and providing for one's family were considered to be fulfilling social roles of people who are healthy. Stress was perceived as a negative influence on health, while positive influences included feeling valued by relatives and supportive social networks.

This study shows the complexity of the perception of health and its many variables that needed to be understood, not merely by asking a simple question, as many people take health for granted. Additionally, other aspects that affect health and illness should be studied and measured in future-related research to allow for a more comprehensive understanding of the concept of health.

The Perception of Health

Perception of Health among Patients with Chronic Illness

The concept of health in chronic illnesses might have been seen, measured and conceptualized differently by different researchers in which there are different findings from the literature. To examine and evaluate health perceptions in rural Appalachia, Griffith and colleagues (2011) conducted a survey to explore self-rated health among 1,576 adults, aged 19-92 years. A ten-item questionnaire was used to obtain information on perception of health. The items included blood pressure, body mass index (BMI), smoking status, cholesterol level, smoking status, fast food consumption, soda consumption, height, weight and self-rated health status. Self-rated health status was comprised of one item; reflecting the participants rating of his/her health as being excellent, good, fair or poor. The authors considered a rating of excellent or good to be "healthy". In this study, however, contradictions arose. That is, between 57% and 66% of participants who perceived themselves to be healthy, in fact, had at least two disease conditions or reported poor health behaviors.

Not all studies corroborated this trend. For example, by using random sampling techniques, 1,000 adult participants residing in Greece were recruited to explore the relationships between self-rated health (SRH) and socio-demographic and disease-related elements (Alexopoulos & Geitona, 2009). Telephone interviews were conducted to collect data using a five-point likert scale, the Self Rated Health (SRH) scale, to rank the participants' perception of health. The five-item scale included ratings of very good, good, moderate, poor and very poor. The question asked was: How do you rate your general state of health? Strong associations of poor SRH were identified with gender (females), age (elders), chronic disease and insurance coverage (individuals insured in agricultural population and private sector). The authors found the existence of strong associations of poor SRH with female gender, elder age; the type of company of insurance coverage and chronic diseases were identified. Respondents receiving chronic illness treatment reported the highest level of poor SRH.

The above two studies showed that different type of methodologies might produce contradicting results as in the first study, participants reported being healthy while suffering from an illness or poor health behavior. In the second study, the participants who were suffering from chronic illness reported having poor SRH. Self-reporting of a complex concept like health might be affected by social desirability bias and cultural differences.

In a study conducted to investigate the concept of control on the perception of health, Siennicka and colleagues (2016) investigated personal beliefs regarding control over patients' own health and the subjective sense of self-efficacy in patients with systolic heart failure. These investigators recruited a total of 758 patients in Poland with systolic heart failure (HF) (age was 64 ± 11 years, 79%, were men, 40% were class III–IV according to New York Heart Association, and 61% were ischemic) in a prospective Polish multicenter Caps-Lock-HF study. They used three different scales including the Multidimensional Health Locus of Control (Wallston, 1978), the Generalized Self Efficacy scale (Schwarzer & Jerusalem, 1995), and the Beck Depression Inventory (BDI) (Beck et al., 1996).

Results showed that external and internal control were perceived by the majority of the sample to be high (77% and 63%, respectively); meanwhile, self-efficacy of own abilities was consistent across the whole spectrum of the HF cohort; self-efficacy was unrelated to HF severity, HF duration, and the presence of co-morbidities. The major finding of the study revealed that the stronger the perception of internal health control, the higher the self-efficacy ($p < 0.05$); both features were related to less pronounced depressive symptoms ($p < 0.05$). These relationships indicated that patients with HF recognized the role of others (i.e. healthcare providers) as an external control of health in the process of the management of HF.

Additionally Ukkola and colleagues (2011) investigated the effect of a gluten-free diet on self-perceived health and well-being in a prospective study conducted in Finland of 698 adults newly diagnosed with celiac disease. Patients were followed for 1 year of treatment and an additional 110 healthy subjects served as controls. Three groups were created; namely a classic symptoms group, one group with extra-intestinal symptoms, and a screen-detected group.

The three groups were divided according to the causes leading to the diagnosis of celiac disease. The first group of participants was experiencing classic symptoms comprising any type of gastrointestinal symptoms or symptoms or signs of malabsorption. The second group comprised of participants with extraintestinal symptoms and the third group comprised of cases detected by screening of at-risk groups. Quality of life was evaluated using the Psychological general well-being (PGWB) questionnaire (Dupuy Harold, 1971), along with questions that assessed health and well-being. The questionnaire consisted of questions about socio-demographic conditions, clinical features at diagnosis, the impact of the diagnosis of celiac disease and the dietary treatment on self-perceived health and well-being. Self-estimated health status was assessed by asking the patients to rate their health on a 4-point Likert scale as follows: excellent, good, fair, poor. The researchers determined that at the time the participants were diagnosed with celiac disease, self-perceived health and well-being were poor among all 3 groups (10%, 12% and 16% for each group) compared to 37%, 55%, and 48%, respectively after 1 year of gluten free diet. The authors concluded that most patients benefited from a gluten free diet in that it improved their disease condition, which in turn improved self-perceived health and well-being.

Social Influence on Meaning of Health

Many researchers used quantitative approaches to measure the perception of health in different settings and with different populations (Pavlovic et al, 2010; Nyamathi et al, 2004; Brandon, 2010; Kaleta et al, 2009; Schneider et al, 2004). In Croatia, Pavlovic and associates (2010) examined perceptions of health and various social-economical characteristics of 396 older persons using a 36 item short form, the patient-reported survey of patient's health (SF-36) (Standard Croatian version) (Pavlovic et al, 2010)). The SF-36 is considered to be a measure of health status and consists of eight subscaled scores which are the weighted sums of the questions in each section. Each scale is directly transformed into a 0-100 scale on the assumption that each question carries equal weight. The eight subscales included vitality, physical functioning, bodily pain, general health perceptions, physical role functioning, emotional role functioning, social role functioning and mental health.

Regression analysis indicated self-perception explained 12% of the variance in perception of physical health (12%). Additionally, age ($\beta = 0.02$), education ($\beta = 0.13$), and region of living ($\beta = 0.24$) were also statistically significant predictors of health as measured by standardized partial regression coefficients. There were no significant relationships between other socio-economic characteristics and the perception of physical health scale.

In another study that examined the economic status of participants, Nyamathi and colleagues (2004) studied 331 veteran and non-veteran homeless adults between the ages of 18 and 55 years in California. In this study, several instruments were incorporated to examine demographic, personal, situational and behavioral factors. The perception of health status was assessed by a single item question, rating the respondents' answers on a 5 point Likert scale ranging from excellent to poor. The authors found that significantly fewer homeless veterans perceived their health as fair/poor (8%) compared to non-veteran homeless men (19%). The study also reported that the veterans who accessed the VA health care system had more complex health problems and were less economically stable compared to veterans who did not use the VA health care system. This study was one of those studies that used Likert scale to measure the perception of health.

Social and economic circumstances have an influence on health and on health practices. Some people might not prioritize health as the top of their needs due to financial constrains or knowledge deficit. The complexity of the concept of health suggests that researchers may want to include more full-scale instruments that include in-depth open-ended questions rather than being satisfied with a one-item Likert-scale statement.

Health-Related Stigma and Illness Communication

One important psychological factor that is noticed in persons suffering from chronic illnesses is health-related stigma, which sometimes prevents sufferers from seeking treatment (Idemudia et al, 2018) and in turn, represents a psychological barrier toward healthcare accessibility. Stigma in health facilities undermines diagnosis, treatment, and successful health outcomes. Addressing stigma is fundamental to delivering quality healthcare and achieving optimal health (Liu et al, 2017).

Stigma is a well-documented barrier to health-seeking behavior, engagement in care, and adherence to treatment across a range of health conditions globally (Stangl et al, 2019). Stigmatization occurs when a person receives a punitive response when he differs negatively from the culturally-accepted standard. Stigma is felt when a person believes others to have responded unfairly due to their own personal characteristics (Link et al, 2006). There are two mechanisms via which stigma could be perceived: instrumental and symbolic stigma (Darlington & Hutson 2017; Nyblade et al. 2018). Instrumental stigma occurs when a perceived threat to an individual's well-being brings about a negative attitude towards an individual (Perloff 2001). When ill, people avoid or are hesitant to be associated with a person considered ill. On the other hand, symbolic stigma that refers to moral judgement that causes discrimination. It is the use of the disease to express attitudes toward the groups associated with it and the behaviors that transmit it (Herek, 1999).

Liu and colleagues (2017) sent an online survey to 12,000 U.S. patients with either type 1 or type 2 diabetes and studied diabetes stigma and its associated psychosocial impact. The results showed that diabetes comes with its own stigma as reported by participants (type 1, 76%, and type 2, 52%). The study results also reported a higher rate of stigma in parents of children with type 1 diabetes (83%) as compared with people with type 2 diabetes who did not use insulin (49%). The authors concluded that those who are suffering more from challenges of the illness; namely higher BMI, higher HbA1C, and poorer self-reported blood glucose control were those who had higher rates of stigma; suggesting that those who need the most help were also the most affected by stigma.

In 2015, Sundelin and colleagues conducted a study to see how people perceive another person to be less healthy by observing their walking speed affected by lipopolysaccharide (LPS)-induced systemic inflammation. The study was based on findings of studies suggesting the ability of animals and humans to detect distinctive odor signals of individuals with activated innate immune responses. Forty-three subjects from Sweden watched films of persons who were experiencing experimental immune activation inducing systemic inflammation by using LPS injections, and rated the walking individuals in the films with respect to health, tiredness, and sadness.

Findings revealed that participants perceived people who walked more slowly (due to having had LPS injections) as less healthy and more tired as compared to people injected with placebo. The authors also found that there were strong associations between walking speed and the appearance of health, tiredness, and sadness. The results support the idea that human beings, through observing a walking gait, may be able to detect very early signs of sickness in others. The findings of this study could help in understanding how people with diabetes might have the ability to detect signs of sickness in others; consequently, they might tend to hide their own signs and symptoms of diabetes due to anticipation of stigma.

Traditionally, Omani men tend to be conservative; accordingly, it might occur that when they are diagnosed with a chronic illness, they might tend to hide it due to stigma as this might affect their status as the head and provider of the family. Consequently, Omani men might have a higher sense of stigma in which the expression of illness might not be welcomed as a health help seeking behavior (Galdas, 2005).

Other Factors Shaping the Concept of Perception of Health

Another factor that might shape the perception of health is ethnicity. Brandon (2010) used a between-groups design that compared the health perceptions of adults based on ethnicity and gender in the southern U.S. to determine if health perception contributed to health disparity between African Americans and Caucasians. The participants completed an extensive health questionnaire called the Northern Louisiana Health Survey (NLHS) (Brandon, 2010), the SF-36 (Ware, 2000)), and selected questions from The National Health Service Corps Community Assessment Project questionnaire (Felix et al., 1998). Data on self-reported health perceptions and health status were compared. Results showed that fewer African Americans perceived their health to be good to excellent ($p < .05$; males, 55.8%; females, 68%) compared with Caucasians (males, 76.6%; females, 77.1%). The authors concluded that African Americans' perceptions of health were often inconsistent with their actual health, especially among men.

Significant cultural factors embedded in ethnicity are fundamental components of health and its relation to individuals. In the wider social context where there may be conflicting interests and values, ethnicity must be considered especially in issues related to health (Attridge, 2014).

To evaluate the subjective health status of the adult population in the Łódź district (Poland) and to determine the factors affecting their self-perception of health, a study was conducted by Kaleta and colleagues (2009) with1, 056 adults aged 20–74 years. Self-perception of one's own health was classified as very good, good, poor, and very poor based on answers to the question "How do you rate your general state of health?"

To assess the factors influencing the self-perception of health, a logistic regression model was used. More than a third of study participants described their health to be poor. Additionally, a higher percentage of older people reported their health as poor compared to those younger than 25 years old (40% for those aged 45–54 years, 60% for those aged 55–64 years and older). Further, participants with lower educational levels perceived their health as worse compared to those with university education (primary/secondary school – men RR=5.3; 95% CI 2.1–13.4; women 4.6; 95% CI 2.1–10.1). Other factors were found to affect participants' tendency to rate their health as poor; these included: unemployment (56% of unemployed rated their health as poor compared to 19% of employed participants), leisure-time activity (67% of men who indicated they engaged in no leisure-time physical activity rated their health as poor compared to 32% of men who reported satisfactory levels of recreational physical activity), and smoking (81% of men who smoked rated their health as poor compared to non-smokers (23%).

In 2004, Schneider and colleagues attempted to explain the self-perception of health for 74 elders (aged 60 and older) living in Ruhr area, Germany by means of a survey. These investigators examined how objective health-related variables related to psychological health and personality factors. Psychometric scales and diagnostic interviews were used for this investigation including the Objective Overall Health Burden (OGB) Scale (Schneider et al., 1999), the Self-maintaining and Instrumental Activities of Daily Living (IADL) Scales (Lawton & Brody, 1969), the Giessen subjective complaints list (Brähler & Scheer, 1983), the Nuremberg self-evaluation scale (Oswald & Fleischmann, 1995), the sense of coherence scale (Antonovsky, 1993), the Philadelphia geriatric center morale scale (Lawton, 1975), the hospital anxiety and depression scale (Zigmond and Snaith, 1983), and the impairment score (Schepank, 1995). Health was measured by subjective and objective reporting; subjective evaluation of one's own health was recorded based on a visual analog scale with the 0 meaning "very poor health condition" and 5 meaning "excellent health condition". Objective measures of perceptions of health were attained by using the Objective Overall Health Burden Scale and the Self-maintaining and Instrumental Activities of Daily Living (IADL) Scales (Lawton & Brody, 1969).

Findings from the Schneider team (2004) revealed a high correlation between subjective evaluation of health and negative scores on the self-evaluation scales of life satisfaction, anxiety, depression and sense of coherence. Multiple regression analyses were used to predict subjective health. Based on the variables of the correlation resulted in a regression coefficient of $R = 0.65$ ($R_2 = 0.42$, adjusted $R_2 = 0.32$). The authors believed that findings are important for health policy because the elderly represent the majority of patients treated in general hospitals in Ruhr area, Germany. Additionally, the findings revealed that self-rated health status determined the utilization and consumption of medication in health care among this population. Study limitation included the inability to generalize findings due to small sample in the second interview compared to the sample in the first interview, all of which threatens the validity of the findings.

Henchoz and colleagues in 2008 used quantitative and qualitative approaches and confirmed that despite the deterioration of both health status and self-rated health in very old age, deterioration is underestimated among people aged 80 and older. The authors also examined how people in old age assess their own health; to do this, they interviewed 44 women and 26 men aged 82 to 95 years. The authors investigated the similarity of health status scores based on SWILSOO records and the perception participants shared about their own health status. The perception of health was measured by asking participants, “all in all, how do you rate your present state of health?” The five possible replies were: ‘poor’, ’rather poor’,’ satisfactory,’ ’good’ and ’very good.’ The average number of chronic conditions in the data collected showed that while both health status and self-rated health deteriorated in this very old age group, people aged 80 and over tended to underestimate the decline. The authors suggested that the gap between perceived and objectively measured health status could be accounted for by social comparison (comparing with others who are the same age) and temporal comparison (comparing same-age others with self).

To provide greater context about the perception of health, reviewing studies with people of different ages is valuable. In a recent study aimed to examine the relationships between several social capital contexts and self-rated health as well as family, neighborhood, and school contexts social capital, Novak and colleagues (2018) conducted a cross-sectional study that included 1863 Lithuanian adolescents (51.4% were girls) aged 14–18 years. The results of the relationships between self-rated health and contexts of social capital were calculated controlling for the following covariates: physical activity, psychological distress, gender, body mass index, and family socioeconomic status. The study results indicated that there were significant relationships between good self-rated health and a higher level of family support, neighborhood trust, and vertical school trust. Further, higher level of family support and neighborhood trust were significant predictors of good self-rated health.

Other authors included mental health as a factor related to having a favorable perception of health. Goodwin and Marusic (2011) claimed that the association between perception of poor physical health and higher rates of physical and psychological morbidity is well known. These authors wanted to understand if there was a relationship between perception of health and suicidality. A representative sample of individuals (*n* = 5,877) between 15 and 54 years of age in the United States were selected to analyze the connection between perception of poor health and suicidal ideation and suicide attempt. Respondents were asked, "How would you rate your overall physical health?" Possible responses were on a 5- item Likert scale of excellent, very good, good, fair or poor. The results showed that the perception of poor health was associated with a significantly increased likelihood of suicidal ideation [OR = 2.14 (1.36, 3.35)] and suicide attempt (OR = 2.03 (1.06, 3.91)).

Qualitative approaches were also used to study the perception of health with groups of people with different ages. This provides depth to the literature review. For example, an ethnographic qualitative study conducted by Garcia and colleagues (2007) described the health-related perceptions of adolescent Mexican immigrants to the U.S. (N=14). In the first of two interviews done with each participant, information was collected on demographics, acculturation, heath care access, self-descriptions of their health, and perceptions of what could help them be healthier. The investigators found that being healthy was perceived holistically by these adolescents, and included physical, mental, spiritual, social, and environmental factors. Being healthy and promoting one's health was found to be an important personal responsibility. Another important source of health-related information was family and friends (Garcia et al, 2007)).

The perception of health in Plains Cree people in Canada was studied by Graham and Stamler (2010). In this qualitative descriptive study (n=14), data was analyzed using thematic analysis and then categorized using the Medicine Wheel. As described by Roberts (2005), the Medicine Wheel is “an Aboriginal framework in a visual shape of a circle divided into four quadrants; each quadrant represents a direction along with the teachings for that direction” (, p. 92). Additionally, Mussell (2005) described the Medicine Wheel as a “symbol used to represent the dynamic system of the mind, body, emotions and spirit, and the needs related to each of these aspects that must be met for the development of human potential” (p. 115).

The researchers derived four predominant themes from the data: the consistent description of health in relation to wellness in physical, psychological, emotional and spiritual domains; the value of health; environmental factors; and economic factors. The authors sought to combine Plains Cree participants’ perceptions to identify their definition of health. The results indicated that to almost all of the participants, health was interdependent on several factors, and personal experiences played a part in shaping their perceptions of health. Thus, a holistic perception of health emerged from data analyzed from the group of 14 participants that was similar to the traditions from the Medicine Wheel (Graham & Stamler, 2010).

In another qualitative study, DuongTran and Garcia (2009) used ethnography to examine health knowledge, beliefs, and attitudes of 15 Mexican young adults living in Mexico City. Findings of this study suggest that participants recognized that human behaviors and genetic factors were the most important causes of obesity. Also, participants considered the quality of life in rural Mexico to be higher than in big cities. From their point of view, rural dwellers are healthier because they have clean air, healthy food, and a slower, more relaxed lifestyle.

In a phenomenological study by Ebrahimi and colleagues (2012), 11 men and 11 women in western Sweden who were considered frail, aged 65 years and above were selected using purposive strategic sampling. These 22 participants had diverse ratings of self-perceived health ranging from poor to excellent. The aim of the study was to develop a deeper understanding of living with disease and disorders in old age through exploring frail elders' experiences of health and perceptions of the phenomenon of health. The interviews that explored the meaning of health were analyzed using Giorgi's descriptive phenomenology. The authors found that when frail elders were able to adjust to the demands of their daily lives in the context of their resources and capabilities, they described health as being in harmony and balance in everyday life.

Trentini and colleagues (2012) conducted a study to investigate subjective perceptions of health among a sample of 90 inpatients aged 60 years and older. The patients were divided into two groups based on whether the participants perceived themselves as healthy or unhealthy. Data collected included socio-demographic information, scores from the Beck Depression Inventory (BDI) (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) and scores from the World Health Organization quality of life (WHOQOL)-100 (WHOQOL Group, 1998) which evaluates the perception of quality of life (QoL) on six domains including physical, psychological, level of independence, social relationships, environment, and spirituality.

When groups were compared, the group that considered themselves to be unhealthy had worse QoL assessments in five out of six domains compared to the group that considered themselves to be healthy. The scores for the physical domain, the level of independence domain, as well as overall QoL were found to be significantly different between the two groups where elderly inpatients with healthy perception showed higher scores on all of the three domains. The results also showed significant associations between healthy perception and lower depressive symptoms in the BDI ($p < 0.007$). Further, better QoL perception in the level of independence domain was found when the variables level of education and social class, and physical and psychological domains were controlled. Another findings was an association between health perception and lower intensity of depressive symptoms (minimal to mild depression) in BDI and an unhealthy perception and higher levels of dependence and depressive symptoms. The authors believed that these findings can help identify causative relations between variables in aging studies (Trentini et al., 2012).

There are many factors that could shape the perception of health including income, marital status, gender and the presence of chronic illnesses. For instance, high social status provides multiple benefits for individuals through more readily accessible financial resources (Anderson et al., 2012). But the impact of these perceptions of health is not universal and differs from country to country (Assari and Lankarani, 2015).

Perception of Health among Diabetic Patients

To address the issue of perception of health and diabetes, there were only a few studies in the literature. Adherence to treatment and self-management were topics of interest to authors as reported. The selected articles used different methodologies and approaches to elicit the perception of health from diabetic patients.

Recently Al-Ghamdi and colleagues (2018) used revised-illness perception questionnaire to survey how Saudi diabetic patients perceive their illness. The sample consisted of 383 T2DM patients attending primary healthcare centers and in Al Kharj, Saudi Arabia. Majority of participants (80.4%) were educated, 69.5% were married, and 51% were females. About 57% were on oral hypoglycemic agents, and 57% had no other chronic disease. Seventy five percent of the participants perceived that diabetes was hereditary and 62.4% thought it is due to diet or eating habits. Most participants (80%) believed that symptoms are controllable and they can do a lot to control it.

A cross-sectional survey was conducted in Turkey by Kartal and İnci (2011) that aimed to define the relationship between perceived health status and metabolic control among 110 T2DM patients. The metabolic control is the outcome of measurement of glycosylated hemoglobin (HbA1C), fasting blood sugar (FBS), non-fasting blood sugar, total cholesterol, high-density lipoproteins (HDL) and triglycerides. The perception of health was measured by asking patients to rate their own health as: very good, good, fair, bad, or very bad. Three HbA1C levels were used in the study including good control (<6.5%) borderline control (≤7.5%) and poor control (>7.5%).

The study indicated that good metabolic control was exhibited in approximately a quarter of participants (24.5%), whereas 44.5% had ‘‘borderline’’ levels and 30.9% had ‘‘poor’’ levels. Half of surveyed participants (50%) rated their own health as poor. Most participants with high HbA1C (<6.5) believed their health to be good (68%), while most participants with poor HbA1C values estimated their health as bad (63.9%).

The authors found other statistically significant differences that have influenced self-reported health including adherence to treatment, level of exercise, level of education, age and mode of treatment. According to the findings, older participants have a less positive view of perceived health. Additionally, participants who are on diet control have more positive perceived health than participants using insulin injection. Furthermore, participants with good treatment adherence had more positive view on their perceived health than those with not good adherence to treatment and participants who exercise have good perceived health compared to participants who did not regularly exercise.

While not specifically focused on perceptions of health, a quantitative survey was done in France to describe the effects of disease on self-care behaviors among 1,092 patients with T2DM (Mosnier-Pudar and colleagues, 2010). The sample selected for the study were adults in which 60% were males. The authors used the data from a French study called DIABASIS survey that provides insight into T2DM patient self-management by identifying five distinct patient types. In each patient type, a set of opinions and attitudes towards the disease that influences patients' disease-related behaviors were constituted, leading to different degrees of commitment to diabetes self-management. The authors reported five different categories of patients in which each patient category defined a set of attitudes and beliefs towards T2DM that influenced disease-related behaviors, leading to different degrees of diabetes self-management. These categories were: 'Committed' (25%); 'carefree' (23%); 'bitter' (19%); 'disheartened' (19%); and 'overwhelmed' (15%). This may have implications for how participants perceive their own health and broaden our awareness of influences on perceptions.

Stover and colleagues (2001) conducted a study to describe the relationship between perceptions of health and their relationship to symptoms in African American women with T2DM. The researcher used the SF-20 (Ware & Sherbourne, 1992) to measure perceptions of health status in which the possible range of scores is 0 to 100, with higher scores reflecting better perceived quality of life. The data from interviewing a convenience sample of 75 African American women with T2DM revealed poor perceptions of their physical functioning and general health among participants.

While the views of younger age groups could be different than adults, their perceptions provide potentially useful insight. In the Wisconsin Diabetes Registry, a sample of 569 children, adolescents, and young adults with type 1 diabetes were selected to study quality of life and its association to clinical risk factors and socio-demographic status (Huang et al, 2004). A total of three questionnaires were mailed every six months to participants to acquire self-reports on perception of health, diabetes-related hospitalizations and diabetes management. By using random-effects modeling, the investigators found there were factors independently associated with better health as reported by participants. These factors included being male, higher parental socioeconomic level, younger age at time of diabetes diagnosis, shorter diabetes duration, no hospitalization in the preceding six months, and lower HgA1c.

The authors claimed that even after adjusting for all identified risk factors, individuals varied in their reported better health; however, on average, between 1987 and 2002, participants reported 0.86 times better health than they reported the previous year. Additionally, the authors justified these findings by acknowledging the variability in perception among participants. They also admitted the possibility that there might be independent unmeasured risk factors for poor health like adaptation and coping to diabetes.

Cavanaugh and colleagues (2008) conducted a study using in-depth qualitative interviews reflecting the views expressed by 20 Native American men between the ages of 18 and 65 years, to identify a definition of health and diabetes. Using Grounded Theory, participants were asked questions from the cultural structure of health and diabetes questioning guide (Keim et al, 2004). Men between the ages of 18 and 65 years were eligible to participate. Results showed that the absence or presence of physical symptoms of disease often enabled participants to define their health. The participants also viewed diabetes over the course of one’s life as bringing an unavoidable declining state of health, ultimately resulting in various health problems and death.

Heisler and colleagues (2005) conducted a study that assessed the relationship between the levels of patient understanding of diabetic care, patient behaviors associated with glycemic control, patient awareness of their latest HbA1c result, and patient's perception of having more control of diabetes. In this cross-sectional quantitative survey that included 686 adults with T2DM, almost two-thirds of the sample stated that they did not know their HbA1c value and only 25% accurately reported their last HbA1c value and understanding of their diabetes care ($P < 0.001$). Diligence of communication with health care providers and more years of education were independently related with HbA1c knowledge. Additionally, it was reported that there was no association between better understanding (higher score of self-efficacy scale and understanding scale) of diabetic care and self-management behaviors. While further research is needed, one possible assumption is that perception of health might not be affected by better understanding of diabetic care.

In Taiwan, Lai and colleagues (2004) conducted a qualitative study to examine perceptions about illness and treatment strategies to facilitate patient-centered, culture-sensitive clinical skills among Chinese diabetic patients. From a rural Taiwan community, 22 participants (12 were males, the average age was 60.2 years old) were recruited and in-depth interviews were used to collect data. Editing and immersion (or crystallization, according to the authors) was done by the authors to study the transcripts of the interview. The authors described editing as their process of searching for meaningful segments, which consisted of cutting, pasting and rearranging until a reduced meaningful summary emerged. Editing and immersion /crystallization was used to determine clinical significance; emerging themes were compared with current medical knowledge.

The results showed that Chinese diabetic patients generally had variable perceptions about treatment strategies. Participants agreed on the benefits of dietary restriction and exercise; dietary restrictions were mainly understood as reducing carbohydrate intake and were thought to be most important. Additionally, exercising to the point of sweating was perceived as a means to remove pharmaceutical toxins. The authors concluded that all treatment strategies were regarded by participants as integrative and interconnected in daily life. The authors further concluded that three misconceptions were found and should be clarified during medical consultations. These misconceptions included a focus on sugar-control only, the perceived benefit of sweating to eliminate toxins, and the fear of renal toxicity due to hypoglycemic agents. Additionally, the authors suggested renaming diabetes to ‘metabolic syndrome’ because it may generate new insight about the disease process that is more acceptable to Chinese diabetic patients in Taiwan (Lai et al., 2004).

Perception of Health and Adherence

Adherence to the prescribed treatment plan is an extremely important concept when dealing with issues related to hospitalizations, readmissions, and cost. If the perception of health is positively strengthened through individualized strategies by working with patients on an individual basis to reach an agreed treatment goal, adherence might be improved (Unverzagt et al, 2016).

To describe the misunderstandings of T2DM Swedish patients have about their illness and treatment, Holmström and Rosenqvist (2005) selected 18 encounters between patients with diabetes and the diabetes nurses or physicians. These encounters involved 18 patients and of them, nine were men and nine were women, between 40 and 80 years of age (average 64.5 years). Researchers described five themes that emerged from thematic analysis for the transcribed reflections of participants and video-recordings of patient-professional encounters. The themes identified were as follows: T2DM was not considered by participants to be ‘real’ diabetes; further self-monitoring of medication and blood glucose were not considered a learning tool but routine care. Also, reducing fat was seen as an important aspect in dieting. Misunderstandings were generally related to diabetes and its treatment despite repeated checkups and sufficient access to health care. Adherence to agreed treatment was good despite the patients' lack of understanding of how to perform many treatment routines (Holmström & Rosenqvist, 2005).

Another study related to adherence was carried out by Farmer and colleagues (2006) to assess beliefs about taking medication among T2DM adult patients (n= 121). The Medication Adherence Report Schedule (Horne et al., 2001), guided by the theory of planned behavior (Ajzen, 1991), was used to assess self-reported adherence. There was positive agreement about the benefits of taking medication leading to intention to take medication regularly by the majority of participants. However, negative beliefs were related to the idea that taking medication would "lead to weight gain" (13.9%) and "cause unpleasant side effects" (24.1%). The impressions of increasing weight due to frequently taking diabetes medicines and changes in the daily routine were the two views related to a reduction in medication adherence.

Another issue related to perception of health is the level of awareness or conscientiousness. In a nationwide online survey, Hill and Roberts (2011) included 2,136 adult participants to examine whether and how adherence mediates the relation between conscientiousness and physical health. The authors also examined the variation between adhering to doctor's orders (doctor adherence) versus adhering to medication regimens (medication adherence). In addition to a self-report measure of perceived general health, the participants completed personality and adherence measures.

The results indicated that across adulthood, there was a partially mediated relationship between conscientiousness and perceived health for doctor adherence. On the other hand, there was a conditional relationship between the indirect effect of medication adherence and age, as medication adherence mediated the link between conscientiousness and perceived health only for adults aged 51years and over. The authors concluded that the role of adherence in explaining the link between conscientiousness and health may differ across adulthood (Hill & Roberts, 2011).

Perception of Health within the Omani Context

In 2011, Al-Mandhari and colleagues conducted a cross-sectional retrospective study to assess the effect of clinical characteristics and demographic data including DM and hypertension (HTN) on the perceived health status in primary health centers in Oman. The study included 450 patients (aged $\geq$ 18 years) seen at six primary health centers in the Muscat region, Oman. The authors used the SF-12 including the physical component scale (PCS) and mental component scale (MCS) components of SF-12 to elicit the Perceived health status (Ware, 1996). In the SF-12, higher scores indicate better health.

The results of the study showed that the presence of both DM and HTN was associated with lower PCS scores compared to those with diabetes alone ($p = 0.001$). Moreover, longer disease duration was associated with lower PCS scores ($p < 0.001$). Higher MCS scores was found to be associated with gender (male, $p = 0.005$), marriage ($P = 0.017$) and higher income ($p < 0.001$). Furthermore, polypharmacy was associated with lower PCS ($p < 0.001$) and MCS ($p = 0.005$) scores. The authors concluded that perceived health status was affected by demographic and clinical characteristics; high income married men had higher MCS and those who used many medications had lower MCS (Al-Mandhari et al, 2011).

In neighboring countries to Oman which shared a similar culture, studies on medication compliance and perception of health have been conducted. Ypinazar and Margolis (2006) conducted a study focusing on the impact of Islam on health care beliefs and perception of health and illness among elderly Muslim Arabian Gulf United Arab Emirates patients (N=10). The authors used a focused ethnographic approach to explore elderly Emiratis' perceptions of health and illness. Narratives of health and illness, as well as the relationship of Islam to health beliefs were explored through the interview process. A major finding of this focused ethnographic study was that religious beliefs had a strong effect on the thinking of the participants and the absence of obvious disease was paralleled with the perception of having good health. Seeking preventive health services for illnesses like diabetes was less likely than seeking treatment for noticeable disease.

In another study in the UAE, using a questionnaire modified from the Michigan Diabetes Research Training Center instrument, a random sample of 575 DM patients was recruited from diabetes outpatient clinics of Tawam and hospitals in Al-Ain city (UAE). The aim of the study was to assess participants' knowledge, attitudes, and practices towards the management of diabetes. Results showed that on self-report, 10% of diabetic patients identified as non-compliant with medications (Al-Maskari et al, 2013).

In another study conducted with 54 Qatari patients, Kheir and colleagues (2011) used the Diabetes Habits and Beliefs Questionnaire (DHBQ) to investigate the level and relationship between knowledge, attitude, general practice and psychological status of patients with T2DM. The data was collected in face-to-face interviews with patients visiting the diabetes clinic at a tertiary hospital in Qatar. The authors found that participants reported poor practices of taking medications in relation to meals and of modifying the prescribed medication doses according to the blood glucose readings. Additionally the authors reported a high correlation between patients' knowledge and attitudes. Also, psychological factors were positively associated with knowledge and attitudes.

In a different study in Kuwait, Al-Adsani and colleagues (2009) used the Michigan Diabetes Knowledge test (Fitzgerald et al., 1998) in a cross-sectional survey with Kuwaiti adults with T2DM (*n* = 5114) to investigate level of diabetic knowledge and to identify the main gaps in knowledge. Results showed a poor level of diabetes knowledge in this sample (less than score of 11 in knowledge score). Factors that led to lower knowledge scores were: lower educational levels, limited family income, older age, and negative family history of diabetes or smoking. The authors could have had stronger and more precise inclusion and exclusion criteria for the result to be clearer and to avoid bias in sampling.

Conclusion

This chapter has provided a focused approach to the background literature for this study designed to explore the perception of health of different populations and related issues including adherence to treatment, stigma and diabetes in Oman and neighboring countries. It appears that the perception of health in different age groups and disease conditions is determined by multiple factors. Stigma seems to influence the perception of health; also health perception may influence treatment adherence. As is demonstrated in this review, most published studies of perception of health focused on health from an illness perspective. Thus, the concepts of health and what health actually means to individual people or groups have rarely been examined in research. Furthermore, little is known about Omanis' perceptions of health, how they perceive certain illnesses, what their health promotion activities are, or what their experiences and challenges are when seeking to enhance health by gaining access to the Omani health care system.

To be able to assess, evaluate and expedite health initiatives for the target population, it is imperative to begin by acquiring more data about this population and their perceptions of health and related health practices to lay the groundwork for future interventions. Using a solid methodology and selecting a sub-sample of the male Omani population is a reasonable way forward given the cultural restriction on men interviewing women. Including individuals with DM in our sample and implementing an in-depth study to explore their experiences will bring needed insight into Omani T2DM patients' perceptions of health.

CHAPTER THREE

THEORETICAL/PHILOSOPHICAL UNDERPINNINGS

In this qualitative research project, I sought to understand the perception of health of diabetic Omani men with type 2 diabetes mellitus (T2DM). The philosophical theory of Symbolic Interactionism (SI) provides a useful guide for approaching this investigation of how study participants perceive health. I showed how the philosophical assumptions of Pragmatism influenced the philosophical theory of SI and how together, Pragmatism and SI, form the underpinnings of Grounded Theory methodology, techniques used to do a thematic analysis in the research described in this proposal (see chapter four).

Pragmatism

Pragmatism as an American philosophy appeared in the late nineteenth century (Moore & Bruder, 1999). Since that time, it has affected the modern history of philosophy especially in America. Pragmatism has been applied to the pursuit of science. Thus, it has played a role in the development of qualitative approaches within nursing science because of its influence on Grounded Theory methodology, a methodology commonly used by nurse scientists (Corbin & Strauss, 2014). Popkin and Stroll (1993) have purported that Pragmatism was most likely a reaction against realism which claimed that any object exists in reality independently of our conceptual scheme. On the other hand, Festenstein (2016) argued that Pragmatism shares important commitments with realism as many key arguments of Pragmatism support realism. William James, Charles Sanders Pierce, and John Dewey, all great thinkers of their time, developed Pragmatism as a way for intellectual problems to be evaluated and resolved (Menand, 2001; Popkin & Stroll, 1993). In Pragmatism, ideas are considered to be tools for coping (Menand, 2001). However, Pierce was critical of philosophers who did not express clear ideas.

He famously claimed that, in philosophical terms, precisely defined ideas indicate clear ideas (Pierce, 1878). So, precision was needed in the expression of ideas.

Within philosophy, Pragmatism is formally defined as a system to solve and evaluate intellectual problems, but it is also a theory about the kinds of knowledge that we are capable of acquiring as human beings who are dealing with life challenges (Popkin & Stroll, 1993). Pragmatists' emphasis on applying scientific methods to moral and social problems led to specific proposals (Ray, 2004). Despite Diggins' (1995) views on Pragmatism which has a split personality in having two branches: one extending from Peirce forward to Habermas and the other branching from Emerson to Rorty's neo Pragmatism, Pragmatism is still in use and expanding.

With Pragmatism, James claimed that beliefs are considered to be true if and only if they are useful and can be practically applied (Archie & Archie, 2004). According to Pragmatism a theory is considered to be "true" for a person only if that theory actually applies to them in their particular situation and is found to be productive in dealing with an experience in their everyday life.

Pragmatism is also significant to SI in the concepts of social and personal experience, and beliefs and truth. These concepts are related to inquiry about the human experience of perceptions, in this case, perceptions of health.

Pragmatism and Human Adaptation

In Pragmatism, Pierce argues that human beings evolved the capacity to adapt to circumstances in the environment (Colapietro, 2009), and because some elements of adaptation involve reflection, it may also be imaginative, and the imagination often involves the use of symbols. James built on Pierce's idea of the human capacity to adapt to circumstances through imaginative and symbolic thinking, by adding that the product of reflection and thinking becomes meaningful to an individual when it includes a reference to the individual's beliefs (Suckiel, 2009, p.35). Beliefs form due to habits and have meaning for us, even if we are unaware (unconscious) of them. Beliefs influence one’s attitudes and behaviors. In reference to the work of adapting, Dewey explained that human beings employ the activity of the mind to render that which is perceived as that which is “true.” He holds that what comes to be accepted as “true” for any given person occurs as a result of the interaction that that person has with others and themselves and also as a result of that person’s actual behavior (Jackson, 2009, p.60).

Drawing upon the assumptions of Pragmatism, I proposed to explore and analyze how Omani men with T2DM perceive health and illness (including that of T2DM) and how participants’ thoughts, attitudes, and beliefs influenced their perceptions of health. This included an analysis of symbols that matter to participants and ways they adapt within the context of their life as men with T2DM. A deeper understanding of these influences may lead to improved methods of working with Omani patients with T2DM in a country in which health services are provided with minimal financial cost to the patient.

Perception of Health and Pragmatism

Assumptions of Pragmatism

A major assumption within Pragmatism is the claim that “knowing is doing” (Magee, 2001, p.29). According to Pierce and James, the human phenomenon of knowing (i.e., having knowledge of something) is generated simultaneous to the process of performing actions (Magee, 2001). Additionally, Moore and Bruder (1999) explained that in Pragmatism, the application of what a person knows (i.e., knowledge) is dependent on the effect it has on a person’s everyday life. In other words, knowledge or ideas take on meaning for an individual when that knowledge “works” for that individual (Magee, 2001)

Diabetes mellitus (DM) is a chronic disease. Therefore, patients do not feel drastic physical changes nor uncomfortable symptoms immediately when there is a problem. Typically, they do not feel pain. Thus, there is less of a perceived need to make lifestyle changes (Wermeling et al., 2014). The damaging physiological effects of uncontrolled DM as an illness might not be as clear to patients as it is with other acute illnesses. This lack of awareness or understanding about the disease processes and dangers of uncontrolled diabetes means that some patients may have a distorted perception of their own status of health or illness; they may not realize their health is in danger when it is. By applying the view of Pragmatism, we assume that this could influence their beliefs about various things including health and illness.

This is impactful for a study of Omani men with T2DM as health care providers may assume that all patients were given the same amount of information to help them adopt a new lifestyle, to strengthen their health, and to be able to live with an illness. However, the information provided by the health provider may not have the meaning they intended it to have for a particular patient. To date, no research has been implemented to investigate how Omani men with T2DM perceive, receive, integrate, or act on information they received; how they understand prescribed treatment; and whether or not they are adherent to it.

In James’ (1907) version of Pragmatism as a theory of truth, he explained this assumption more clearly. James maintained that the only motive a human being has for asserting anything to be true is that it works for them in their life and context. He claimed that a “truth” begins as an idea but will eventually transform from an idea into a belief that a person holds; a belief they will not question (James, 1907; Magee, 2001). In reference to caring for Omani men with T2DM, health care providers may claim that maintaining good health should progress from an idea into a belief manifested in a lifestyle conforming to a positive perception of health. Consequently, the expectation would be that it should translate to a patient's adherence to a prescribed professional medical treatment. However, this is what the health care provider expects; this may not be the case for an Omani man with diabetes.

Another key assumption within Pragmatism is that all knowledge is fallible depending on the situation (Magee, 2001). In relation to a person's perception of a truth, the perspective of Pragmatism holds that if a particular truth no longer fits a situation for a person, if it no longer works for them, that particular "truth" will be modified or replaced as the person continues to cope and adapt using other ideas that do work in the situation. As such, a particular idea that was once considered to be "truth" will have lost its significance for the person, so it will change for them (James, 1907, Magee, 2001).

Menand (2001) described how Pragmatism explained the spread of ideas. He explained that to a Pragmatist, ideas are like germs that are transmitted from one person to another, and their transmission is influenced by the context of the person and the idea. As a result, ideas that work and are accepted by the group (or society), are the ones that survive. Ideas that are not transmitted from person to person are ultimately rejected or replaced (Menand, 2001). In Pragmatism, according to Popkin and Stroll (1993), for ideas and truths to be suitable to people, able to solve their problems, and function for people, they must move through a course of development and verification. The development of ideas and the verification of ideas as truths are experienced by human beings as processes that are part of everyday living; this happens over time as people live their daily lives and cope with their problems by solving them as best they can. For this reason, it is imperative to study the lived experiences of Omani men with T2DM within the context of their lives, and to seek understanding of how their perceptions of health make sense to them in light of their experiences and contexts.

Epistemology of Pragmatism

Individualism plays a major role in the production of knowledge in Pragmatism. For any phenomenon to be studied and understood, researchers from this philosophical school of thought employ inductive approaches and conduct multiple observations to identify common patterns and make generalizations (Horner & Westacott, 2000). This is a fitting approach for the study of the perception of health among Omani men with T2DM; here, each man is conceptualized as an individual whose experiences and perceptions can provide insight into a phenomenon.

Human beings tend to rely heavily on their personal experiences to understand the world, especially when coping with difficult encounters in life. However, I propose that health may not be considered an encounter but more of a characteristic or status. Additionally, health as a concept is often taken for granted and not actively considered as an entity of any sort (neither an encounter nor a status) by people unless a person becomes sick.

Symbolic Interactionism

George Herbert Mead was an American pragmatist who was a student of James and a colleague of Dewey; drawing on Mead’s work, the term symbolic interactionism (SI) was coined by one of Mead’s students, Herbert Blumer in 1937 (Blumer, 1969). It refers to the study of human behavior as it relates not just to the individual but the group or society. Human behavior and communication are understood by known symbols. Symbols have meanings because of and through interaction with others. All symbols including self-symbols, have action implications. Based on symbols, certain expectations form and, according to SI, persons act in the context of these expectations for behavior. Wood (1992) emphasized that the experiences, knowledge, and relationships of human beings are inevitably mediated through symbols (p. 17); furthermore, interaction with and through symbols allows human beings to be proactive in relation to themselves and their surroundings. Thus, symbols are processed and interpreted through the lens of personal experiences and societal norms in order to mediate a response to each cue. The ability of human beings to interpret those actions and respond in ways that are appropriate to their context is key to how they understand others' actions and associations.

Blumer (1969) described three main premises of SI. They include that human beings act toward things and people around them on the basis of the meaning they ascribe to those things and people, that meaning arises from social interaction, and that those meanings are handled and modified through interpretation by the person. Additionally, Blumer claimed that human beings make indications not only of the things or people around them, but of themselves. Blumer was referring to self-indication which is a process through which the individual notes things, assesses them, gives them a meaning and then decides to act based on the meaning (Blumer, 1969, p. 81). Our ability to attach meanings to our surroundings enables us to use a self-indication process to construct our actions (that is, to decide upon an action that makes sense to us and engage in it). That ability is what Blumer (1969) asserts as the distinction between human beings and other creatures, all of which are incapable of self-indication and unable to employ the process of interpretation of meaning or SI (Blumer, 1969). In contrast to that of other creatures, human action is possible because humans use symbols and interpret those symbols (Blumer 1969, p. 79). According to Blumer (1969) self-indication is a continual process in which we create mental notes and references as we take account of our environment.

One of the main assumptions of SI is that the human beings can consciously take into consideration the meaning of symbols when communicating with others, and accordingly, imagine the role of others (also called ‘taking the role of the other’) which helps one to modify their own behaviors and attitudes (Becker & McCall, 1993). This involves a process that is not only an individual process, but one that includes large groups of people, or society.

The understanding of the relationship between individuals and societies, or between a self and others, was Mead’s goal in developing SI. Mead’s profound insight was that neither the self nor society can exist without the other. This is because a person’s sense of self emerges from interaction with others and furthermore, societies emerge from interactions among people’s selves (Stryker, 2008).

SI allows for a multilevel dynamic process of understanding, focusing on the micro (individual) and macro (society) levels. The self, line of action, role making, role taking, objects, mind and local culture are all important concepts for SI.

The self

According to Hewitt, (1988), the "Self" is experienced as an "I" and a "Me" intermittently or continuously. The “I” represents the self in an active state, especially when engaging in an activity, and therefore is experienced when persons are perceiving themselves as the subject of their life. However, the “Me” represents the self as the object of one’s own thoughts. Human beings have the ability to be both the subject of their life and an object to themselves; as an object, they can reflect on, critique, and analyze their self. Thus, the human being can experience the world as an "I" or a "Me” or even both at the same time. In this way, the human being has the capacity to be in command of their own behavior through acting or doing while simultaneously critiquing or evaluating their own actions. This facilitates acting in a way that is self-interested. Through this process, human beings develop attitudes as they live their life and engage in behaviors (Blumer, 1969).

Objects

In SI, each person lives in their own symbolic universe of meaning that is attached to objects (Hewitt, 1988). The meanings of objects, whether concrete or abstract, are not fixed nor are they totally independent of individual social experience. However, the meaning of objects may change due to the human ability to acquire new information through the environment or through reflections leading to an alteration or replacement of an old meaning with a new one. For example, some objects may no longer be relevant to the individual when facing a new illness as the individual refocuses their attention on the new situation.

Line of Action

A line of action is the term Blumer (1969) used to refer to the choices that an individual makes in terms of how to act and what to do within the context of their life (Blumer, 1969). A line of action is created through the process of self-indication resulting from the ability to act back within a situation (Morrione , 2004, p. 75). Blumer pointed out two types of actions: the individual act and the social act (Morrione, 2004, pp. 69, 95); but any act is originally built up by an individual as they cope with the world by inserting the self into the process of self-indication. As such, the individual act is transformed from that of a behavior initiated by a stimulus, to that of a process, and within the process, the self can actively mediate or direct the sequence that ensues (Blumer, 1969, p. 74). The social act on the other hand, involves two or more persons in a joint activity where individuals meet and deal with the action of other people (Morrione 2004, p. 95).

Applied to my dissertation, the concept of line of action suggests that each Omani T2DM participant in the proposed study will construct, or take up, lines of action towards various things including towards health. They will act in the way that they perceive to be the best, most suitable way for them to engage in. Also, they will do this in relation to how their role fits into the lines of action of other people in their world. Their engagement in actions will be experienced as part of their interactions with others as a member of a social group. With SI, we do not assume that these interactions are pre-established in any way, but that they emerge as an individual engages in living life as part of a social group. As individuals such as the participants with T2DM in my study interact with others, they will influence other people, their point of view, their relationships, and ultimately, their behaviors.

The self has a reflexive ability to choose a line of action stimulated by any object in the environment (Charon, 2007). Parahoo (2014) defined reflexivity as a continuous process of reflecting on ones' values, perception and behaviors. However, with SI, a more in-depth explanation of reflexivity involves the identity of a person (Stryker & Serpe, 1982). In SI, a basic concept and a fundamental characteristic of the self is that it is reflexive. Reflexivity enables human beings to reflect on themselves, establish an argument with themselves, assess and appraise themselves, and so forth. This reflexive attribute enables individuals to see themselves from the perspective of another person.

Role-Making and Role-Taking

Regardless of what is acceptable and appropriate in group life or society (such as expected individual roles, duties, rights and obligations), reflexivity, memory and knowledge all impact the socialization processes. Patients afflicted with T2DM are likely to experience many reflections, conversations, interactions and actions with the self around their concerns about being diagnosed with T2DM or being a 'diabetic'. Symbolic Interactionists identify these reflections and interactions as “mind action" (Charon, 2007, p.104); to do this, a person uses language including meaningful silence with themselves. This will be discussed further below.

As already mentioned, role-taking has held a central position in SI. For most symbolic interactionists including Mead (1934), Turner (1962) and Blumer (1969), human beings have the ability to take the role of the other through social human interaction. In role-taking, people take into account in their interaction with others by mindfully imagining how they would appear to others and then allowing that to influence them and their behaviors.

Mind

A symbol is an abstract stimulus to which people attach meaning through social interaction with others. This process transforms the physically sensed reality of the world (what a person sees, hears, touches, etc.) to a reality that can be understood through mind action. That understanding allows human beings to react to stimuli in the world around them (Charon, 2007).

In any interaction, human beings engage in a situation definition process, according to SI. Most human beings, however, do not specifically or self-consciously notice that they are engaged in this process. Regardless, this process includes interpreting the situation, setting goals, building up identities in order to apply a perspective, taking the role of the other, defining self and other social objects, and then applying knowledge (Zhang, 2009).

In SI, the existence of the concept of mind depends upon the existence of an interaction between society, symbols, and the self (Redmond, 2015). The mind functions to give meaning and to interpret objects by connecting related symbols, thus creating mind-action.

Mind-Action

Charon (2007, p. 93) wrote, “Mind is defined as all symbolic covert action toward oneself.” The ability to have inner dialogue with oneself is mind-action. Human beings produce thoughts or actions for their own use, but those thoughts and actions are based on symbols shared with society. This allows a person to choose to share these mind actions (including thoughts) with others (Charon, 2007).

Charon (2007) described mind-action as an active process that involves imagination while doing, creating, building, and discussing with oneself (p.104). Additionally, mind actions or thoughts of a person reflect how symbols are associated with many various meanings, interpretations, and thoughts (Redmond, 2015). Consequently, mind actions are the way that human beings manage the world because human beings act toward things on the basis of the associated symbolic meanings.

In the study, during interviews with participants, I was cognizant of mind action. This involved trying to understand how people are thinking about themselves, their relationships, their experience of T2DM, and health.

Local Culture

According to Charon (2007), any group of people who either live together or have a common experience could be generally participating in a "local culture" (p.160). In other words, the ‘local culture’ is a shared perspective among people in, for example, a family and/or in a bonded environment. In the case of this study, this could include any assumptions, ideas, symbols, or ongoing dialogue that a man with T2DM shares with others who perceive T2DM including others who also have been diagnosed with it. Attributes including level of income, education, family size, and community support are other parts of a local culture that may influence the reality of daily social life (Charon, 2007) for men in my study.

Summary and Conclusion

Together with the philosophical assumptions of Pragmatism, various concepts from SI guided me as the PI and help me focus on perception of health among Omani men with T2DM in this study. SI also sharpened my focus as a PI to recognize the many aspects of the lived experiences of each participant. In accordance with SI, each Omani man with T2DM who enrolled to participate in the proposed study was assumed to have the ability to self-indicate, self-reflect and self-interact. SI helped me be more cognizant of key elements such as symbols and objects that have meaning for the person in their situation. I aimed to notice and analyze interactions the men described during interviews and was careful to hear their own interpretations of themselves, how their view of others affected their interpretations, and how their role as part of a group (society) influenced the meaning of health as they perceive it.

CHAPTER FOUR

METHODS

For this qualitative thematic analysis (Braun & Clarke, 2006), I used Constructivist Grounded Theory (CGT) techniques (Charmaz, 2014) to explore, describe, analyze, and interpret the experiences and perceptions of health and illness among a sample of Omani men who had Type 2 Diabetes Mellitus (T2DM) and who were non-adherent (have HbA1c levels of 6.5% or higher) to gain an understanding of their attitudes and behaviors related to health and illness in general as well as health access and health maintenance. The specific aims of this project were:

1. To explore and describe how participants perceived and defined health and illness based on their experiences;
2. To explore and describe the factors that facilitated or impeded participants' T2DM self-management;
3. To explore and describe factors that facilitated or impeded participants in accessing healthcare services;
4. To explore and describe the dynamics between participants' perceptions of health and their health maintenance;
5. To identify and develop themes, using grounded theory techniques, of the experiences, processes, and perspectives of participants' regarding health maintenance.

Research Approach

Design: Constructivist Grounded Theory

This study had a qualitative descriptive design. A thematic analysis (Braun & Clarke, 2006) of interview data was done using CGT techniques. Due to the lack of studies defining the perception of health and illness among Omani men with T2DM, a qualitative approach was warranted to inductively study real life phenomena and concerns or ideas that are based on actual experiences of participants. This thematic analysis was guided by Braun and Clarke's (2006) six step-by-step phases of thematic analysis: 1) familiarizing yourself with your data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes, and 6) producing the report. Furthermore, the techniques of CGT were used including the development of themes from analysis of data starting with the first interview which was coded and were analyzed before the second interview (Charmaz, 2014).

Symbolic interactionism (SI) is a philosophical theory that informed my use of GT techniques (Corbin & Strauss, 2015; Charmaz, 2014). As discussed in chapter 3, SI allows researchers to better understand participants' expressions of beliefs about the world in which they are living (Fields *et al*, 2006, p. 158). Additionally, SI as a philosophical theory and GT as a methodology not only inform and complement each other, they also can advance each other (Charmaz, 2014, p. 277). A qualitative approach using thematic analysis was appropriate for this dissertation since little is known about the perception of health and illness, or related behaviors among Omani men with T2DM.

The Methodology of GT

GT was created by Glaser and Strauss (1967) while they were studying death and dying in hospitals. Years later, a constructivist approach was used to refine GT into Constructivist Grounded Theory (CGT) by one of their students, Kathy Charmaz (2014). The latter emphasizes not only the rigorous procedure of GT but also recognizes the interpretive aspect of analysis.

Urquhart (2012) concluded that interpretivism as a philosophical approach asserts that to fully understand the social construction of reality, one must understand the factors producing that reality. This is due to the fact that interpretivists consider reality to be relative and multiple. Accordingly, it is assumed that there must be more than one structured way of gaining access to the meanings and realities of different individuals.

Lincoln and Guba (1985) argued further, however, that the work of the researcher to gain insight into diverse meanings is challenging, as interdependency on other systems for meanings exists. Through constructivism which could be defined as a social scientific perspective that addresses how realities are made, Charmaz claimed that people construct realities in which they participate (Charmaz, 2014, p. 342). Additionally, Carson and colleagues (2001) have reasoned that the knowledge generated through CGT is perceived through subjective and socially constructed interpretations. These scholarly distinctions of CGT supporting the selection of this methodology for this dissertation focused on studying the perception of health among Omani men with T2DM.

Symbolic Interactionism

SI guided the proposed study's emphasis on how the sample of Omani men with T2DM define health and how their interactions with others including family, friends and health care practitioners affected their perceptions of health. SI guidance was also employed to help understand the life and situation of each T2DM patient.

Research Sample

Sample and Inclusion Criteria

To address the specific aims, the PI recruited participants who met study inclusion criteria. Inclusion criteria required participants who were:

1- Omani men

2- Patients who were diagnosed with T2DM at least one year prior to the study interviews so they could express thoughts and feelings about their experiences at a greater depth due to having had T2DM for at least one year (since duration of illness can influence health perception).

3- Aged 20-60 years old, were able to comprehend T2DM health information, and had less comorbidity (so their focus was more specific to diabetes).

4- Had hemoglobin HbA1c at or above 6.5% as an indication of poor glucose control for the last 3 months (i.e., the latest HbA1c level, plus two earlier readings if available)

5- Attended the diabetes outpatient clinic for regular follow-ups as a means of seeking help and a show of willingness to control blood sugar and improve health status

6- Were willing to participate in the study.

7- Had the ability to understand the Arabic language (some participants were able to speak English as well)

HbA1c identifies average plasma glucose concentration; levels of HbA1c were retrieved from patient medical records, upon consent, including HIPPA consent to participate in the study. HbA1c is a lab test that shows the average level of blood sugar for the past 3-4 months (normal value: below 5.7%).

In addition, the participant had to be willing to be interviewed and have their voice digitally recorded, plus able to express their comprehension of the nature of the research study and give informed consent by verbalizing their understanding of the purpose of the study, their right to review the recorded interview, their right request to delete any part of the recording, and their right to stop the interview at any time. Each participant was interviewed once, but no interview session extended beyond 60 minutes. Participants were hesitant to have more than 30 minutes of interview, so the duration of the interviews was reduced from the 60 minute goal that was originally planned. There were no participants who wanted to have more than 60 minutes of interviewing, nor did any participants desire to do a second interview at another scheduled time and place even though it was offered. All interviews were conducted without any problems or challenges.

Exclusion Criteria

Patients who were diagnosed with T2DM less than one year prior to the study were excluded to ensure experience as a diabetic patient and all other patients who have more than one year since diagnosis of T2DM were included. Men who met the inclusion criteria but were not interested in being interviewed, and who were unwilling to provide informed consent were excluded from participation in this study. Women were excluded in the study due to social constraint and the difficulty of one to one interview with the opposite gender without accompanying of a male relative. Screening of participants was done by the researcher.

Recruitment

Participants were recruited from a secondary care specialized polyclinic with specialized diabetic care located in a large city in Oman. Diabetic outpatient clinics have at least 3 rooms, each with a physician and a nurse in each room. After receiving UCLA IRB approval and ethics approval from the top management of the polyclinic, who had the authority to approve the conduction of the study, meetings were conducted with available diabetic clinic teams to explain about the study including aims, sampling and methodology.

The timing for recruitment was during the official clinic time from 0800h in the morning to 1300h in the afternoon when the PI visited the clinics’ waiting rooms. The diabetic clinic team was informed about the eligibility criteria. The diabetic clinic team (including the nurse, podiatrist and dieticians) was requested to help with the study after receiving ethics approval from the local stakeholder from top institution authority. The team received all necessary information and training regarding research ethics. The team identified possible participants during their clinic visits according to the specified inclusion and exclusion criteria and checklist. Accordingly, they asked the patient for his permission to share his name with the PI, after permission, the PI was informed. Flyers written Arabic and English were given to potential participants and the PI was available to answer questions during patients' waiting time or after finishing the consultation. If the potential participant was interested in learning about the study, the PI verbally explained in person about the study and the approximate time required for participation in the study.

Data Collection Methods

Procedure

After presenting the informed consent document to the participant and discussing it with him, the potential participant was requested to consent. This allowed the research team to access their latest HbA1c blood results in their medical chart. Thereafter, once verbal agreement was granted after screening the participant, the participant was invited to meet in a private office in the clinic where the PI discussed and replied to any concerns about signing the written consent form after instruction about the study and the participants' confidentiality and the right to withdraw from the study at any time. Participants were given the opportunity to ask questions and clarify any ambiguity regarding the study and the PI discussed and answered any question raised. The PI followed established procedures specifically for the conduct of the proposed qualitative study (appendix A). All the interviews were conducted in Arabic by the PI who is bilingual in both Arabic and English.

After the participants gave verbal informed consent they were interviewed by the PI in Arabic. Additionally, when participants wished to have the interview at another time and location, the PI offered to schedule another time and place for the interview that was both safe and convenient for both the participant and the researcher. Prior to the interview, the participant was administered the Arabic demographic questionnaire (Appendix B) designed for the study including age, employment status and type of job, income, educational level, marital status and daily activity levels.

Two digital recorders were used to collect the data during a face-to-face interview (one is a back-up in case the first fails for some reason) in a room with privacy at the diabetic clinic. A semi-structured interview guide (SSIG) helped in guiding the PI during data collection. Open-ended questions designed by the PI and prompts were used based on the specific aims to learn about the experiences of participants that included their health status, medical history and treatment (See Appendix C).

The interview was designed to broaden the perspective of questions to include the impact of cultural, environmental, and personal values and beliefs regarding the perception of health, as is encouraged when using CGT (Charmaz, 2014). The constructivist approach was based on the researcher’s understanding of the world of human experiences (Cohen & Manion, 1994, p.36). In constructivism, researchers rely on participants’ viewpoints about the situations under investigation (Creswell 2003, p.8) where the knower and respondent are co-creators of understandings (Denzin & Lincoln 2005).

Constructivist assumptions based on CGT (Charmaz, 2014) put the focus on the experiences of the participants, knowing that the PI asked the questions and therefore influenced the data that was produced (Mills et al. 2006). For this reason, the PI participated in reflexive memo writing before and after engaging in any recruitment session, encountering any participant, or doing any interview. The memo consisted of the researchers' impressions and reflective thoughts of the interview without personal identifiers, using only study participant identification numbers. The PI reflected upon their social position and how this may or may not be affecting their interactions with the participants, the recruitment process, etc. The PI also explored possible solutions while writing a memo to reduce any bias that may be influencing the interviews.

The electronic audio file of the interview was labeled without any identifiers of the participant. Each audio file was assigned a pseudonym in order to protect the identity and to preserve confidentiality of the participant. The audio file was downloaded electronically into a password-secure laptop. All recorded interviews were transcribed verbatim by the PI and checked for accuracy in Arabic by the PI. Then all transcripts were reviewed by the PI while listening to the audio recording in order to ensure accuracy and in order to insert field notes and observation comments. Next, each interview was translated into English by the PI followed by a consultation with a professional translator who had significant experience in Arabic-English translation. The audio recordings and the identifiers included in the transcripts were permanently deleted from the laptop after the PI verified the accuracy of the transcription.

Interview Guide

For this thematic analysis, CGT techniques supported the researcher in seeking understanding of participants' complex behavior and thoughts without imposing any a priori categorization that may affect the inquiry (Fontana & Frey, 2000). The SSIG was developed after attending qualitative courses at UCLA including courses focuses on GT in which the PI developed and used SSIG for the courses attended. In addition, the SSIG was reviewed and refined after considerable literature review and pilot testing in collaboration with and under the supervision of the dissertation chairperson and committee members; it was organized to address the specific aims (see Appendix B). However, as the researcher learned more about participants' experiences with T2DM, the questions asked were modified in an iterative fashion to go deeper into topics that the participants describe as meaningful in keeping with CGT (2014). The PI discussed this with the mentor (Dissertation Chair) via emails or by sharing not only transcripts of interviews but also memos that included analysis about the meanings that the PI identified in the data and ways the PI aimed to modify the interview questions and probes. Early analysis and memos helped direct the PI. The PI's growing understanding of the phenomena of study guided him to follow noticeable issues raised by participants as well as meanings and experiences revealed as important by participants (see Corbin & Strauss, 2015; Charmaz, 2014).

Memo writing

Memos were used as important data collection tools to record PI's observations and self-reflective/self-reflexive thoughts (Charmaz, 2014). Memo writing is a technique that increased the trustworthiness of the collected data as it allowed the PI to describe, analyze, and critique the PI's own beliefs and impressions, in order to reduce biases that might affect the data due to the PI's blind spots or assumptions.

Data Analysis and Synthesis

Data Analysis

In the analysis, the PI worked to understand his interaction with participants as well as the personal and cultural influences on participants. Coding was an emergent process, rather than one that occurred a priori, based on a previously determined structure (Glaser & Srauss, 1967). Transcripts were translated, coded and analyzed using the process of thematic analysis (Braun &

Clarke, 2006). Thematic analysis consists of a six phase as described by Braun and Clarke (2006). The process of thematic analysis helps reflect reality for the participants and acknowledges the ways in which persons make sense of their life experiences.

This thematic analysis was guided by Braun and Clarke's (2006) six step-by-step phases of thematic analysis: 1) familiarizing yourself with your data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, 5) defining and naming themes, and 6) producing the report. Furthermore, the techniques of CGT were used including the development of themes from analysis of data starting with the first interview, which was coded and analyzed before the second interview (Charmaz, 2014).

Step 1: In this step, following Braun and Clarke (2006), I became familiar with the data. To do this, after transcribing and translating the interviews with the participants from Arabic to English, I immersed myself in the data through listening to all voice recordings and reading back and forth and marking ideas in memos. Also, I wrote memos on initial impressions and made notes throughout. After each interview, I engaged in self-reflection by writing reflexive memos of the interviews and methodological memos about the procedure followed, what worked, what did not work so well, what needs to be changed with the next interview, etc.

Step 2: For this step, the interviews were reviewed and initial codes were generated. Each code was a process code (Charmaz, 2014) and it allowed me to examine the data of each interview line by line. The purpose of initial coding was to carefully identify what is going on in the data, comparing data with data, with keen attention to examining each line of text (Charmaz, 2014, p. 343). Therefore, I asked "what's going on?" and "what's happening here?" or "what is he doing?" with each line of text to create initial codes (see Charmaz, 2014). My goal was to be mindful of understanding the speaker's point of view in the moment of the interview and consider the construction of meaning. The codes were derived from all lines of data in the entire data set.

During coding, I identified in-vivo codes; these are actual quotations that condense a great deal of meaning in a short, original phrase stated by the participant, providing insight into specific meanings or experiences, revealing assumptions and imperatives that are often otherwise covered over and inaccessible (Charmaz, 2014). The initial codes were kept open to allow for additional analytic possibilities that were explored in memos. Throughout the initial and in vivo coding of transcripts, I used a constant comparative process to get a stronger sense of the data.

From the time of the first interview and throughout the process of analyzing all interviews, I asked questions when coding the data such as who, when, where, why, how, and with what consequences (Corbin & Strauss, 2015; Charmaz, 2014). Just as with other grounded theory studies, in the early stage of analysis for the current study, coding was mainly descriptive. Then, my analysis moved from tentative themes to actual themes that were identified through the analysis.

Another kind of memos involved analytic memos that were helpful to preserve my ideas throughout data collection and data analysis. They helped track changes of direction in the analytic process and emerging perspectives. Combined with reflexive memos, they provided reflections of the research question and eventually provided information about the research process.

Step 3: Next in step three, the initial codes were organized to develop potential themes. All data that was related to identified potential themes were collected together. Analysis helped me to develop themes. For example, I grouped the initial codes of personal experience of health, social support, cultural and community effects on health, fear, and avoiding knowing about illness. These themes matched the specific aim about T2DM self-management.

After all interview transcripts were coded, tentative themes were identified. Memos were crucial for analysis at this stage (Charmaz, 2014). Since I myself as the researcher was considered to be the instrument of inquiry, my influence on the participant and my experience of the interaction was important. For this reason, I wrote memos. I was aware that I was interacting with study participants within a temporal, cultural and structural context (Charmaz, 2000) and all of these factors were included as having the potential to affect the data that was collected and analyzed. Analytic memos were used to make comparisons of various quotes from the same participant on a specific topic and also from a variety of participants on the same topic; these data were marked with a particular theme. Analytic memos were used as a tool so I could carefully scrutinize quotations under each theme group with specificity to detail.

In the process of developing themes and subthemes, various analytic techniques and strategies were used to identify patterns within the data. These included questioning, making comparisons, thinking about various meanings of a word, waving the red flag, looking and language and others listed by Corbin and Strauss (2015) that was emphasized by Dr. MarySue Heilemann in her special section at the end of chapter 5 about those techniques (Corbin &Strauss, 2015, Chapter 5, p. 102-104). Again, memos were used to document connections across cases that help clarify the experiences of many participants related to the same phenomenon identified in the data.

Step 4: For this step, after consultation with my supervisor, 4 main themes was generated that addressed the study specific aims as each theme was reviewed with the accompanying extracts. I re-read the coded extracts by theme to ensure that a coherent pattern was being formed as relationships between the codes and themes were considered and recognized.

Step 5: For this step, the themes were then reviewed and further analyzed to ensure the correct defining and naming themes. To amplify the stories that each participant told, existing literature in preparation for the final analysis was considered. My overall goal was to tell an analytic story of the data and to give coherence to the overall project (Charmaz, 2014). This was accomplished through deepening levels of analysis and more focused memo-writing about each theme and subtheme. However, each theme was reported using direct statements (quotations) from the participants (Braun & Clarke, 2006).

Step 6: For this step, the final phase of this analysis was to interpret the themes within the context of the literature to produce the discussion section. In addition, for the final report, the results were discussed in relation to their implications for policy, practice, and future research.

Validation and Reliability

Qualitative studies in general have different ways than quantitative studies to ensure validity and reliability of the data collected and analyzed compared to quantitative methods. To ensure rigor, the study addressed trustworthiness through memo writing wherein I engaged in reflexivity to reduce my own biases.

Ethical Considerations

I am enrolled in a PhD program at University of California, Los Angeles (UCLA), School of Nursing, in which qualitative and quantitative courses are designed to enhance knowledge, in addition to guidance and mentorship from highly qualified professors to generate reliable knowledge. The project plan was submitted to the UCLA IRB for sanction, including the semi-structured, open-ended interview guide, recruitment scripts, screening forms, demographic data sheet and general consent forms. A study number was assigned for each consenting participant. Access to any potential identifying information about the participants was saved in a locked cabinet, and was only accessible to the PI. All information was stored in and safely locked, accessible only to the PI and the academic supervisor.

Also, approval was requested from the top management of the secondary level specialized polyclinic, which is considered to be administrative permission as well. The nature of the study was explained, along with participants' rights, the risks and the benefits of the study, and their voluntary participation. Voluntary verbal informed consent was obtained. The contract provided from the PI to the participant included the disclosure of all information related to the study (purpose, right to withdraw, risks, benefits). Verbal consent may was obtained from participants who do not want to give written consent.

Participants were informed of the need for audio-recording of interview sessions, the voluntary nature of participation, and their right to withdraw from the study at any time. Participants were given the opportunity to ask questions about the study. The PI clarified to the participants the extent of their participation. In addition other topics were covered such as confidentiality of the information provided by the participants, absence of anticipated risks, and the lack of any immediate benefits to self from participation in the study, although some subjects might gain insights into healthier lifestyles through participation. Participants were given the option to end the interview when they wanted to in case they required psychological support.

CHAPTER FIVE

RESULTS

The purpose of this chapter is to describe the results of this thematic analysis using grounded techniques including the sample and the findings (themes). As already mentioned, the main aim of the study was to explain, describe, analyze and interpret the experiences and perceptions of health and illness among a sample of Omani men who have T2DM.

Sample

While recruitment was done according to the procedures outlined in chapter 4, the COVID-19 pandemic imposed certain restrictions that posed challenges to the study data collection process. In Oman, the situation of the pandemic forced the government to impose lock down and movement restrictions more than once. In all types of human interactions face masks and two meters (six feet) of physical distancing was mandatory for all. Despite that all mandatory precautions were followed and maintained during the meeting with participants, those precautions made many potential participants hesitant to participate. Therefore, the sample size for the study was re-considered due to the COVID-19 global pandemic.

The study had aimed originally to interview fourteen to seventeen participants but having to collect data during the COVID-19 pandemic made it very difficult. I offered telephone interviews but with little success as the men had no previous experience with research participation by telephone. Zoom was not possible due to their minimal skills with using the technology; in addition, video conference was originally banned in Oman; thus, it was not desirable. According to Braun and Clarke (2006), for thematic analysis research projects, the suggested sample size is between 6-15 participants. Thus, our final sample included 10 participants. See Table 1.

Table1. Demographic Characteristics of Study Participants (N = 10)

Characteristics	**Number**	**Percentage**
Age Range		
20-29	0	0
30-39	1	10
40-49	1	10
50-59	8	80
Employment Status		
Full-time	3	30
Part-time	0	0
Retired	7[1]	70
unemployed	0	0
Marital Status		
Single	0	0
In relationship	0	0
Married	10	100
Separated	0	0
Divorce	0	0
Widow	0	0
Educational Level		
No schooling	1	10
Can read and write	0	0
High school	4	40
Some college	2	20
Bachelor degree	3	30
Higher education	0	0
Others		0
Receiving Treatment		
Private clinic	0	0
Diabetic clinic	6	60
General hospital	4	40
No health services	0	0

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[1] (Many participants were retired from work at the time of data collection because of government restructuring as ordered by the new Sultan early in 2020).

Themes and Subthemes

Analyses led to the identification of four main themes and their subthemes; each pertains to one of the specific aims of the study. Each theme with its subthemes will be described in detail. The four main themes are: a) perceptions and definitions of health, b) factors that facilitate or impede participants’ T2DM self-management, c) personal experiences with healthcare systems, and d) the dynamics between perceptions of health and self-care actions. See Table 2.

Extracts from interviews with the participants have been included as they were said in Arabic and translated into English. As a result, there may be grammatical errors within the extracts which have been left uncorrected to better represent the participants’ own voice.

Table 2. Study themes and subthemes

Specific Aim	**Themes**	**Subthemes**
1) Explore and describe how participants perceive and define health and illness based on their experiences	Perceptions and definitions of health	-Definitions of Overall Health, -Impressions of Mental Health, Stress and Emotions, -Health is a physical health, -Health is something you do, -Health is understood in relation to illness.
2) Explore and describe the factors that facilitate or impede participants’ T2DM self-management	Factors that facilitate and/or impede participants’ T2DM self-management	-Health is a personal experience (my own) -Actual and Expected social support -Lack of positive cultural/ community influences on health -Fear as a motivator and as a stressor -Avoiding knowing about illness
3) Explore and describe factors that facilitate or impede participants in accessing healthcare services;	Personal experiences with healthcare system	-Personal experiences with healthcare system
4) Explore and describe the	The dynamics	-Struggling with craving control

relationship between participants' perceptions of health and their health maintenance	between perceptions of health and self-care actions.	-Rationalization for less health maintenance: ▪ Stress at work ▪ No time to exercise -Health beliefs influence attitudes about health maintenance

Theme 1: Perceptions and Definitions of Health in General

The participants of the study expressed themselves including their thoughts, views and opinions about what health means to them and how this meaning was formulated. This theme has five subthemes that include: Definitions of Overall Health, Health is primarily understood as a physical health, Health is something that you do, and Health is understood in relation to illness and Impressions of Mental Health, Stress and Emotions.

Definitions of Health

When participants were asked after their experience with T2DM to define health, they responded with enthusiasm. Even with their illness and high level of HgA1c, all participants highly regarded health. They described health as "priceless.", "invaluable.", "a blessing." and "treasure and gift." One participant saw health as huge as life itself. When he was asked to define health in his own words; he stated, "Health is life." All appreciated health as a concept with deep rooted meaning and importance for their lives.

Some participants made value judgements about what it meant for someone to lose this precious thing called health. One participant associated the act of losing health (or the loss of part of one's health) as a personal weakness. He stated,

> Health is everything to me. As it was said: A healthy mind is in a healthy body, so if your body is not healthy then your activity becomes weak and your orientation and capabilities are weak. Then everything becomes weak for you.

Health Is Primarily Understood As Being Physical

Our participants spoke about physical symptoms as warning signs that a person is having a malfunctioning or an illness. When participants shared their views on health and what it means to them, physical health was prominent. All participants had expressed one way or another that they saw health from a physical perspective. While they answered questions about mental and social health issues, they focused on health as physical. The men spoke about feeling their body or their strength, implying bodily strength. In the case of diabetes, the symptoms were not acute or severe at the beginning of the men's illness.

One man described embodied feeling after his diagnosis of T2DM saying, "I don't physically feel that there is something wrong with me" and then he added that he wished he had a physical indication that warned him about his illness saying: "… I wish there was a physical indicator that something is wrong." One man related physical abilities to his feeling of being in good physical shape. He also correlated the maintenance of physical ability as "beating" the illness. He said,

> The feeling that physically you still can do things, made me feel and act healthier. If you can beat the effect of illness in your body, then you beat that illness, that's maybe the explanation.

Another man expressed his thoughts regarding illness as a body weakness. He said, "If your body is not healthy, then your activity becomes weak and your orientation and capabilities are weak, then everything becomes weak for you".

The physical component of health was also present in the mind of participant as he gave his account of how one could regain and maintain health. He said, "The first thing I need to pay attention to is sports. Sport is the most important thing".

Health Is Something That You Do

The participants also thought of health as an activity. It is something they need to do. In order to be and feel healthy and to avoid illness, they said they needed to do certain things. Thus, health maintenance practices and activities were important. One participant said: “Health is taking care of yourself before you become ill. Take preventive steps before you catch any disease.” Another man expressed self-blame because of what he did or did not do that led to the diagnosis of diabetes, “Initially I felt like it was my fault that I did not take care enough of myself, I still do but not with the same intensity.”

After being diagnosed, participants reflected on what they had done in the past and tried to remember what they did wrong. They wanted to try to avoid it in the future and wanted to tell others to avoid it. Blaming oneself for the past deeds that resulted in being diagnosed with diabetics was expressed by another participant: “What did I do wrong to get this? I am healthy so maybe they made mistake”.

Even for health maintenance after the diagnosis, the majority of participants had a plan that they wanted to execute in order to regain or maintain their health status and avoid complications. A participant emphasized this by stating: “You must do the necessary steps to retain health and avoid whatever disrupts your health.”

Health Is Understood In Relation To Illness

Because of the dichotomy of health and illness, our participants were unable to see health as a standalone concept; rather they saw health through illness. A participant described it as follows:

> Most people care for their health only after having a health problem or accidents and they have difficulty in going back to normal, they will make efforts and spend money just to go back to normal (health).

From the participants' narratives, we saw that they described health as being taking-for-granted and only started caring about it after their illness was discovered. One man said,

> Health is a blessing that a person does not pay attention to until after he get disease, after diabetes, a person begins to take care of himself to protect himself from injuries such as wounds, and as you know, wounds of diabetics do not heal easily.

Health information about illnesses was more readily available in the present compared to previous times. Nonetheless in addition to sometimes having a family member who was suffering from the illness, a participant expressed his concerns about his own health and his eagerness and willingness to know about the illness only after he was diagnosed:

> Certainly before the diagnosis of diabetes, I was not interested in the issue of diabetes, I was not suffering from it, but after knowing that I have the illness I read and I became aware of the symptoms of diabetes and the causes and methods of prevention and how to control it.

Some participants shared how gratitude towards health was absent. One man generalized about how it was only after actually living with illness that some people would care for their health. He said, "I think some people who have not lived with these diseases do not care much about health". Another man was describing how others who are in a healthier state are not able to feel the ordeal of a chronic illness

> If you're in a healthy state, you will feel that things are always good, and only the one who suffer from pain can feel it. When you see a patient in pain while you are healthy, you will not feel his illness.

Impressions of Mental Health, Stress and Emotions

Participants often shared that their definition of health included having a "healthy mind". As one participant said, "Health is related to everybody. To me, health is to be fit mentally and physically." Mental health was described as an important aspect of health. However, it was not as obvious as physical health, which was echoed in many statements from the participants when asked about mental health. One participant linked mental health to physical comfort, as he stated,

> Mental health is when a person is fit and fine and never thinks about anything because his body is fine, and if the patient is worried about many things, he will be psychologically uncomfortable.

While discussing mental health, participants sometimes revealed their beliefs on how stress influences mental or physical health. Several participants believed that stress leads to mental illness. One man said,

> With regard to mental health, it is due to stress, so you should leave negative thoughts aside and look at life in a positive (way) and move away from words, gossip and assumptions.

Another participant shared his thoughts about how stress was the reason for his irregular blood sugar level. He stated that “sometimes excessive thinking causes an increase or decrease in sugar levels, as well as anger and nervousness.” This point of view was supported by another participant who stated: “…. so I think sleep has an effect on blood sugar and thinking (stress) and one should not be hungry for a long time”. These participants felt that they knew how stress affected their overall health.

The Arabic word “Tafkeer” was used by participants; it literally means “thinking in English.” This phrase with its original meaning of thinking is also used in Oman to refer to being in a state of anxiety or stress. However, many participants in this sample referred to the presence of stress and “tafkeer” as synonymous with mental health issues.

Theme 2: Factors That Facilitate and/or Impede T2DM Self-Management

Theme 2 had five subthemes. These include: Health is a personal experience (my own); Actual and expected social support; Lack of positive cultural/community influences on health; Fear as a motivator and as a stressor; and Avoiding knowing about illness.

Health Is a Personal Experience (My Own)

The impact of our participants' personal experiences of health was vital to understanding their viewpoint. Their personal experiences influenced how they perceived health, and accordingly, built certain attitudes towards it. The participants were aware that there were differences between their experiences and those of others. One participant emphasized this viewpoint when he narrated that: "No, I didn't compare my life with another diabetic person, I think every person have his environment, his circumstances, his level and personal life, so I don't compare." He went on further to dispute the generalizability of benefits that various treatments and services could give and that personal experience differ from one person to another by saying "But this is according to his personal experience and illness, the timing and the quantity, any person if you ask want to be healthy".

Another man was asked how he thought other people saw health. He indicated individualism was a justification for the differences in health practices that people tend to follow or tend to abide by:

> Every person, of course, according to his own views and life experience. I expect people, especially those who are not sick, to take the matter seriously. Especially when I see many people at fast food places, this indicates that people are still unaware of the value of health.

Men tended to hide their weaknesses especially when they were the providers for the family. One man conveyed his unwillingness to tell others about his illness. He considered that his illness was his own experience. He justified this as a matter of protecting his family from worrying about his condition by not telling them about his illness.

> No, I didn't want to tell them about the diabetes, but I told them that I only had a headache. This is my illness, no need for them to worry about me.

He added by articulating that he believed that illness (suffering) is a personal experience that should not be shared:

> There is a proverb that says that the fire does not burn other than the one on fire, meaning that pain is felt only by the sick person himself. If I feel pain, and my wife is sleeping, even if I tell them, what can they do?

One participant shared his understanding that other people might be too busy to give support due to their commitments and responsibilities with their personal life.

> This (support) is up to the person himself, it is not always happens because everyone is busy with his own life, and no one think about the sick person except for people close to him who take care of his food, medications and so on.

Actual and expected social support

The need for social support during the course of their illness was identified by many of the participants and quickly emerged from early stages as a subtheme; it was a factor that facilitated or impeded participants' T2DM self-management. Many participants expressed the importance of social support. They were receiving social support according to their expectations. Some recognized their own failings and emphasized how supportive their families were. One man said, "I had good support, I sometimes disappoint myself in controlling my diabetes, but not my family and friends. They are always there for me".

This subtheme included comments that identified the need for help or some kind of assistance to get training, guidance, information, and/or resources. When asked about social support he received, one man replied; "It's almost non-existent, it's only me who knows what to do." He also added: "There is nobody caring about it (my health); only the person will take care of himself". He further stressed the need for social support from different levels when he said: "Individuals, healthcare institutions and society all are not offering the expected support". This was also supported by another participant who said:” This is up to the person himself, it (support) does not always happen because everyone is busy with his own life…”

Other participants also expressed the importance of social support. However, they were receiving social support according to their expectations. One man said, “I had good support, I sometimes disappoint myself in controlling my diabetes, but not my family and friends. They are always there for me”.

Lack of Positive Cultural or Community Influences on Health

The health of our participants was affected by cultural systems and community practices, which included assumptions on how mosques and schools played a role in their lives. The influences of culture included daily activities on how they took care of themselves. This played a major role in their perception of life, death, health and illness. Input from our sample shed some light on the effect of communities (from family to school) on their thoughts about the status quo. A participant shared his thoughts about the effect of culture explaining his view on what the situation was like during his childhood:

> I think every culture has its own way on how individuals care for themselves, it depends on how people lived and their economic status and availability of knowledge, but during my childhood, Oman was not rich and the number of people who were educated was very few.

The participants talked about education as a part of the culture in Oman and how it could enhance their knowledge and affect their beliefs, which in turn could lead to better and more healthy lifestyles. Like the man quoted above, another man spoke about his childhood in the seventies and eighties, and admitted that during those days, Oman had fewer educated people. He said: “The level of education at that time was very low, but even so, people used to give us some advice”. His comment shows that he realized the advice he received in the past was from people who had not received formal education although they were culturally Omani and therefore influential in his life.

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For the men in our sample, school did not play a major role in forming the importance of health and illness when they were children and adolescents. One participant voiced that health issues were not much of a priority in schools while growing up. Rather, he believed it was the family's responsibility to teach their children about health and caring for oneself.

> As with school, it was not considered as an important thing to be learning about heath and the school nurse was only dealing with emergency cases. This (learning about health) was a home responsibility.

Another participant echoed the role of school with little emphasis on health issues. He remembered that no specific teaching related to health was given to him: "At that time there was no role for the schools, except for a few topics in textbooks, but no one gave lectures or information on health".

The nature and formation of families in Oman historically has been mostly focused on extended families with many children. The resources to care for all in a large family affects issues related to health and well-being early in life. One man succinctly said:

When you are raised in a big family, the least thing you can think of is your health. All you think of is how to survive and proof that you exist.

As our participants grew older, they realized they had more social commitments and responsibilities. Some did not have the ability to manage their time to have better self-care or engage in exercise. One man attributed his inability to care for himself to the increase in his social responsibilities. He commented: "But then after marriage with responsibilities and social commitments, slowly, slowly, I withdrew from sport until I totally stopped".

In Oman, despite the unavailability of health education and the lesser role of schools on health issues, the situation for our sample improved over the years. This had potential to help some come to a healthier lifestyle. A participant commented:

> Unfortunately in the beginning, no, in the seventies when we went to schools, this was not available, but after we reached the preparatory and secondary stages, health information was available; there even was a health supervisor in all schools. They used to give us malaria medicines, for example. This happened later, but in the beginning of the school there was no such thing.

Fear As a Motivator and As a Stressor

The emotion of fear was mentioned during the interviews with the participants. A participant articulated avoidance due to fear by saying: “People don’t like fear, they want to be happy. If you calculate all your movements, you will not able to live as happy as you could”.

Another participant commented about his feeling before going to surgery: “To tell the truth, I was afraid. Not knowing what is going to happen to me, nor knowing how to react.” During the 2020 Coronavirus pandemic, people became stressed and were forced to deal with fear about threats to health. When people knew the steps to protect themselves, fear became more manageable. Fear also became a motivator to protect oneself and others even when others were less understanding or aware of the dangers. One man said: “…and now the spread of the (Corona) virus, there is fear about going out. You might be committed and wearing a mask, but others, you can’t control them.”

Chronic illnesses like diabetes could become a chronic stress for the men especially if not treated and managed well. One of the difficulties specific to diabetes mellitus was the complications that they could not see. This was described by a participant who referred to hidden symptoms including his blood glucose levels. He claimed that since he could not feel his symptoms in his body, “because of its hidden symptoms, now I am obsessed with my sugar level reading so that I can act accordingly”.

The participants, like many other people with diabetes, were fearful about some aspect of their condition. Due to a high level of fear about complications from diabetes, having a high blood sugar level was more than terrifying to them. Sometimes fear helped the men change their lifestyle to adapt to the changes, as one man said: “Yes they (their lifestyle) changed, I mean, one is afraid that he may have complications.” The fear of diabetes complications was somewhat overwhelming for some men in our sample and it affected other aspects of their bodily needs and their own life. One man described his extreme fear-based feelings and how it infringed on his activities of daily living. He said: “I was afraid. I was afraid that it (surgery) would cause complications and so on. For a whole month I couldn't eat anything but liquids…” Another participant described his experience in a healthcare setting and specifically noted that it provoked his fear: “But in the hospital I was scared because every time they say you had such-and-such, especially that my father died of diabetes, and I felt afraid”.

Avoiding Knowing About Illness

More health information exposure might have led to better management of symptoms. Unfortunately, however, some of the men in our sample avoided knowing more about their illness. Various reasons were brought forward by the study participants, especially before the diagnosis of T2DM. Several participants mentioned that they delayed information seeking because they were confident they were healthy at the time. They felt they would deal with it as it came. One man said, “I didn’t feel that there is a need for me to know more, I was healthy.”

Some participants thought that illness was eventually going to happen. So they delayed and avoided knowing any necessary information that might help in prevention or might delay the effects of T2DM:

> I didn’t actually care, I thought that this is part of life and whatever happens I should accept it as it comes (as a fate from Allah), maybe it is because of deficiency in knowledge before, but eventually it is fate.

Another man felt that because one of his close relatives was able control his illness, he would be able to control T2DM as well. His personal experience of his father made him decide not to seek more information when he was healthier:

> No, my father was active and always was in control of sugar and he was disciplined with his appointments, and we used to bring him a nurse at home. So I didn’t feel that I need to know more, because it was controllable and I didn’t want to live my life in fear. When it will come, it will come.

Another participant shared a similar story of his mother and other relatives who were diabetic. Despite knowing this, he decided not to seek health information related to diabetes or to try to prevent it from happening to him. He assumed that being at a younger age protected him from getting the disease:

> In fact, my knowledge of my mother’s diabetes was late. She had been treated for diabetes, but I had no knowledge of it. I discovered that she was diabetic, and my uncle was diabetic too, and my mother’s maternal uncle was diabetic too. I didn’t take it seriously and thought that only elders can be diabetic.

Another man commented on his own behavior of not seeking necessary health information as a way to enjoy life as he has only one to live. He said, “Some think that since I am living only one life, so let me enjoy it to the maximum”.

Theme 3: Personal Experiences with the Healthcare System

Theme 3 has no subthemes. Healthcare institutions were often linked with bad memories of either the loss of loved ones or feeling discomfort or pain. In addition, because of the busy nature of healthcare facilities and the use of specialized language among its workers, hospitals were uncomfortable environments that the men sought to avoid. One man said: “Never, I don’t like hospitals, (I) can’t imagine spending time there other than seeing a doctor in a clinic and leaving with my medicine. Other than that, no.”

One man remembered a negative event with a physician who diagnosed him even after more than a year since that event. He described his experience and the physician using these words “… shock and (the) numbness and the way the news (of being diagnosed with diabetes) was broken to me by an unsympathetic doctor.” The participants implied that effective communication was a vital component of healthcare services, and cited examples of poor, ineffective communication style.

There were some demands that were raised by the participants pertaining to healthcare services and communication in general. Some had minor observations while others demanded a better way to offer services. One participant noted what was lacking in health care delivery and education. He wanted to receive actual teaching about health, phone calls and tips on how he would be able to take care of himself. He said, “No nothing is available to me, it’s not available. I think that this is the responsibility of” the health care system and the providers. He also thought coordination was needed “to arrange these kind of courses and call patients to attend and tell us what is happening, how to control sugar and other stuff that will benefit us.”

Theme 4: The Dynamics between Perceptions of Health and Self-Care Actions

Theme 4 has three subthemes. These include: Struggling with craving control, Health beliefs influenced attitudes and rationalization for less health maintenance that include stress at work, and No time to exercise. The participants knew that they had a responsibility to maintain their health and that attending appointments was one of the manifestations of that responsibility, but with that responsibility, they faced some challenges. One of those challenges was controlling their craving for sweet food.

Struggling with Craving Control

The majority of participants shared their experiences with a phenomenon in diabetic illness known as diabetic hunger and sugar craving. Despite their knowledge of the food that might spike their level of glucose in their blood, the danger of unbalanced and uncontrolled levels of blood glucose, and the importance of dieting, one participant said that he struggled with sweets. He said he could not resist his desire saying, "sometimes when I eat sugary foods, because I am unable to resist, I blame myself when I see the high blood sugar reading on the machine."

Sometimes it was inevitable that the men could not control their craving. But after they satisfied their craving, what they could do depended on what strategy they were able to execute. With awareness about how to compensate, one participant explained that when he was unable to resist, he would compensate by engaging in more physical exercise. He said: "But from time to time, I find it very difficult to control my diet, so I eat what I want and then try to compensate it by doing more exercises".

On the other hand, others developed anger toward themselves because of their inability to control such craving.

> I think some people can become angry and some people like freedom and cannot control themselves; they cannot abide by the instructions and do not like discipline. For example, there is food they like; they will eat without having boundaries.

As diabetic patients, the participants showed in their interview that they were informed about the harm of raising blood sugar that is associated with eating food containing high amounts of sugar. Because of this knowledge, they tried their best to control their craving. But sometimes they relapsed and could not control themselves. This happened when they ate food in which the quality and/or quantity was not suitable for their current level of lifestyle and illness. When their body alarm indicated to them that they might be in a dangerous state, they stopped and started to reflect on it. One man said,

> I think that this illness is a mystery, you have a lot of things under control, and then suddenly, you covet something and then you don't stop until you get a symptom or complication, then you take a break and reflect.

Picnics and social gatherings were examples where peer pressure compelled the diabetic men to eat what others were eating. Two men from the sample discussed this. One man gave-in to eating food, saying: "I eat anything and on picnics I eat the same food (that others are eating)." The other man was more cognizant of what he should do during such events. He said that he tried to eat less but was not always successful: "I go with them, and I eat what they eat. I try to eat less, but not always".

Justification for Less Health Maintenance:

The men in the study knew that effective health maintenance would support them on their journey with the goal of preventing or delaying various diabetic complications. They admitted that some parts of their life had changed to accommodate the challenges posed by the illness. Coping and stress management were skills that participants could learn and execute. There were two rationales used by some study participants to justify their uncontrolled high blood sugar levels, namely stress at work and having no time to exercise.

Stress at Work

In Oman, it is acceptable for government employees to seek a change of duties based on health issues. There is an expectation that employees will get support from their employers which happens on many occasions. One man, however, opened up about the stress he experienced at work. He was complaining that he received no support from his employer and that this added more stress to the existing stress he felt from diabetes.

> But there was no special consideration given to me although my work was a field technician, which requires me to be on the site and under the sun, this matter will lead to an increase in the person's pressure, especially the diabetic patient.

Others had similar complaints. Another man described his thoughts regarding his occupation and work life. He believed that stress from his job was one of the reasons he had diabetes. He said, "For sure, one of the reasons that I think I have diabetes is work stress."

No Time to Exercise

All participants said they were informed about the importance of physical exercise. They were encouraged to exercise regularly to reduce the risk of cardiovascular diseases and to have better control of blood sugar levels. Despite the possession of basic and necessary knowledge and awareness of the importance of regular physical exercise, some participants shared their reasons for their inability to exercise regularly. Some men reported that they could not exercise due to work commitments. One man said "the second thing is sports. For me, I did not find time to do sports because of work." Another man also explained during the interview that he could not find time to do physical exercises: "I didn't have time, there is always something,"

The effect of the coronavirus pandemic, the complete and partial lockdown, and the closure of many facilities including training centers and gyms that happened in 2020 in Oman prevented some men from their regular training and exercises. One participant voiced his concern by saying:

> In the past I used to go to the sport club (gym) and go out and I was in control of sugar, but at the time of the pandemic I have less physical movement.

For some men, planning for the future might have been a means to rationalize the inability to participate in diabetic management strategies including exercise. One participant was planning to retire from work in the future and talked about how it would change his lifestyle to have a better control of his time and to get more physical exercise. He said,

> Especially walking which I stopped more than 7 months ago, I bought a bicycle and I will go back to sport. I have decided that during the near future I will retire and to go back to sport, walking after fajer prayers because after one will be busy.

Culture Influenced Health Beliefs and Attitudes about Health Maintenance

The health beliefs of the men influenced their health behaviors. The participants expressed beliefs that were very important for their lifestyle modification and diabetic self-management. These beliefs, both positive and negative, were often developed at a younger age when they, as youngsters, adapted to the norms of the community. They were influenced by lifestyle and thus, were somewhat cultural in nature. One participant looked at current attitudes and implied his current illness was the result of his lifestyle during his younger years. He said, “Anything you do during your youth, you will pay for it when you get old.”

Study participants lived in a more conservative society where understanding proper religious beliefs was important to understanding the attitudes of its members. One participant reported a more passive approach to his illness, having adopted a more religious personal conviction that illness is part of life and that it is fate determined by Allah. This came from his understanding of the religion of Islam. He said, “I thought that this (illness) is part of life and whatever happens I should accept it as it comes” (as fate from Allah).

Our sample, like most men in Oman, tended to be more self-sufficient so they disliked asking for help despite their need for it. One participant explained that his help-seeking attitude could make him, as a man, look weak. He explained:

> It is difficult for me to need people. It is not from diabetes itself, but you feel yourself weak and broken when you have a job or requirements, so I have to need someone, whether he is close, like my brother or my son, or not close and I say: “Offer me a service.” This is just what is difficult for me.

The phrase, “A person is a doctor of himself,” was repeated by some participants. This reflected a perception of an independent self-efficiency. In keeping with this sentiment, some of the men described using different kinds of medicine, alternative medicine, or traditional medicine recipes without clinical supervision. Rather than from medical providers, they received oversight form a neighbor or friend.

Some participants explained their beliefs about diabetes and its effect on health and life. After having the illness for some years, men agreed that life is possible with a chronic disease like diabetes. One explained that you can become friends with diabetes, “Diabetes is a disease which deprives you of many things and forces you to do many things, and you must befriend it forever.” Another man explained that earlier, he thought the effect of diabetes on his life might be radical and devastating, but through living with it, he learned that it was something that he could control. He could live with it. He said, “I thought it could affect my life drastically, but afterwards I adapted to it and took care of myself.”

Summary of the Results

During all interviews, the participants described different aspects of their experiences of health. Participants expressed their views about health and how they thought about it from their perspectives. Their replies to the interview questions indicated that, when seeking to understand how the men formed understandings of health concepts, many factors need to be taken into consideration. Many thoughts and feelings were introduced that helped in shaping the four themes and their subthemes. Despite the difficulties that they faced in managing their diabetes, the results showed a consensus on the importance of health and maintaining health status. The meaning, interpretation, and implications of these experiences for the men’s perception of health will be discussed in the discussion chapter.

CHAPTER SIX

DISCUSSION

The themes from this analysis shed light on the priorities and perspectives of our sample of ten Omani men with relatively uncontrolled T2DM. The study inclusion criteria required having high HgA1c. Thus, our understandings of their perceptions of health needs are within the context of the indicators of uncontrolled levels of blood sugar. Therefore, each theme holds insight that can be applied to future solutions specifically for men in this situation.

Perceptions and Definitions of Health

The men of our study shared information about their lives and their perceptions, which influenced how they interpreted and understood T2DM. Perceptions varied for our sample, likely because they all had different personalities and different life experiences. But all participants perceived health to be important. All voiced their understanding of the importance of health in their life by using their own definitions of health. Nonetheless, there were gaps between their understanding of the importance of health and their behaviors toward maintaining and restoring an acceptable level of health. This is consequential because their situation and behaviors resulted in having high A1c levels. Thus, the gap between their understanding and their behaviors is where we need to focus.

Despite having a definition of health that included physical, mental and social aspects, many participants primarily viewed health as physical. That might be because of the nature of their illness and how it affected their physical abilities, which made them more concerned about their physicality. This was indicated in their replies about seeing health in relation to illness.

In addition, the medical model of health services focuses mainly on the biomedical attributes of illnesses and symptom management. This may have led the men in our sample to put more emphasis on physical health. The mentioning of mental health and social health seems to be hidden in their replies. Overall, although the religion of Islam as practiced in Oman addresses the importance of mental health and considers it to be an important aspect of well-being, mental health as a modern concept is relatively new in Oman. As already noted, the Arabic word “Tafkeer” which literally means “thinking in English” also happens to be used in Oman along with its original meaning of thinking, it is also used to refer to being in a state of anxiety or stress. Within the context of the interviews, many participants used the word “tafkeer” as an indication of being anxious or stressed and as a reference of having mental health issues. Mental health appeared in the form of complaints that they were too stressed much of the time. The participants did not refer directly to anxiety or depression. It seemed that mental health was a difficult concept for them to explain. For social health, their social relationships with other people, the men criticized schools, their workplaces, and other parts of the community for not providing social support to the level of their expectation. Other than criticizing and verbalizing complaints, it appeared that the men were unable to convey their thoughts about mental health and social health.

Symbolic Interactionism (SI) holds that people develop shared meanings through ongoing interactions with their environment (Blumer, 1969). For the men of our study, shared meanings of health and illness were likely influenced by interactions between them and other people, social and professional systems, and their own reflections on their life experiences and events in their environments. Thus, some men might have attached positive labels to their experiences while other might have attached negative labels. Because of culture, religion and social systems in Oman, our sample shared that health was considered to be sacred. Indeed, that is how the Omani men in our sample intellectually and psychologically approached it. However, there were other factors that interfered with the consistency and the harmony between their interpretation of health as a concept and their actions as health maintenance behaviors. We can surmise that those factors contributed to the unwelcomed results of their high A1c levels.

Factors Related To T2DM Self –Management

With diabetes, changes in blood sugar can cause changes in mood, causing fatigue, unclear thinking and anxiety. Diabetes also can cause diabetes distress which is has been proposed to have some characteristics of stress, depression and anxiety. This work has demonstrated empirically a direct link between physical health and mental health. In addition, researchers have purported a direct link between mental health and social health in that the social determinants of health have been shown to influence individuals with type 2 diabetes (Walker et. al, 2014).

Diabetes is a chronic illness in which patients carry a high level of personal responsibility for daily self-management of their treatment plan (Glasgow & Anderson, 1999). Health care providers may expect a person who was diagnosed with this illness to fully understand what was needed to be done to maintain acceptable health status. However, the participants of the current study were diagnosed with T2DM at least one year prior to their interview, and they expressed challenges that directly or indirectly affected their plan to self-manage their diabetes. This included factors related to mental health and social health. The mental health factors were related to oneself and it included thinking of health as a personal experience, feeling fear, and engaging in behaviors to avoid knowing about the illness. Other consequential factors were related to manifestations of social health, social support or the lack of it, and cultural or community influences on health.

As has been found by other researchers (Becker & McCall, 1993), our participants' interactions with others played a major role in how their behaviors were modified. It was through social interactions that the men of our sample imagined the role of others (Blumer, 1969) and how they felt or thought about T2DM. Theorists have found that people learn from others and modify their own behaviors, which lead to behavior change (Bandura, 1991; Skinner, 1953). Similarly, our results emphasize the importance of social and mental health in the management of chronic illnesses like T2DM for our sample. It was through behavioral changes and modification that the men spoke about wanting to be able to better control the illness and change their lifestyles.

Men in Oman usually take the role of the head of the family which not only includes the power of decision but also the work of being the overall provider. With that role certain characteristics must be exhibited namely being strong, dependable and masculine. This has been described in social psychology and explains how individuals who occupy particular social positions or roles in certain societies have a set of rights, duties, expectations, and behaviors that are expected from them (Hindin, 2007). This is helpful to understand the men in our sample. For men in Oman, illness is considered a sign of weakness and men will try to hide that weakness by denying the existence of the illness or its effects. This might lead to more physical, psychological and social complications.

Liu (2017) found that the perception of stigma with type 2 diabetes was often associated with uncontrolled diabetes (i.e., higher A1c levels) and higher visibility of the disease. Our participants denied the concept of stigma, likely due to their role as the head of the family and fear of the stigma attached to chronic illnesses like diabetes. This all might be because of their unwillingness to show signs of weaknesses to their families and to others. In addition, they may wish to avoid losing any power that comes with their role, thus they claimed that the illness was their own and others did not need to know about it.

Experiences with Healthcare System

Patient satisfaction and experiences are focal concerns of healthcare systems as they are indicative of healthcare quality that may bring about success in reaching the expected outcomes of medical care. For the men of our study, experiences related to following or failing to follow the agreed treatment protocol and plan, was important in strengthening treatment compliance. They spoke of how they learned that they had a life-changing chronic illness. For some, it was without a doubt a major event that needed to be handled tactfully. However, the men spoke about how poor communication resulted in negative feelings. This could be dangerous as it could lead to misinterpretations about medications and consequently could affect the compliance of follow up instructions, which could lead to poor health outcomes and even readmissions with severe complications.

Healthcare services complexity is a challenge on the rise because of the nature and dynamics in the relationships between healthcare industry and its customers (patients). Our sample spoke of unmet expectations, complaints that were not previously heard, and suggestions that were ignored. Any of these might also have led to less compliance for our participants. Patients' demands are for health and health care as basic rights that need to be respected in order to build up relationships between patient and healthcare institutions.

Our findings are supported by those of a qualitative study that was conducted in Oman by Abdulhadi and colleagues (2007). Their aim was to explore the perceptions of T2DM patients regarding medical encounters and the quality of interactions of patients with their primary health-care providers. Their results showed many areas that need careful attention to deliver better quality of care that could lead to better health outcomes. Those areas these patients experienced that need modification included providing an unfriendly welcome, interrupted privacy during consultation, poor attention and eye contact, lack of encouragement of patients to ask questions of providers, and inability of patients to participate in medical dialogue or express concerns (Abdulhadi et al, 2007). Another study indicated that patients were verbally interrupted by a provider after only eleven seconds of talking (Phillips et al, 2019); this is also another indication that healthcare providers need to revise how they communicate with their patients in order to encourage dialogue.

It is through social understanding and shared meanings (Blumer, 1969), that people learn to trust each other. We can extend this theory to patients who do or do not develop trust of healthcare providers. It is common for patients in Oman to consider healthcare providers to be capable of offering assistance and support in times of need. Such trust is conveyed through interaction with different providers who patients have interacted with. However, when the healthcare providers fail them or care less about them, new meanings are developed. As the men in our sample demonstrated, the failure of providers to help was interpreted as carelessness from the health care system about their health. This could have contributed to treatment noncompliance for our sample, and if left unchecked, could also lead to future illness complications.

Dynamics between Perception of Health and Self-Care

Once a patient is diagnosed with a chronic illness, all consequent actions are health maintenance activities or the lack thereof. These activities are not as easy as one might think. They involve challenges that some patients are not up to or they may require resources to execute, without which, success is not possible. The men in our sample had strong beliefs, challenges with old habits (craving), and difficulty in adopting new habits. The dynamics of discarding old habits and adopting new habits was somehow guided by health beliefs. However, the dynamics were also influenced by the participant's personal resilience and determination.

The consumption of sweets has an effect on mood as many people resort to eating sweets when they feel low. For people in general, some foods like ice-cream and chocolate actually help them elevate their mood. For the men of our sample, ice-cream and chocolate in particular were sweets that reminded them of happy events of their childhood. Those memories may have an effect on a person craving for more sweets, especially during a low mood. But, these types of food are not recommended for diabetic patients, which make for a difficult challenge when they see other people having these treats.

The men in our sample spoke about picnics and social events when they would struggle with which foods they ate. Faced with this challenge, some gave themselves an excuse to get away with actions that were not congruent with their treatment plans. With those excuses, they might have felt that they were in better control of their choices, but unfortunately the consumption of these sweets were harmful to them in the long run.

Some men in our sample knew that developing and adopting new habits would require some determination and appropriate support to succeed. The success and failure of our participants to control their illness and its complications was experienced alone for the most part. However, some men shared that it should not be solely their responsibility alone. The wisdom of some participants clarified that healthcare providers needed to take action. Indeed, there is a need for assessment and reassessment of patients so health care providers can determine how they can better help each patient to succeed in having good control of their health, strategies for reducing the symptoms of their chronic illness, and overall, a healthier life.

Implications for Practice

Our study results provide deeper understanding of how this sample of men understood health. From their discussion of their behaviors, our study shows that they needed more help to close the gap between their understanding of T2DM, their feelings about it, and their behaviors to control it. Our results have the potential of alerting health care providers to the complexity and the stress that men in Oman have to face in dealing with chronic illnesses like T2DM. The stresses they face were exacerbated by their fears of complications and blood sugar readings, their inability to get professional support when they needed it, and the social stresses they experienced from employers at their workplaces, others in their communities, and family members who did not understand them or their situation.

Healthcare providers are faced with dealing with diabetic patients with HgA1c levels above the acceptable rate. However, knowing how those patients confront the psychological battle including their fears, stresses and needs for social and professional support can make a difference. These psychological battles are the mechanisms that patients resort to when attempting to deal with their illness challenges. Insight into the kinds of battles they faced could create better understanding about how to assist them in overcoming challenges. In addition to overcoming fear, an important factor affecting self-management (Al-Rahbi & Alghenaimi, 2017) and stress, Omani men need to overcome the social pressure to hold back from sharing their suffering with others. The role that physicians and nurses can play to help Omani men share their symptoms and get help might help prevent or delay diabetic complications.

Self-reflection about health and illness might be very beneficial for Omani men who are diagnosed with chronic illnesses like T2DM, however, they will likely need to be given encouragement to do so. Thus, providers need to value patients’ self-reflection as necessary and beneficial action. This process could allow men to think about their predicament more holistically. It might also help in making patients more resilient to overcome their health challenges. Nurses can help diabetic patients increase their understanding of their own challenges through self-reflection about their illness and the appropriate health behaviors to engage in. Nursing efforts might also involve forming, organizing and encouraging men who are diabetic patients to meet in confidential support groups where they can share their experiences and how they overcome their challenges. Such groups could also be offered as either online or in-person programs, such as online forums, webinars, or monthly peer support meetups. These could be offered throughout Oman particularly where specialized diabetes services are provided. Nurses could serve as moderators and facilitators of such groups. They could share articles and fact sheets with participants. During the current pandemic, these services could be also provided as a smartphone application ("app") through which patients could chat and seek information from professional specialized healthcare providers. Nurses from various clinics could team up with the Oman Diabetic Association (https://omandiabetes.org/?lang=en) which could take a leading role in establishing these services for patients and for healthcare providers.

A comprehensive T2DM assessment tool could be developed to bring a stronger understanding of each patient's challenges. It might not be enough for healthcare providers to stop after taking a medical history, especially one that was documented long ago. Rather, a comprehensive assessment that includes a psychological and social assessment, tailored to include concerns like those raised by the men in this study, holds promise to help both patients and healthcare providers to better determine what is needed to be done. Such a comprehensive tool could be developed through future additional qualitative inquiry, perhaps with focus groups and a larger sample (for example, a sample of 40 to 60 participants). Subsequently, survey research that is informed by this study and the focus group findings could be conducted with an even larger sample (for example 200-300 participants. The results could inform the development of careplans, education programs, and support groups. In this way, work can continue with regular assessments for efficiency and subsequent amendments made based on scientific evidence.

A broader focus would be to look at the community and community-level analyses as part of public health responsibility. Based on the results of this dissertation and on other scientific evidences produced in Oman and neighboring countries regarding health, further efforts need to be carried out to change the status quo. Focus groups with healthcare providers would bring even more perspectives on the situation for men with T2DM. Health care providers could be convened to examine the results of the survey with patients (mentioned above) and the focus groups. From this, an assessment tool could be developed. This would be a product of collaboration among a multidisciplinary team. The goal would be to help assist patients on how they might change their lifestyle to better cope with and control symptoms of diabetes.

All these efforts will provide a foundation for developing comprehensive health policies across Oman that include health prevention programs, health acts, and other supportive resources for patients that could help people be more informed on how they could have better health status and enhanced control of chronic illnesses.

In 2012 the national diabetes mellitus management guidelines were launched in Oman (Ministry of Health, 2012). The contributors to the guidelines were physicians and podiatrists without the involvement of nurses. The guidelines neglected to address the mental and social health of diabetic patients as it only concentrated on physical health emphasizing the biomedical model of healthcare system. The leadership and teamwork offered by nursing in the effort described here would be a positive step towards a multidisciplinary approach to care nationwide.

Health maintenance requires resources that are accessible. Health information should be readily available to all health care providers who want to share it and to all patients who require it. Exercise is key to controlling symptoms of T2DM and it was a priority for the men in our sample. It was noted to be desirable and acceptable to them. This presents a fortuitous opportunity. Therefore, places where men can engage in physical exercise are needed in every neighborhood in the entire country of Oman. Indeed, well rounded, evidence informed health maintenance programs in Oman that are open to the public are needed. Oman’s weather is humid and hot most of the year. Thus, people may give themselves an excuse to avoid engaging in any sort of sport or physical exercise. Therefore, allocating the proper environment to encourage physical exercise should be with air conditioning. The more organized, accessible and comfortable the health site is, the more it will become a welcoming environment that will open the possibility for many to make physical exercise a habit. As our results showed, the majority of participants engaged in sports during their youth, so what is needed is for this to be marketed to adults.

Social interactions can enhance good health through a positive influence on people’s living habits. Thus, sites for physical exercise will not only affect physical health, but social health as well. Here, people can meet and chat. So it is possible that mental health could be enhanced in the very place where physical health is being enhanced. A boost in confidence in their physical health holds promise for also boosting their mental health.

From that perspective, community exercise centers should not be seen as single function areas, but rather multi-function places where people can do more than just physical exercises.

Every neighborhood could have a designated place where people can engage in physical exercises, including playgrounds for children, therapeutic gardens for people of all ages, spaces for group games including fields and resting places. The inclusion of other activities could lead to people making more efforts to develop healthy habits and not to look at exercise as a form of therapy that they force themselves to do. Furthermore, information on health could be available at these sites as well.

The role of schools and mosques in health and health maintenance should be revisited to enhance more positive involvement. The World Health Organization considers schools to be an ideal setting where health knowledge and healthy habits can be instilled in children as they spend a significant amount of time there. This knowledge and these habits could grow with them and continue to affect their lifestyle in the community through their adulthood. This could make schools very influential in facilitating positive changes pertaining to health, illness prevention and health maintenance behaviors among the old and young alike.

The religion of Islam places high value on people maintaining their own health. Health is considered a responsibility of each person in Islamic teachings as there are many accounts of how the Prophet Muhammad ﷺ encouraged physical activities and taught children about it. Because Oman is a conservative Muslim society, mosques also could have a role in enforcing positive health habits through disseminating the importance of maintaining health from the perspective of the teachings of Islam. Our participants were from an age group of people who make regular visits to mosques (5 times a day). Some mosques currently offer lectures after prayers, which makes the mosque a perfect place to strengthen positive health habits and reinforce the importance of health. It could also be a place to build up the health habits of adults that were instilled during their schooling years of their youth.

Health is not solely a responsibility of healthcare settings. Health and positive teaching about health should be practiced and maintained everywhere in order to make the most sizable impact of people’s lives. Teaching in healthcare settings that occurs between health practitioners and patients is a form of communication. Effective and humane communication between healthcare providers and patients and their significant others is vital to improving knowledge and attitudes towards health and health practices. The need for human centered, concise, effective communication is always present in health service systems. Treating patients with respect, dignity and privacy creates a trusting relationship that will likely lead to having better compliance to treatment plans.

The involvement of other government and private organizations, sites of teaching, and social settings could help strengthen the health of communities while reducing the burden of illness for people, young and old. Communities (or their representatives) must play essential roles in decision making for the health of the general public and for improving health practices. That includes raising awareness regarding dietary intake and the importance of sports. It also involves having sports in assigned locations. Healthcare providers including dieticians and nurses could help in educating people regarding proper diets or nutrition and could provide advice to the general public about the foods they are buying from grocery stores and markets.

Future research could be directed towards studying health from patients’ perspectives including not only qualitative but also with quantitative approaches. Furthermore, this could be specifically focused on patients with DM or other chronic illnesses. In addition, future research studies should include the roles of the community, social and other non-health government institutional roles in health and illness.

Limitations of this Study

The limitations of this study are similar to those associated with any other qualitative study. The subjectivity of its approach was reliant on the researcher's training, experiences and ability to establish effective communication with research participants. The data that were generated were translated from Arabic to English so some meaning might have been lost. The data were mainly participants' verbal reports, which depended on the communication skills and relationship between the participants and the researcher. Lastly, the small sample size limited the results, which are specific to men in one geographic location using one health care system in Oman. Thus, these results are not generalizable to other populations. However, they do lay a foundation upon which future studies can be built.

The COVID-19 pandemic also had an effect of the data collection process. Because of the movement restrictions that were enforced in Oman to minimize the spread of the pandemic, potential participants were offered online video interviews or telephone interviews, but the all declined the offer. This might have been because of the cost of internet services or because it was not widely used technology in Omani culture or it might have been perceived as an invasion of privacy during their time with family. Another difficulty was encountered when collecting data through face to face interviews during the pandemic in that both the interviewer and the interviewee were wearing face masks. This created a barrier between the interviewer and interviewee. Neither could fully see the other's face. From the point of view of the interviewer (the PI), this greatly reduced the visibility of the participant's facial expressions and removed the ability to fully observe or read the reactions of the participant.

Concluding Remarks

This study was informed by SI, pragmatism and Constructivist Grounded theory (CGT). After the interviews, the researcher dealt with the data to develop themes that would address the main study question. The themes and the subthemes indicate the complexity of the men's perceptions of health and how this complexity may have formed in the lives of the participants. It was my primary goal, as the PI, to seek an understanding of the men's view of health, grounded in their own experiences. Based on this, I have introduced a different take on the concept of health that can inform readers, researchers, policy makers, and the nonprofessional community about the meaning of health from the perspective of the Omani men with T2DM through my study.

Appendix A (Procedures of data collection)

The steps to be followed by the PI are:

1. UCLA approval
2. Obtain ethics approval from local stakeholder
3. Recruitment and selection of participants
4. Obtain Informed Consent
5. In-depth interview using SSIG (appendix B) and writing of fieldnotes and initial memo
6. Transcription of the interview content, checking for accuracy, removing all identifiers
7. Translation into English
8. Coding of data (English)
9. Writing memos
10. Data analysis using constant comparison in analytic memos; discussion with mentor
11. Subsequent interviews are informed by previous interviews
12. Simultaneous data collection and analysis continues
13. Familiarizing with data
14. Generating initial codes
15. Searching for themes
16. Reviewing themes
17. Defining and naming the themes and subthemes
18. Producing the report.

Appendix B (Demographic data form)

Thank you for volunteering to participate in this study. Before we start with the interview, I would like your help with responding to the following demographic information. This information will help me describe the participants in the study.

1. Age: What is your age?
    a. 20-29
    b. 30-39
    c. 40-45
2. Employment status:
    a. Full time work
    b. Part time work
    c. Retired
    d. Unemployed
3. Marital Status: What is your marital status?
    a. Single
    b. In a relationship
    c. Married
    d. Separated
    e. Divorced
    f. Widowed
4. Educational level:
    a. Did not finish School
    b. Can read and write
    c. High School Diploma
    d. Some College
    e. Bachelor's Degree (4-year degree)
    f. Graduate Degree (Masters, Ph.D, JD, MD, etc)
    g. Other (Please specify): ____________________
5. From whom do you receive health support?
    a. Private clinic
    b. Diabetic clinic
    c. General hospital
    d. No health support

Thank you for your help. I will now be able to do a demographic summary of the men who have participated in this study.

Appendix C (Interview Guide)

Research Question:

- What is the perception of health and illness from the perspective of Omani adult men with T2DM?

Interview Main Questions:

“I am interested in learning and hearing from you about how you experience and understand health”.

First, I’d like to get to know a little bit more about you. Please tell me anything that stands out for you in relation to your health and caring for yourself.

Childhood

- As a child, how did your parents, community or school affect your lifestyle and health practices?
- If there were any time points in your childhood when you changed health practices, please share.
- Was information about taking care of your health accessible to you as a child? How?
- Please tell me any difficulties or challenges you had in following health practices in childhood.

Adult Health in General

- Please share a time in adulthood when there was a change in your health (or your health status).
- When was that? What happened leading up to the change in your health?
- What happened the day you knew your health was changing? Please describe that day in detail from the time you woke up through the end of that day.
- What were you thinking at that time when your health changed?
- What were you feeling?
- Who, if anyone, influenced you? (or helped you?). Tell me how they influenced you. (or helped you).
- What did you do in response to the change?
- What does this situation tell you about your health?

Diabetes Specifically

- Tell me about the day when you were told you have diabetes.
  What happened? How did the situation unfold?
- Where were you? Who was there? What did they tell you?
- What did that mean to you to be given a diagnosis of diabetes?
- What did you think? What did you feel? What did you do?

Stigma:

- Some people with diabetes feel that they became less of themselves, how do you feel about that?
- There are people who feel embarrassed because of their illness? If yes, why?
- Tell me if you have ever been excluded from anything because of your illness, how does that make you feel?
- People suffering from a chronic illness think about the cause of their illness, tell me what do you think about the cause of your DM?

Lifestyle:

- Think about your life before being diagnosed with Diabetes:
- Would you please tell me how did you usually spend your day?
- How many hours of sleep you were having at that time?
- Tell me about your hobbies, what do they mean to you, and how if any they affected your life in anyway.
- Can you describe your eating habits and the type of meals that you were having before diagnosis?

After you were diagnosed with Diabetes:

- What stands out about life with diabetes for you?
- Now today, what are your thoughts about health and life (after the diagnosis)?
- What kind of resources do you need to care for your health?
- Looking ahead to the future, what is your plan for taking care of yourself?
- What is going well for you?
- Tell me about any challenges that you have faced related to diabetes.
    -if you overcame the challenges, what happened? How did you overcome them?
    -if still struggling, what is happening now?

If there is a particular event that stands out to you that involves your experience with diabetes, please tell me about it.

- When was that? What happened?
- What were you thinking at that time?
- What were you feeling?
  Who, if anyone, influenced you? (or helped you?). Tell me how they influenced you. (or helped you).
- What did you do in response to this occurrence?

- What does this situation tell you about your health?

Knowledge about diabetes:

- Would you please compare what you know about diabetes today to what you knew about it before you were diagnosed.
- What's different?
- What is the same?
- How does that knowledge affect you and your lifestyle?
  - How you think?
  - How you feel?
  - What you do?
- What helps you understand more about your needs in relation to diabetes?

Please compare your experience with Diabetes to your experience with another illness.

- What is similar about the two illness and its effect on health and health practices?
- What is different?

- How did each illness affect your health?

If you allow me, let's step back and talk about health in general.

- What would you say that "health" is?
- How did you come to define it this way?
- How do you think others would define health?
- What are the differences between the way you define health as a person diagnosed with diabetes and someone else who is not diagnosed with any chronic illness?
- Is there a time in your life or an event or a person that stands out in relation to how you understand health? Please tell me about this.

- You have mentioned physical health and the body, how about other kinds of health?
- You have mentioned emotional health and moods, how about other kinds of health?
- You have mentioned issues related to healthy relationships, how about other kinds of health?
    - If the man talks about physical health (i.e., the body, anatomy, physiology, medications, health care issues), ask him to say more about himself, about his family, etc.
    - If he talks about emotional health (i.e., feelings, mood, optimism vs. pessimism, fatalism, religious ideas, philosophical ideas) ask him to say more.

        - If he talks about social health (i.e, people groups, society, dynamic of his living with other people, relationships), ask him to say more.

- If there is a way that "health" is related to you, or how you think about yourself, what is it?
- How is "health" related to your family? Or what you think about when you think about your family?
- How is health related to other people around you in your community or in your society (culture/ religion)?
- Looking back on what you explained (above), what do you think has influenced how you think about or understand health?

Let's talk about how you think about health.

- Tell me about a time when an event, person, or experience influenced the way you think about "health"
- What,if anything, in your childhood has influenced how you see health? (Effects from childhood)
- As an adult, what influences how you see health now?
    a. what you eat now?
    b. What about hobbies or physical activities, would you tell me what kind
- were you afraid to go to hospital to receive treatment?

Do you remember your general mood before and after you were informed about the diagnosis? Please explain

Let's talk about how you take care of your health.

- Tell me about the most recent thing you did to take care of your health?
- When did that happened?
- What did you do? Why? How?
- Who was involved in this with you? How did they influence you if at all?
- What does this mean to you?

Think of a time when you were ill.

- What did you do to get back to a state of health after being ill?
- What are strategies did you use to regain health?
- What did you do? When? Where? Who helped if anyone? Why did you do this?)
    - Treatment adherence
    - Non-medical treatment
    - Lifestyle changes

Think of the last time you were ill.

- Since that time when you were ill, what have been the challenges you have faced to regain better health status?
    - To get Access to health services
    - To use Resources
    - To get Family/social support

Based on your own standards, what do you think is an acceptable level of health?

- What do you consider to be your Aims to reach
- Tell me more about your Aims Please share how you developed this aims~~?~~
- Tell me about any Tactics you have used to reach aims. What are they? When was the last time you used these tactics? What happened? What did you do? Feel? Think?

How do you know when you are gaining more “health”?
What are the signs of reaching the targeted level of health?

What would be best guidance/advice could be offered to maintain health?

- For family
- For social circle
- Recourses needed

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