The Attitudes, Beliefs and Perceptions of Healthcare Professionals towards a Multidisciplinary Team Approach for People using Bariatric Surgery as a Treatment Option for Type 2 Diabetes Mellitus

By

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Abstract

Introduction: Kuwait ranks high in the prevalence of diabetes and obesity worldwide. Type 2 Diabetes Mellitus (T2DM) is the most prevalent form of diabetes, with bariatric surgery and the adoption of a healthier lifestyle recommended as treatment options. The International Diabetes Federation has recommended a multidisciplinary team approach for the management of people using bariatric surgery as a treatment option for T2DM. Although bariatric surgery is performed in Kuwait, it has yet to be included as a treatment option in the management plans for people with T2DM. Currently, patients in Kuwait experience inefficient diabetes education, absence of patient education for bariatric surgery, and inconsistencies in service delivery. Therefore, the perceptions of healthcare professionals need to be investigated regarding management of patients with T2DM who are eligible for bariatric surgery. Currently, there is limited research on the perceptions of healthcare professionals of multidisciplinary team collaboration for patients using bariatric surgery in T2DM management. Also, limited research that has explored healthcare professionals' opinions and experiences of working in multidisciplinary teams involved in T2DM management.

Aim: This research project aimed to explore: 1) the perceptions of healthcare professionals towards a multidisciplinary team approach for T2DM, 2) the communication processes occurring between healthcare professionals when managing patients with T2DM and bariatric surgery, and 3) the ways in which healthcare professionals collaborate when managing people using bariatric surgery as a treatment option for T2DM.

Methods: Qualitative interpretive description was the methodology utilised in this study. Data were collected through semi-structured interviews with healthcare

professionals, and observations of their consultations with people eligible for bariatric surgery as a treatment option for T2DM. Braun and Clarke's (2006) six steps for qualitative thematic data analysis was used to analyse and interpret the interview and observation data.

Findings: A total of 18 healthcare professionals from different disciplines working at a government hospital in Kuwait participated in this study, in which 17 interviews and six observation sessions were conducted between March and September 2020. Three major themes with their subthemes were identified: 1) barriers to efficient T2DM management with two subthemes – barriers imposed by the organisation, and barriers between healthcare professionals; 2) expectations of healthcare professionals of a multidisciplinary team approach for T2DM management with two subthemes – expectations of healthcare professionals of the organisation and expectations of healthcare professionals of other disciplines; and 3) launch of a multidisciplinary team approach for T2DM management with three subthemes – professional growth, success of a multidisciplinary team and challenges of a multidisciplinary team. These themes showed that while participants perceived numerous advantages to multidisciplinary team management of people with T2DM, several barriers affected the quality of patient care. These barriers were either at the organisational (e.g. hospital staffing) or individual healthcare professional level (e.g. role confusion).

Conclusion: The findings of this research will add to the body of knowledge on a multidisciplinary team approach for T2DM and bariatric surgery in Kuwait. The findings will also provide evidence that may be used to contribute to the development of policy or guidelines to ensure best practice for service delivery in T2DM management in Kuwait. Finally, the findings may help in constructing

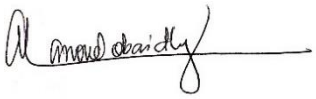
effective patient education programs for people with T2DM and obesity, as well as their families, that are suited to Kuwaiti culture and beliefs.

Declaration

I certify that this thesis:

1. does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and

2. that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

Signed: 

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Dedications

To my husband, my biggest supporter and father of our daughter. You flew us to an unfamiliar environment and have driven me crazy with your spontaneity, but I would not have had it any other way. You always had my back, and pulled me up, motivated me and kept me on track throughout my PhD journey, although having to do our PhDs at the same time might not have been our best idea, we still pulled through. You were always ready to make me laugh and were there when times were tough. Thank you for being a part of my life. I could not have made it this far without you, I love you.

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Publications

Alobaidly, A., Abigail, W., & Hill, P. (2020). Life Post Bariatric Surgery: The Experiences of People with Type 2 Diabetes Mellitus – A Qualitative Study. *Current Research in Obesity and Diabetes Journal, 13*(2), 0014-0021. doi:10.19080/CRDOJ.2020.13.555859

Alobaidly, A. M., Hasan, A. Y., Abigail, W., & Hill, P. (2018). A Review of Literature on the experiences of people with Type 2 Diabetes Mellitus after Bariatric Surgery in Kuwait. *Kuwait Medical Journal, 50*(4), 387-398.

Conference Posters

Alobaidly, A., Abigail, W., Feo, R., & Hill, P. (2020). A Review on the Health Perceptions of Health Care Professionals on Multidisciplinary Teams Management of People with T2DM Including Bariatric Surgery as a Treatment Option. *Australasian Diabetes Congress*. *E-Poster Presentation ADS no.14*, Adelaide, Australia.

Alobaidly, A., Abigail, W., & Hill, P. (2020). The Experiences of People with Type 2 Diabetes Mellitus – A Qualitative study. *Australasian Diabetes Congress*. *E-Poster Presentation ADEA no.6*, Adelaide, Australia.

List of Acronyms

AHRQ	Agency for Healthcare Research and Quality
BMI	Body Mass Index
DDI	Dasman Diabetes Institute
IDF	International Diabetes Federation
HbA_{1c}	Glycated Haemoglobin A_{1c}
JHNEBP	Johns Hopkins Nursing Evidence-Based Practice
KDS	Kuwait Diabetes Society
KMA	Kuwait Medical Association
KSA	Kingdom of Saudi Arabia
MENA	Middle East and North Africa
SBREC	Social and Behavioural Research Ethics Committee
SEIPS	Systems Engineering Initiative for Patient Safety
T1DM	Type 1 Diabetes Mellitus
T2DM	Type 2 Diabetes Mellitus
UAE	United Arab Emirates
UK	United Kingdom
USA	United States of America
WHO	World Health Organisation

Chapter 1: Introduction and Background

1.1 Introduction

According to the World Health Organisation (WHO), obesity contributes to 44% of diabetes diagnoses globally (World Health Organisation, 2016). The International Diabetes Federation (2019) reports that over 400 million adults have diabetes, and this figure is predicted to rise to 642 million by 2040. The International Diabetes Federation (IDF) has recommended bariatric surgery as an acceptable treatment option for people with type 2 diabetes mellitus (T2DM) for the past decade as bariatric surgery has been found to have positive effects on blood glucose levels (Dixon, Zimmet, Alberti, & Rubino, 2011). The IDF also states that people with T2DM undergoing bariatric surgery need to be managed by a multidisciplinary team to receive the most suitable care (Dixon et al., 2011). Furthermore, the IDF recommends that people with T2DM who have a body mass index (BMI) of 35 kg/m^2 and over (between 30 and 35 kg/m2 in Asians) should be referred to a multidisciplinary team with a bariatric surgeon, but not exclusively, to help manage T2DM and help avoid weight regain and malnutrition (International Diabetes Federation, 2017).

Studies conducted across a range of diverse Western countries have found that multidisciplinary team approaches provide patients with assistance in managing different obesity-related comorbidities by enabling access to specialised healthcare professionals (Aarts et al., 2017; Dimitrov, Ivanov, & Atanasova, 2011). For instance, in Canada, patients who have undergone bariatric surgery reported the advantages of follow-up after their surgery where they received patient education by healthcare professionals tailored to their specific needs (Aarts et al., 2017). In Bulgaria, a multidisciplinary team approach for people with diabetes and obesity is advised, whereby a management plan is produced to assist patients in receiving the most suitable care for their bariatric pre- and post-surgical procedure (Dimitrov et al., 2011). The features of multidisciplinary team management in

Bulgaria were found to address post-surgical physical and psychological changes such as hormonal changes, nutritional deficits and behavioural changes (Dimitrov et al., 2011).

Bariatric surgery has become popular in the management of obesity in recent years in Kuwait, and has been found to positively affect blood glucose levels in people with T2DM (Almarri, Al Sabah, Al Haddad, & Vaz, 2017). Several studies concerning the success of bariatric surgery for other chronic health conditions (e.g. T2DM remission and sleep apnoea) have also been conducted in Kuwait (Abd Allatif et al., 2014; Al-Sabah et al., 2013; Jamal & Aminian, 2015). Although bariatric surgery has been deemed acceptable as a treatment option for people with T2DM by the IDF since 2011, it has not yet been included in T2DM management plans in Kuwait. T2DM management plans have included patient education as a means to assist patients understand their condition and give them the knowledge, skills and tools to manage their blood glucose levels.

Studies on diabetes education in Kuwait over the past decade have identified limited knowledge about self-management of patients with T2DM, a limitation often associated with inefficient methods of patient education by healthcare professionals (Al-Adsani, Moussa, Al-Jasem, Abdella, & Al-Hamad, 2009; Al Slamah, Nicholl, Alslail, & Melville, 2017; Awad, Dalle, & Enlund, 2011; Waheedi, Awad, Hatoum, & Enlund, 2017). Currently, there is no known research that explores the provision of education for people with T2DM specifically who are undergoing bariatric surgery in Kuwait (Alobaidly, Abigail, & Hill, 2020).

Although there has been notable growth in bariatric surgeries around the world (Mayer & Dwyer, 2016), limited research has been conducted on the beliefs of healthcare professionals about the effect of multidisciplinary teams on patient care for people using bariatric surgery as a treatment option for T2DM (Alobaidly et al., 2020). Therefore, this research project explored the perceptions of healthcare professionals about a

multidisciplinary team approach in the management of people using bariatric surgery as a treatment option for T2DM in Kuwait. The knowledge acquired from this project aims to contribute to providing a clear outline of the expectations that healthcare professionals in Kuwait have of other disciplines when providing patient care, and what they expect patients to receive in patient education in relation to T2DM and bariatric surgery. The purpose is to increase knowledge about diabetes and bariatric surgery, and to contribute to the improvement of diabetes management in Kuwait. Additionally, this project aims to identify future research projects that build upon the findings of this research.

In the following sections, this chapter provides the background of the research study and the study setting – Kuwait – in terms of its geography, climate, population, health system, economic status and the nursing profession that aims to enhance the reader's understanding of the research setting. This chapter also presents the significance of this study, the research questions, research objectives and a brief overview of the chapters of the thesis.

1.2 Background

This section describes the three main components of this study – T2DM, bariatric surgery, and multidisciplinary team approaches to care delivery – to provide an understanding of the necessity for the exploration of the perceptions and beliefs of healthcare professionals regarding a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM in Kuwait.

1.2.1 Type 2 diabetes mellitus

T2DM is increasingly becoming a global public health concern, triggering the WHO to set a globally agreed target to reduce this incidence by 2025 (World Health Organisation, 2019b). The International Diabetes Federation (2019) defines diabetes as a condition that

occurs when the pancreas does not produce enough insulin, or when the body uses insulin ineffectively. According to the WHO, T2DM is the most common type of diabetes, and is caused by various degrees of β-cell dysfunction and insulin resistance; commonly associated with being overweight and obese (World Health Organisation, 2019a). Approximately 50% of individuals with T2DM are unaware of their condition and remain undiagnosed (International Diabetes Federation, 2019). These individuals are likely to age prematurely and to suffer major health consequences resulting from poor T2DM management, such as nephropathy and neuropathy (International Diabetes Federation, 2019). It is estimated that 50% of deaths are linked to T2DM in adults under the age of 60 years in Kuwait (International Diabetes Federation, 2019).

In 2019, the International Diabetes Federation reported that at least 35% of diabetes-related health expenditure is spent on T2DM management in the Eastern Mediterranean Region in which the majority of the countries are low- and middle-income countries (International Diabetes Federation, 2019). The IDF classifies the Eastern Mediterranean Region as having the second highest prevalence of T2DM worldwide (International Diabetes Federation, 2019). This region represents 22 countries: Afghanistan, Bahrain, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Pakistan, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, United Arabs Emirates and Yemen (World Health Organisation, 2021b).

The Middle East and North Africa Region, also known as the Greater Middle East, includes the 22 countries listed above, as well as a further 32 countries: Algeria, Israel, Turkey, Abkhazia, Armenia, Artsakh, Azerbaijan, Burkina Faso, Cape Verde, Chad, Comoros, Cyprus, Eritrea, Ethiopia, Gambia, Georgia, Kazakhstan, Kyrgyzstan, Mali, Malta, Mauritania, Niger, Northern Cyprus, Sahrawi Arab Democratic Republic, Senegal, Somaliland, South Ossetia, Tajikistan, Turkmenistan and Uzbekistan (Istizada, 2020). In

the Middle East and North Africa Region, there is a projected 96% increase in T2DM prevalence among 20–79 year-old adults (from 2019 to 2045), where one in eight adults will have T2DM; and one in two deaths will occur due to the disease in adults under 60 years (International Diabetes Federation, 2019).

The Middle East and North Africa Region also includes the Gulf Cooperation Council which consists of six countries: the United Arab Emirates (UAE), Bahrain, Saudi Arabia, Oman, Qatar and Kuwait (Gulf Cooperation Council, 2021). It is now well recognised that countries of the Gulf Cooperation Council are high-income countries that are among those facing the greatest burden of T2DM (International Diabetes Federation, 2019). This has been mainly linked to rapidly increasing urbanisation and socioeconomic development in these countries, and to the sudden extraordinary increase in income and prosperity, which has resulted in substantial lifestyle changes including the adoption of sedentary lifestyles and the consumption of Western-style fast foods (Klautzer, Becker, & Mattke, 2014).

In Kuwait, the prevalence of diabetes in the adult population (aged 20–79 years) reached 22% in 2019 (International Diabetes Federation, 2019). Alfadhli, Al-Mazeedi, Bodner, and Dean (2017) found that Kuwaiti people have limited knowledge about what constitutes a healthy lifestyle, including diet, exercise, sleeping patterns and smoking, and their beliefs about what affects their health do not align with the international standard for healthy living. Studies conducted in Kuwait regarding diabetes education have found that patients with T2DM have limited knowledge about self-management, which is linked to inefficient methods of patient education provided by health professionals (Al-Adsani et al., 2009; Al Slamah et al., 2017; Awad et al., 2011; Waheedi, Awad, et al., 2017). The majority of these patients have difficulty achieving the recommended glycaemic targets of glycated haemoglobin A_{1c} (HbA_{1c}) levels of less than 7% (Al-Khawaldeh, Al-Hassan, & Froelicher, 2012) inadequate medication management to reach glycaemic stability (Alsairafi, Taylor,

Smith, & Alattar, 2016). Surgical interventions have been utilised to help patients with T2DM have better management of their HbA_{1c} levels (Alobaidly, Hasan, Abigail, & Hill, 2018).

1.2.2 Bariatric surgery

Bariatric surgery is a surgical intervention that assists individuals to lose weight by making changes to their digestive system (National Diabetes Services Scheme, 2017). It is an option for the management of individuals with severe obesity who have not been able to lose weight or to assist in preventing them from regaining weight when using other methods unsuccessfully, such as lifestyle changes or pharmaceutical drugs. Bariatric surgery is also effective in the management of comorbidities, such as the remission of obesity-related T2DM and improvements in sleep apnoea (Smeu, Balescu, Sarbu, Fica, & Copaescu, 2015; Yan, Cohen, & Aminian, 2017; Zou et al., 2015). Remission of T2DM has been reported as one of the benefits of bariatric surgery for individuals with hyperglycaemia (Mayer & Dwyer, 2016).

The IDF notes that the remission of diabetic states, not cure, is the goal of bariatric surgery (Dixon et al., 2011). The highest percentage of weight loss occurs in the first year after bariatric surgery at 15-30% (Gautier, Sarcher, Contival, Le Roux, & Alves, 2013; Jamal & Aminian, 2015; Julia et al., 2013). However, research in European sample populations has shown that losing the weight was only temporary for many people undergoing bariatric surgery, with weight regain within five to 10 years of surgery occurring (Himpens, Verbrugghe, Cadiere, Everaerts, & Greve, 2012; Ritter, Vetter, & Sarwer, 2012). According to Jamal & Aminian (2015), 3.7% patients reoperate due to low weight loss percentage at 24-months post bariatric surgery, in which re-operation was conducted to manage recurring symptoms such as hyperglycaemia and weight regain (Gautier et al., 2012; Yan et al., 2017).

The Non-Communicable Diseases Risk Factor Collaboration (Risk Factor Collaboration, 2017) estimated that the prevalence of obesity in 2010 was 30.4% in Kuwaiti men and 44.6% in Kuwaiti women, predicting its rise to 41.2% in men and 51.0% in women by 2025. Bariatric surgery is recommended as a surgical procedure for obesity and T2DM management in Kuwait, and achieving target weight-loss results have been possible for this overweight, obese and morbidly obese population with bariatric surgery in Kuwait (Abd Ellatif et al., 2014; Al-Sabah et al., 2013; Almarri et al., 2017; Haskin, 2013; Jamal & Aminian, 2015).

1.2.3 Multidisciplinary teams

Interprofessional practice is the more common term used today for a multidisciplinary team approach in Western healthcare settings, where it is defined as a collaborative practice between healthcare professionals who work with people within their disciplines, with people from different disciplines, with patients and their families, and with communities to deliver health care (Queensland Health, 2019). However, this term has yet to be used in the Kuwaiti setting where healthcare systems still use the terminology of a multidisciplinary team approach to describe managing a patient via different disciplines in a healthcare setting. Hence this terminology is utilised throughout this thesis.

According to New South Wales Health in Australia, a multidisciplinary team in health care is defined as a group of healthcare professionals from different disciplines that collaborate, cooperate and communicate together to determine a patient's treatment plan (New South Wales Health, 2020). New South Wales Health (2020) also emphasises that for a multidisciplinary team to be effective, healthcare professionals' roles, targeted outcomes and method of service delivery need to be defined clearly. Additionally, it is important to understand the different models of care that a multidisciplinary team may be guided by.

1.2.3.1 Models of multidisciplinary team care

The goal of a multidisciplinary team in the community is to address the problems of access to health care and create a positive impact on the health outcomes of the community (Smith, 2018). There is a single discipline that coordinates the interactions between the healthcare professionals in multidisciplinary teams for the care and management of the patient (Swan, Haynes, & Haas, 2019). Health outcomes and costs have been found to improve through the use of coordinator care models (Berkowitz, Eisenstat, Barnard, & Wexler, 2018). These models include the guided care model, transitional care model, chronic care model, and care coordination model (Chalyachati et al., 2014; Home-Based Primary Care, 2020; Swan et al., 2019; Yano et al., 2016). These care models were found to be useful in rural United States of America (USA) settings and may be adaptable to other countries taking into consideration cultural differences. Further details of these models are provided below.

Guided care model

The guided care model was developed by the Johns Hopkins University in 2001 with the goal of improving health outcomes for people with complex conditions (Johns Hopkins Medicine, 2022). This model appointed nurses as leaders in which nurses received a six-week online case management training program prior to commencing their responsibilities (Johns Hopkins Medicine, 2022). In this management program, the nurse case manager guided the patient's service needs (Case Management Society of America, 2021). While the program had direct benefits, such as home visits and improved communication between primary care providers, it did not allocate advanced practice nurses to case manage patients with chronic complex health problems (Case Management Society of America, 2021; Hostetter, Klein, McCarthy, & Hayes, 2016; Moschetti et al., 2018).

In 2018, the New England Journal of Medicine researchers looked at the application of the guided care model for chronic care patients who come to the hospital through the emergency room (New England Journal of Medicine, 2019). This application resulted in use of the model for chronic care treatment (Case Management Society of America, 2021). An accredited registered nurse with case management training collaborated with physicians in the hospital to apply chronic care innovations to ensure healthy outcomes (Swan et.al, 2019). Although, this model was utilised in the primary care clinics, it lacked the inclusion of a registered nurse practitioner and home visit services (Swan et.al, 2019).

Transitional care model

The transitional care model was designed to prevent chronically ill patients' rehospitalisation and progression of their health complications (Transitional Care Model, 2018). A nurse practitioner, qualified in caring for chronically ill patients, served as the transitional care nurse. The nurse was responsible for coordinating the patient's release from the hospital and follow-up care at home. Studies demonstrated that this model was effective and cost-effective with reductions in hospitalisations (Transitional Care Model, 2018). However, the transitional care nurse was based in a hospital and was not coordinating care in rural communities or primary care clinics (Transitional Care Model, 2018).

Chronic care model

The chronic care model is a comprehensive model that is situated with the patient at the centre of its concept (Davy et al., 2015; Stock et al., 2014). This model includes public health policy, organisational restructuring and impact analysis for healthcare improvements (Davy et al., 2015; Stock et al., 2014). This model is usually led by a physician as the coordinator responsible for making all home visits and designing the patient's care plan for the team. In this model, the physician is primarily responsible for

visiting the patient at home instead of at the physician’s office, which consumed a significant amount of the physician’s time (Davy et al., 2015; Stock et al., 2014).

Care coordination model

For primary care practice settings, the care coordination model was developed by the Agency for Healthcare Research and Quality (AHRQ) (Swan et.al, 2019). According to the AHRQ, this model creates high-quality, high-value, safer, and more effective care by coordinating care around the patient's specific needs, while addressing access to care, continuity of care, shared decision-making, and transitional care from the hospital to home. Coordinators are not necessarily healthcare practitioners, they also work closely with patients' families, their immediate environment, the community and public health resources, and health policies (Swan et.al, 2019). There have been multiple toolkits developed by the AHRQ concerning all aspects of care coordination which are ready for implementation (Swan et.al, 2019). The care coordination model is comprehensive and found to have satisfied the purpose and objectives of the project it was designed for where it was being practiced in small rural areas in Montana, New York, Oregon, New Mexico, Nebraska, Oregon, Mississippi, and Vermont (Center for Health Care Strategies, 2019). Each area focused on different aspects of the model for specific population needs (Center for Health Care Strategies, 2019).

The guided care model, transitional care model, and care coordination models are examples of multidisciplinary team models. These models support the effectiveness of a nurse-led multidisciplinary team approach.

1.2.3.2 Nurse-led multidisciplinary team approach

A nurse-led multidisciplinary team approach has been studied for its effectiveness and acceptance in numerous countries across the globe, such as the United Kingdom (UK) (James et al., 2009), the USA (Naylor & Kurtzman, 2010), China (Ni et al., 2019), and Iran

(Nayeri et al., 2020). Policymakers in the healthcare sector and medical systems decided to expand the role of nurses due to shortages of healthcare and medical providers in the USA (Naylor & Kurtzman, 2010). This led to the instigation of nurse-led multidisciplinary teams (Naylor & Kurtzman, 2010). Nurse-led multidisciplinary team management has been shown to improve patient outcomes, quality of life, self-management behaviours, hospitalisation, unplanned health service use, and health education for people with T2DM in hospitals and communities, as they can effectively coordinate and lead diabetes care (Jiang, Zhang, Yan, Liu, & Gao, 2020; Ni et al., 2019; Partiprajak, Hanucharurnkul, Piaseu, Brooten, & Nityasuddhi, 2011). In the UK, advanced practice roles of nurses were established in order to deliver continuous and efficient support for people living with T2DM (James et al., 2009). Nikitara, Constantinou, Andreou, & Diomidous (2019) conducted a mixed method systematic review on the role of nurses in T2DM management, in which they found that enhancing nurses' roles and involving diabetes specialist nurses in the management of T2DM can assist these nurses in providing adequate quality healthcare for people living with T2DM. Nurses in Iran reported that despite working as a member in a multidisciplinary team being viewed as challenging and complex, this model provided them with positive feedback and rewarding experiences regarding being part of a nurse-led multidisciplinary team (Nayeri et al., 2020). Moreover, improved healthcare and medical systems in the UK are strongly linked to nurses' expertise and skills in work coordination, communication with patients, and professional relationships (Currie, Koteyko, & Nerlich, 2009).

In general, different multidisciplinary team models were studied in different settings to improve the delivery of health care and management in a community. It was found that a nurse's role as a leader in T2DM management could improve patient care and management provided that their roles are clearly identified. It was also important that these

roles are developed to encourage nurses to provide efficient care delivery during their leadership position.

1.2.3.3 Multidisciplinary team approach for type 2 diabetes mellitus management using bariatric surgery

A multidisciplinary team approach for patients with T2DM eligible for bariatric surgery as a treatment option includes a variety of professions, such as a bariatric surgeon to assess the type of bariatric surgery required (Abela et al., 2011); an endocrinologist to manage malabsorption (Dimitrov et al., 2011), nurses to provide patient education (Foster et al., 2017), a dietitian to address nutritional deficits (Garduno-Diaz, 2016), a cardiologist to assess the heart for regression of left ventricular mass and chamber size (Dimitrov et al., 2011), pharmacists to advise on available pharmacotherapy for obesity management (Foster et al., 2017), plastic surgeons for removal of excess skin due to weight loss (Abela et al., 2011), and a psychologist to assist with personal and behavioural changes (Jumbe et al., 2017).

Even though a multidisciplinary team approach to bariatric surgery is recommended for people with T2DM (International Diabetes Federation, 2017), there is limited research on the use of multidisciplinary team approaches in the management of T2DM and bariatric surgery. In the USA, Foster et al. (2017) developed a weight-loss program that implements a multidisciplinary team approach for people with T2DM. The team includes a physician with expertise in pharmacotherapy, a nurse and/or nurse practitioner, a dietitian and an exercise physiologist (Foster et al., 2017). The program was successful in providing their T2DM patients with substantial weight loss (Foster et al., 2017). Abela et al. (2011) found that, in the UK, having a multidisciplinary team for people undergoing bariatric surgery is necessary to maintain motivation, and manage complications and social interactions. However, the benefits of a multidisciplinary team approach for people using bariatric

surgery as a treatment option for T2DM have yet to be studied in the Eastern Mediterranean Region, including Kuwait (Nimeri et al., 2017).

In the Gulf Council Countries, a multidisciplinary team approach has been reported as successful in several fields, including in the management of patients with heart failure. For instance, in the UAE, a newly developed multidisciplinary program reported improvement in cardiac function and patient care service delivery for patients with heart failure (Atallah et al., 2019). In Kuwait, a multidisciplinary team approach was successful in reducing the number of admissions to the paediatrics emergency department (Alazmi & Elhassanien, 2013).

Several studies have emphasised the importance of multidisciplinary team management for bariatric patients (Awad et al., 2011), which also includes a psychologist (Alobaidly et al., 2018) and a nutritionist (Garduno-Diaz, 2016). Pharmacists in Kuwait have reported their readiness to work collaboratively with other disciplines in managing people with T2DM (Al-Taweel et al, 2014). Furthermore, pharmacists in Qatar have also expressed their willingness to be involved in patient care and patient education, despite the low expectations physicians have in including pharmacists as the experts at prescribing medication (Wilbur, et al. 2012). The willingness and readiness of other disciplines such as pharmacists and nutritionists demonstrates the possibility of implementing a multidisciplinary team approach for T2DM management, including the use of bariatric surgery, in Kuwaiti healthcare services.

1.2.4 Section summary

This research project aimed to explore the perceptions of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. Overall, people in Kuwait undergoing bariatric surgery for management of

T2DM do not currently have a multidisciplinary team to assist in their care as recommended by the IDF (International Diabetes Federation, 2019). As T2DM is a global health issue that affects the Kuwaiti population to a higher degree than other countries, finding improved options for health care is vital. Multidisciplinary teams can play an important role in the management of people with T2DM. This research project aimed to investigate this phenomenon in depth and to offer possible enhancements in service delivery to improve health outcomes for people in Kuwait with T2DM undergoing bariatric surgery.

1.3 Study setting – Kuwait

The State of Kuwait is located on the north-eastern coast of the Arabian Gulf and is bordered by Iraq in the north and Saudi Arabia in the south. Kuwait is a small country, with a geographical area of approximately 17,820 square kilometres divided into six governorates: Al Asimah (Kuwait City), the capital of the country; Jahra; Hawalli; Farwaniyah; Mubarak Al-Kabeer and Ahmadi (Central Statistical Bureau, 2021) (Figure 1.1).

‘This image has been removed due to copyright restriction.’

Available online from:

[https://www.csb.gov.kw/Pages/Statistics_en?ID=59&ParentCatID=70]

Figure 1.1: Governates of Kuwait (Central Statistical Bureau, 2021)

Kuwait’s total population was estimated as 4,464,521 in 2020, with only 1,365,171 holding Kuwaiti nationality status (Central Statistical Bureau, 2021). The majority of the Kuwait population live in Kuwait City and in cities that surround it, while a small number live in remote areas (Worldometers, 2021). Life expectancy is estimated at 77.1 years for Kuwaiti females and 75.1 years for Kuwaiti males (Worldometers, 2021).

The climate in Kuwait is known to be extreme. In winter the weather is characterised by very cold temperatures, especially during the night, with occasional rainfall. In summer the weather is hot and dry with frequent sandstorms (Central Statistical Bureau, 2021).

Kuwait is an Islamic Arab democratic country with a national parliament of 50 members elected by the Kuwaitis every four years (Kuwait National Assembly, 2020). Arabic is recognised as the country's official language, although English is widely used in educational settings, media and medical settings (Central Statistical Bureau, 2021).

1.3.1 Religion in Kuwait

Islam is the official religion of Kuwait; however, citizens and foreigners of other religions and faiths are free to practice their beliefs (Kuwait National Assembly, 2020). Approximately 85% of the population is Muslim (Kuwait National Assembly, 2020). There are two main sub-sects of Islam in Kuwait; 45% of the population is Sunni Muslim, while 40% is Shi'a Muslim (Kuwait National Assembly, 2020). The remaining 15% practices Christianity, Hinduism and other religions.

The most essential tenet of Islam is the purification of the soul through prayers, known as *salat,* five times each day. The purpose of this activity is to strengthen one's commitment to Allah. Cleanliness and proper hygiene are prerequisites for the ritual prayers – in Islam good physical health and good spiritual health are intertwined.

As an Islamic country, Kuwait does not tolerate the use of alcohol, homosexual acts, pork products or heterosexual couples living together out of wedlock. This said, Kuwait is a country known for its tolerance of other cultures. Other religions and faiths are allowed to practice freely.

The holy month of Ramadan is very important and there are a number of Kuwaiti cultural rules which Muslims must follow. They are only allowed to work six hours a day and must

fast. This includes no eating, drinking, smoking or chewing gum before sunset. This also applies to people who practice different religions, whereby they must not practice any of these things in public during the daytime during Ramadan. Fasting starts from sunrise and lasts until sunset. At sunset, people gather to break the fast, family members and friends usually visit each other and celebrate during the night. Many businesses, shops and restaurants operate on reduced working hours during Ramadan.

1.3.2 Culture in Kuwait

Arab culture and traditions have been shaped by Islamic beliefs and practices, which are the foundations of the State of Kuwait. The State of Kuwait has always paid special attention to the preservation of its culture, heritage and background by preserving artefacts, archaeological pieces and historical documents, which are well preserved and kept in the Kuwait National Museum. Moreover, the Kuwaiti culture is popular for dialect poetry, film, theatre and television shows, which are growing and thriving, and being exported to neighbouring countries. Given that the culture of Kuwait is mostly non-active, this could have contributed to the prevalence of obesity, which could have led to increasing levels of T2DM.

The destruction caused by the Iraqi invasion in 1990 created a sense of awareness among the Kuwaiti younger generations about the importance of preserving and resurrecting the old, and establishing new, art in Kuwait. The new architectural buildings of Kuwait City, that combines modern style with old-fashioned art, reflects this perception.

The Kuwait Opera House (The Center, 2021) and the Sheikh Abdullah Al Salem Cultural Centre (The Cultural Center, 2021) were opened in 2018 and considered the largest cultural centres in the Middle East. These cultural centres are multidisciplinary public spaces that include conference and exhibition halls, theatres and cinemas, and libraries

that offer a range of events and workshops. The Kuwaiti culture has a large range of customs and traditions that offer a colourful and extensive culture, reflected in the *Diwaniya* and in the Al Sadu weaving (Figure 1.2). The Kuwaiti people also have an exclusive passion for the arts, be it literature, theatre, music, dance, films or contemporary art.

‘This image has been removed due to copyright restriction.’

Available online from: [alsaduweaving.wordpress.com]

Figure 1.2: Al Sadu weaving in Kuwait (alsaduweaving.wordpress.com)

Kuwaiti homes usually contain one main hall, but rich families build another hall or extra room on the side of the home and call it the *Diwaniya*. The name *Diwaniya* comes from the way one sits at this event, with the cushions placed all along the walls of the room, and the organisation of the seating area (Kuwait Government Online, 2021a). The floor is covered with woven elegant Persian carpets (Kuwait Government Online, 2021a). Arabic coffee, tea and meals are offered for guests and visitors (Kuwait Government Online, 2021a). The general atmosphere of the hall is similar to social clubs, cultural forums and political salons (Kuwait Government Online, 2021a). The *Diwaniya* receive guests daily or once a week, and they can be found at each street in the residential areas (Kuwait Government Online, 2021a).

In bygone years, the *Diwaniya* was considered the reception area where a Kuwaiti man host male guests and family members, and meets with his business colleagues (Kuwait Government Online, 2021a). These social halls have preserved the *Diwaniya’s* importance in the social, political and economic life of Kuwait (Kuwait Government Online, 2021a). Today the term refers both to a reception hall and the gathering held in it, and visiting or hosting a *Diwaniya* is an essential practice of a Kuwaiti man’s social life (Kuwait Government Online, 2021a). Hence, it has become a mark in the Kuwaiti traditional and

social daily life (Kuwait Government Online, 2021a). This ritual is mostly reserved for men, but there are some Kuwaiti female groups who have started a feminine kind of *Diwaniya* tradition, that is usually called a teatime gathering during noon time (Kuwait Government Online, 2021a). This ritual nowadays has become associated with high-caloric intake and low physical activity, both of which have been linked to the prevalence of obesity and T2DM in the Kuwaiti population (Zaghloul et al., 2013).

1.3.3 Education in Kuwait

In Kuwait, schooling is free of charge for everyone (Kuwait Government Online, 2021b). Attendance is compulsory between the ages of six and 14 years, and the school contacts the parents of absent students to enquire about their whereabouts and request the child to be sent to school (Kuwait Government Online, 2021b). Higher authorities like policemen and social services could be involved with uncooperative parents (Kuwait Government Online, 2021b). While the Kuwait Government stresses the importance of education regardless of gender, most schools are separated based on gender after kindergarten (Kuwait Government Online, 2021b).

The education system consists of four stages: two years at kindergarten, five years at primary school, four years at intermediate school and three at secondary school (Alrashidi, 2016). In Kuwait, the school week starts on Sunday and ends on Thursday (Kuwait Government Online, 2021b). Although physical education is one of the subjects offered at school, it is elective and usually spent as break-time for students, which could have impacted on the lifestyle of school-aged Kuwaiti, eventually contributing to obesity and T2DM.

The definition of literacy used by the Kuwait Government is that a person over the age of 13 must be capable of reading, writing and using a computer (Alrashidi, 2016). The literacy

rate among the younger population aged between 14 and 24 years is around 98%, which is considered one of the highest rates among Arab nations (Alrashidi, 2016). Approximately 80% of the Kuwaiti population is literate, with around 82% of Kuwaiti males, and 75% of Kuwaiti females meeting these criteria (Kuwait Government Online, 2021b).

The Kuwait University is the only university in the country, with many colleges across the country, but because of the great value placed on education, the Kuwait Government grants scholarships for many Kuwaitis and non-Kuwaitis to pursue higher education nationally and internationally. The Public Authority for Applied Education and Training offers a variety of educational programs through its colleges. There are also several post-secondary technical institutes where students may pursue knowledge of electronics, air-conditioning, and diesel and petrol engines, all necessary to the major industries of Kuwait.

1.3.4 The health context in Kuwait

In Islam the importance of good health cannot be overemphasised. Every individual living in Kuwait receives care when sick as well as preventative medicine. Kuwait's healthcare system is one of the most advanced in the Middle East Region (Central Statistical Bureau, 2021). The system incorporates both public and private sectors, although over 80% of healthcare services for Kuwaiti citizens are provided by the public sector under the Ministry of Health (Central Statistical Bureau, 2021). Medical services are provided free of charge to the public in government-run clinics (Central Statistical Bureau, 2021). The public healthcare system is run through a complex network of primary healthcare centres, secondary healthcare services, research institutions and specialised hospitals (Central Statistical Bureau, 2021).

Primary health care is delivered by a network of polyclinics, which are usually found in community centres, often near the local co-op supermarket in each suburb (Central

Statistical Bureau, 2021). These clinics provide preliminary examinations and routine care, and, where necessary, refer patients to hospital specialists (Central Statistical Bureau, 2021). The Kuwait Government operates six regional hospitals and 14 specialised hospitals, with a total bed capacity of 7,165 (Central Statistical Bureau, 2021). Secondary healthcare services are provided by six major hospitals: Sabah Hospital, Amiri Hospital, Adan Hospital, Farwaniya Hospital, Mubarak Al-Kabeer Hospital and Jahra Hospital (Central Statistical Bureau, 2021). Each major hospital delivers a 24-hour emergency service and provides an outpatient service to all citizens and residents in each region (Central Statistical Bureau, 2021).

In 2016, the general government expenditure in Kuwait allocated 13.86% of the country's income to the healthcare system, of which 12.7% was out-of-pocket expenditure for the consumer from the total health expenditure (World Health Organisation, 2018). Kuwait's expenditure on medicines, equipment, laboratories and medical disposables in the Ministry of Health was approximately $1.5 billion in 2018 (Central Statistical Bureau, 2021).

1.3.4.1 Kuwait Diabetes Society

Kuwait Diabetes Society (KDS) is an establishment of the Kuwait Medical Association (KMA). The KMA has more than 31,000 registered medical staff, such as doctors, nurses, and pharmacists, where people with T2DM, carers and family members of people living with diabetes can join (Kuwait Diabetes Society, 2021). Also, registration is open to anyone who lives in Kuwait for an annual fee. This society's members can use a valid membership card to redeem benefits and join workshops (Kuwait Diabetes Society, 2021).

The KDS is affiliated with the IDF, which is considered as the lead organisation of more than 232 diabetes associations in over 170 countries around the world (Kuwait Diabetes Society, 2021). The main goal of the KDS is to increase awareness of all type of diabetes

and provide health education and workshops for its members in the Kuwaiti population (Kuwait Diabetes Society, 2021).

The KDS provides activities and services for people with diabetes, healthcare professionals and interested individuals (Kuwait Diabetes Society, 2021). These activities include providing medical and nursing training and workshops to improve expertise and diabetes care; disseminating periodical journals, publications and teaching materials that contain updates in the field of diabetes; sponsoring and conducting diabetes conferences both nationally and internationally; and establishing collaborative work with other diabetes-related associations and organisations locally, regionally and globally (Kuwait Diabetes Society, 2021). The KDS also plays an active role in boosting professional collaboration and cooperation between medical staff to increase knowledge and expertise; coordinating an annual diabetes youth camp through using social media applications like Instagram and Twitter to share news and announcements for events; supplying the members with diabetes management tools at a lower price compared to market price; and conducting free HbA_{1c} checking, retinal examinations, foot care and dietary consultations for KDS members (Kuwait Diabetes Society, 2021).

1.3.4.2 Dasman Diabetes Institute

The Dasman Diabetes Institute (DDI) was founded in 2006 under the patronage of His Highness Sheikh Jaber Al Ahmed Al Sabah, the late Amir of the State of Kuwait, and the Kuwait Foundation for the Advancement of Sciences to reduce the prevalence and cost of diabetes in the State of Kuwait (Dasman Diabetes Institute, 2021). The DDI's objectives and goals are to manage the diabetes epidemic through evidence-based diabetes research, prevention policies, awareness-raising initiatives, educational programs, training of medical professionals and education of the community members (Dasman Diabetes Institute, 2021). This institute has become the leading diabetes organisation in the Arabian

Gulf region, in the Middle East and North Africa Region, and is recognised with distinction regionally and globally (Dasman Diabetes Institute, 2021).

The DDI's therapeutic and action care department consists of several medical clinics that aim to deliver comprehensive diabetes mellitus care (Dasman Diabetes Institute, 2021). The list of DDI's medical and health clinics are: adult and paediatric diabetology, podiatry, ophthalmology, dental, neurology, nephrology, cardiology, dermatology, ear nose throat, and rehabilitation, which are operated by trained local and international health professionals (Dasman Diabetes Institute, 2021).

According to the Dasman Diabetes Institute (2021), its research department pays close attention to evidence-based practice and research because it is the backbone of modern and innovative medicine. This department applies knowledge and expertise to understand diabetes in the Kuwaiti population (Dasman Diabetes Institute, 2021). The research team focuses on identifying clinically relevant biomarkers, gene variants, dietary components and other risk factors that might shape new medical treatments of people living with diabetes (Dasman Diabetes Institute, 2021).

The DDI has a clinical skills centre and summer internship programs that provide opportunities for learning and training for undergraduates, graduates, health professionals, patients and caregivers (Dasman Diabetes Institute, 2021). The training programs aim to provide up-to-date and high quality educational activities to improve the knowledge and attitude of the participants and to encourage self-development that will eventually benefit the served community (Dasman Diabetes Institute, 2021).

The DDI has a specialised sports centre managed by medically oriented instructors who offer services to the Kuwaiti community (Dasman Diabetes Institute, 2021). The centre encourages a healthy lifestyle through the delivery of scientifically designed fitness programs that are tailored to suit the individuals' needs (Dasman Diabetes Institute, 2021).

Also, the centre has a variety of training options such as personal training, group studio glasses, aqua classes and open gym, including a few monthly outdoor activities that are usually arranged during the colder months of the year (Dasman Diabetes Institute, 2021).

People who are members at the DDI receive a complete medical and physical assessment by a diabetes nurse, as well as ongoing monitoring of their vital signs (Dasman Diabetes Institute, 2021). The fitness instructors design training programs tailored to people with diabetes to assist them control their blood glycaemic level and avoid micro and macro diabetes complications (Dasman Diabetes Institute, 2021). Also, members who do not have diabetes but are looking to improve their lifestyle have access to the institute's facilities (Dasman Diabetes Institute, 2021).

1.3.5 Nursing in Kuwait

Nursing in Kuwait began in 1911, when healthcare services in Kuwait commenced (Ministry of Health, 2020). However, nursing education was not formalised until 1962 when the Kuwait Ministry of Health, in cooperation with the Ministry of Education, established the Institute of Nursing to address the shortage of Kuwaiti nurses (Ministry of Health, 2020). At that time, the Institute of Nursing offered a three-year nursing program for students who had completed nine years of general education, leading to a nursing certificate (Al-Kandari & Lew, 2005; Al-Jarallah, Moussa, Hakeem, & Al-Khanfar, 2009). In 1974 another nursing education facility was established, the College of Nursing, which offered a 2.5-year Diploma of Nursing for students who had completed 12 years of high school. Since 1982 a four-year Bachelor of Nursing has been offered at the College of Nursing by the Public Authority for Applied Education and Training (Al-Jarallah et al., 2009; Al-Kandari & Lew, 2005).

Demographic data of the nurse population in Kuwait showed that in 2014, nurses represented 65% of the workforce in the Kuwaiti health system (World Health Organisation, 2018). The most recent statistics from the Ministry of Health in Kuwait indicate that there was a rate of 4.9 nurses per 1,000 population in the Kuwait Government sector in 2018 (Central Statistical Bureau, 2021). The nationality of nurses in Kuwait varies, the most common being Indian, followed by Filipino, Egyptian, Pakistani and Indonesian; many of whom have reported dissatisfaction with their job due to language and cultural barriers (Al Otabi, Shah, Chowdhury & Al-Enezi, 2004). For many Kuwaitis, nursing is not a highly sought after profession due to handling of blood and bodily fluids, and caring for people with contagious diseases (Al-Kandari & Lew, 2005). The Ministry of Health, in collaboration with the Kuwait Nursing Association, supports nurses financially, psychologically and physically to fulfil their duties in a safe environment (Kuwait Nursing Association, 2021). Although efforts have been made to increase Kuwaiti nurses' levels of job satisfaction, such as providing incentives (e.g. higher salaries) (Al-Enezi, Chowdhury, Shah, & Al-Otabi, 2009), the nursing role is still not fully recognised or professionally acknowledged by the public, hindering acceptability and the desire of Kuwaitis to join the profession (Alshammari, Adams, Windle, & Bowskill, 2019).

1.4 My interest in the field

I worked as a nurse in various hospital departments in Kuwait for five years before commencing a masters' degree in 2013. This change of environment helped me gain experience as both a nurse and researcher, which is discussed further below.

1.4.1 My interest in the field as a nurse

Following my Bachelor of Science in Nursing in Kuwait, I was employed as a nurse in the medical department of one of the government hospitals in Kuwait for seven years. I was

exposed to a variety of people from different backgrounds, including co-workers, managers and patients. This broad exposure enhanced my nursing abilities and improved my communication skills. Gradually, my nursing skills, knowledge, communication capabilities and qualifications equipped me with what was required to become the head nurse of the medical ward, where I also gained problem-solving skills. Shortly after my appointment as head nurse, the hospital opened a diabetes clinic, where I was asked to participate in research about diabetes among the hospital staff (AlRandi et al., 2014). This research led to me becoming a member of the hospital's diabetes team, exposing me to the lives of people living with diabetes in Kuwait. I provided patients with education that included medication administration, medication adherence, dietary habits and response to hyperglycaemic or hypoglycaemic episodes. However, the high workload and responsibilities impacted on the way I delivered patient education. I was a nurse, but I was taking on other healthcare professional roles, such as that of a dietitian and a pharmacist. This made me wonder if this was how patient education was supposed to be. It was at this point that I decided to widen my horizons and explore the world of research.

1.4.2 My interest in the field as a researcher

I completed my Master of Advanced Practice in the UK in 2014, where I conducted a systematic review of self-management education for people with type 1 diabetes mellitus (T1DM). This review helped me find many gaps in the research regarding the delivery of patient education to adults with T1DM conducted in Kuwait. My studies led me to completing a Graduate Diploma in Research Methods in Australia (2018), where I explored the experiences of people with T2DM post-bariatric surgery, finding an absence of patient education for bariatric surgery, unsuccessful diabetes education, and a lack of multidisciplinary team management of people with T2DM and bariatric surgery (Alobaidly, et. al, 2020). This research highlighted the potential significance of how a collaborative

effort that involved specialist physicians and surgeons could be combined for the benefit of patient health (Alobaidly, et al., 2020).

My interest in qualitative methodologies has led me to pursuing my PhD studies and exploring in greater depth the use of multidisciplinary teams for improved patient outcomes. As qualitative phenomenology is subjective, the use of first person and third person were both considered in the writing of this thesis. I have chosen to write this thesis in the first person as this best reflects my position in the research. Writing in the first person has allowed me to be more aware of my thoughts and more considerate of the data extracted and reported on, where I could be self-aware of my methodology and could reflect on being subjective of my experiences as a nurse (Davies, 2012).

1.5 Statement of the problem

It is predicted that the prevalence of obesity worldwide will almost double by 2045 (World Health Organisation, 2019a). In 2011, the IDF recognised bariatric surgery as a treatment option to assist people with T2DM to manage their blood glucose levels (International Diabetes Federation, 2017). Bariatric surgery has resulted in more significant and sustained weight loss in comparison to other weight-loss remedies, such as the use of pharmacotherapy, lifestyle adjustments and behavioural changes (Mayer & Dwyer, 2016). Advantages of the surgery have been reported, such as increased quality of life and psychological health, and a decrease in obesity-related comorbidities (Edward, Hii, Giandinoto, Hennessy, & Thompson, 2016; Jumbe et al., 2017; Lier, Aastrom, & Rørtveit, 2016). However, managing people undergoing bariatric surgery requires a multidisciplinary approach to ensure prolonged weight loss and T2DM remission (Khan, Bano, & Reddy, 2016). According to Nithin Shah (2016), an expert in bariatric surgery and its management, a multidisciplinary team that has a physician, endocrinologist, anaesthetist, intensivist,

nutritionist, physiotherapist, psychologist and bariatric coordinator is necessary to provide efficient care to people undergoing bariatric surgery.

In Kuwait, bariatric surgery has become popular in the management of obesity in recent years (Almarri et al.,2017; Jamal & Aminian, 2015). Successful outcomes of this surgery have included T2DM remission, decreased cholesterol levels, reduction in sleep apnoea, improved blood pressure readings (Abd Ellatif et al., 2014; Al Sabah et al., 2016) and increased quality of life (Al Khalifa & Al Ansari, 2018). However, weight regain and hyperglycaemia have been found in patients at two to five years post bariatric surgery (Garduno-Diaz, 2016). Although there are advantages to multidisciplinary team management in many aspects of health care, and the predicted success of a multidisciplinary team approach in bariatric surgery (Nimeri et al., 2016), a lack of infrastructure for a multidisciplinary team approach stands as one of the main barriers to implementing it in the management of bariatric surgery (Al Haqan, Al-Taweel, Awad, & Wake, 2017; Nimeri et al., 2016) and T2DM (Awad et al., 2011) in Kuwait and neighbouring gulf countries.

1.6 Significance of the research

Kuwait holds the ninth position worldwide for the prevalence of obesity at 38.8%, and seventh in diabetes at 23% (Ilsley, 2017). Kuwait also has one of the highest annual frequency of bariatric surgery performed worldwide (Haskin, 2017). At present, multidisciplinary teams have not been implemented in the management of patients using bariatric surgery as a treatment option for T2DM in Kuwait. A multidisciplinary team, including a nutritionist, is essential to maintaining favourable outcomes of bariatric surgery and to avoid weight regain following surgery, highlighting the need to allocate a multidisciplinary team to manage people before and after bariatric surgery (Al Haqan et al., 2017; Awad et al., 2011; Garduno-Diaz, 2016). The necessity of providing multidisciplinary

team management to support the health and diet of people after bariatric surgery has also been found in European settings (Aarts et al., 2017).

There is scarce literature investigating the perception of healthcare professionals and patients with T2DM, bariatric surgery and obesity in Kuwait and in the Eastern Mediterranean Region (Al Slamah et al., 2017; Alsairafi, Waheedi, & Alsaleh, 2019; Nimeri et al., 2017). Therefore, the need to investigate healthcare professionals, such as endocrinologists, surgeons, pharmacists, physiotherapists, psychologists and dietitians, is crucial in raising awareness about implications for bariatric surgery for both healthcare professionals and patients (Garduno-Diaz, 2016). Understanding what healthcare professionals expect from other disciplines in regard to T2DM management and care may identify gaps in service delivery when managing people who are obese, have T2DM and are eligible for bariatric surgery. Knowing the barriers to multidisciplinary team management of T2DM and becoming aware of other healthcare professionals' roles might provide people seeking to lose weight or manage their blood glucose levels via bariatric surgery with the most suitable education and information (Sørensen, Groven, Gjelsvik, Almendingen, & Garnweidner-Holme, 2020). This project aims to generate evidence to contribute to the development of effective patient education programs for people with T2DM, bariatric surgery and their families that are most suited to Kuwait society's culture and beliefs. The findings of this project could impact on policies or guidelines for improved quality of life for patients with T2DM who may be eligible for bariatric surgery. Additionally, this research project may impact on best practice service delivery for these patients by providing evidence-based information on the benefits of a multidisciplinary team management approach. Furthermore, this research project aims to contribute to the body of knowledge in this under-researched area of health care, as well as identify areas for future research.

1.7 Research question

An initial scoping of the literature on bariatric surgery for the management of T2DM was undertaken to identify relevant literature on this research topic. A vast number of articles were generated from the search. The literature was then filtered to healthcare professionals' perceptions of, and attitudes to, bariatric surgery as a treatment option for T2DM. Further searching was undertaken to combine healthcare professionals' attitudes on multidisciplinary team management for T2DM including bariatric surgery to answer the research question:

What attitudes, beliefs and perceptions do healthcare professionals have towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM?

1.7.1 Sub-questions

Three sub-questions were generated to ensure that the research question was able to be explored in depth. These were:

1. What is the meaning of 'providing a multidisciplinary team approach' for patients using bariatric surgery as a treatment option for T2DM as perceived by healthcare professionals in Kuwait?
2. What expectations do healthcare professionals in Kuwait have of other disciplines when managing people using bariatric surgery as a treatment option for T2DM?
3. What are the challenges that might face healthcare professionals when working in a multidisciplinary team in the management of people using bariatric surgery as a treatment option for T2DM?

1.7.2 Overall aim

The aim of this project was to explore the perceptions of healthcare professionals of different disciplines in T2DM care and management, the communication process between them, and the type of interprofessional collaboration management provided to people using bariatric surgery as a treatment option for T2DM. The purpose of this project is to generate evidence to improve the delivery of diabetes management services in Kuwait. The findings of this project aim to add to the body of knowledge in the area of diabetes and bariatric surgery. This new evidence-based knowledge aims to contribute to the development of patient education programs suitable for a Kuwaiti culture that might lead to a reduction in comorbidities associated with bariatric surgery and T2DM that a collaborative management approach may be more successful in achieving than current approaches.

1.8 Summary

Kuwait has a population with a high prevalence of both diabetes and obesity. Diabetes is a major health issue, with T2DM being more prevalent than other types of diabetes. Bariatric surgery and adopting a new lifestyle following surgery is recommended as a treatment option for both these comorbidities. However, the presence of a multidisciplinary team approach, currently absent in the Kuwaiti healthcare system, is needed in order to avoid undesirable complications and prolong T2DM remission and weight loss. Although Kuwait has an acceptable budget allocated to the health sector, the services provided to the Kuwaiti population for T2DM and bariatric surgery management is insufficient. Although ineffective patient education programs and lack of communication between healthcare professionals are barriers reported by patients with T2DM, the views of healthcare professionals involved in the management of this population need to be investigated. Therefore, exploring the perceptions of healthcare professionals could identify the issues

that might help resolve these barriers and eventually reduce the prevalence of these comorbidities.

This introductory chapter, ***Chapter 1*****,** provided an overview of the management of people with T2DM, the utilisation of bariatric surgery as a treatment option for T2DM, and the impact of a multidisciplinary team for the management of people with T2DM. The chapter also explained Kuwait as a study setting, in which the religion, culture and health contexts were presented. My interest in the research project, the research problem and its significance to health practice were also explained. This chapter also identified the research question, sub-questions and overall aims. The subsequent chapters are outlined below.

Chapter 2 reviews the literature on healthcare professionals' perceptions of a multidisciplinary team approach to T2DM management by using bariatric surgery as a treatment option. The integrative literature review sought to identify gaps in knowledge regarding healthcare professionals' attitudes, beliefs and perceptions towards a multidisciplinary team approach for people eligible for bariatric surgery as a treatment option for T2DM in Kuwait. The reviewed articles mostly present the perceptions of physicians when managing people with T2DM and obesity, the different methods of obesity management and the different types of multidisciplinary team approaches available to manage people with T2DM and obesity via bariatric surgery.

Chapter 3 outlines the methodological approach and research methods adopted in this research to achieve its aim. The chapter introduces the research paradigm that is aligned with interpretive description as the methodology. This chapter presents symbolic interactionism as the theoretical underpinning of interpretive description. This is followed by the philosophical underpinnings of the research methodology, which includes positionality and assumptions. The research method describes interviews and

observations as the methods for data collection. Ethical considerations are presented to ensure trustworthiness of how the research was conducted.

Chapter 4 presents the findings of the study and the analysis of the interviews and observations conducted. Seventeen healthcare professionals from different disciplines who directly manage people with T2DM at a government hospital in Kuwait were eligible to participate in this research project. The findings report the perceptions of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM that resulted in the generation of three major themes derived from the data analysis. Chapters 4, 5 and 6 present and discuss the major themes in turn. The evaluation criteria for interpretive description were followed to provide rigour and meaning to the interpreted findings. The first major theme: Barriers to efficient T2DM management, is described in detail in Chapter 4. Two subthemes that were included under this major theme were barriers imposed by the organisation, and barriers among healthcare professionals. This chapter ends with a summary of the first major theme found from analysis of the data.

Chapter 5 presents the second major theme: expectations towards a multidisciplinary team approach, in which participants identified the expectations that healthcare professionals hold towards multidisciplinary team management for people with T2DM eligible for bariatric surgery. Two subthemes were generated from this theme: the expectations of healthcare professionals of the organisation, and the expectations of healthcare professionals of other disciplines. This chapter ends with a summary of the second theme.

Chapter 6 presents the third major theme: the launch of a multidisciplinary team that describes and interprets the perceptions that healthcare professionals have towards the launch of a multidisciplinary team in managing people with T2DM who are then eligible for

bariatric surgery. Three subthemes were generated: professional growth, success of a multidisciplinary team and the challenges faced by a multidisciplinary team. This chapter ends with a summary of the third theme.

Chapter 7 discusses the findings about the perceptions of each of the healthcare professionals' disciplinary position. An integration of Lewin's planned change theory (Lewin, 1947), and the Systems Engineering Initiative for Patient Safety (SEIPS) model (Carayon et al., 2006) was used as the framework in which the discussion of the findings is presented. This chapter draws on published literature, reports and case studies, as well as grey literature, which illustrates the concurrence with my findings that are described in detail in Chapters 4, 5 and 6. This chapter also provides the distinctions found between Western-based literature, research from Kuwait and neighbouring countries, and the findings from my research project.

Chapter 8 presents the implications for future research and recommendations for clinical practice and education, and identifies the strengths and limitations of the research project. This chapter also presents the new knowledge discovered in this research project, and finally ends with the conclusion of the thesis.

Chapter 2: Integrative Literature Review

2.1 Introduction

This chapter presents an integrative review of the literature regarding healthcare professionals' perceptions of a multidisciplinary team approach to managing T2DM, with a specific focus on bariatric surgery. This chapter first presents the search strategy that was undertaken to answer the research question for this project:

What are the attitudes, beliefs and perceptions of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM?

An integrative review was conducted to include both experimental and non-experimental research studies of a phenomenon or healthcare problem, which is best suited to identifying gaps in nursing science, research, and practice and policy programs (Whittemore & Knafl, 2005). Following the search strategy, the selection criteria and critical appraisal process are explicated. Then the findings of the review are described in detail, focusing on the relative strengths and weaknesses of, as well as gaps in, the existing literature. The chapter concludes with a summary of the literature review and the significance of undertaking the current research project.

2.2 Literature search strategy

This section describes the methods used in the literature search. These methods include the initial scoping, search strategy, selection criteria, the article appraisal system used and the results of the review.

2.2.1 Initial scoping search

An initial scoping of the literature was undertaken by searching the Elsevier Scopus database using the search terms ‘bariatric surgery’ and ‘type 2 diabetes mellitus’ to identify keywords for the full search. A large number of results were returned, requiring the search strategy to be limited to articles on healthcare professionals’ perceptions and attitudes about bariatric surgery as a treatment option for people with T2DM. To refine the scoping search around healthcare professionals, multidisciplinary team management when using bariatric surgery as a treatment option for people with T2DM was included. This process guided the search to ensure inclusion of the most relevant articles.

2.2.2 Search strategy

Following the initial scoping search, a comprehensive search for relevant articles focusing on the major components of the research question – healthcare professionals, multidisciplinary teams, T2DM and bariatric surgery – was performed using the following online databases: PubMed, Scopus, CINAHL, MedLine, and Ovid (PsychInfo, Health and PsychoSocial instruments, and Psych Articles). These databases were chosen because they contain a substantial number of articles in the medical, nursing and psychology fields. The keywords used in these databases were: ‘Diabetes Mellitus’ OR ‘Diabetes type 2’ AND ‘Obesity’ OR ‘Overweight’ OR ‘Body Mass Index’ AND ‘Perception’ OR ‘Attitudes’ OR ‘Feeling’ OR ‘Emotion’ OR ‘Thinking’ OR ‘Behaviour’ AND ‘Bariatric Surgery’ OR ‘Metabolic Surgery’ OR ‘Weight loss Surgery’ AND ‘Healthcare Professional’ OR ‘Healthcare Provider’ OR ‘Interprofessional Collaborations’ OR ‘Multidisciplinary Team’ OR ‘Interprofessional Practice’ AND ‘Doctor’ OR ‘Physician’ OR ‘Surgeon’ OR ‘Endocrinologist’ OR ‘Nurse’ OR ‘Pharmacist’ OR ‘Dietitian’ OR ‘Psychologist’ OR ‘Physiotherapist’. These keywords and their MeSH terms were used via the Boolean search method where they were utilised individually and in combination in the chosen

databases to identify relevant articles. A hand search of the reference lists of included articles was also performed to ensure that all relevant articles were included.

2.2.3 Selection criteria

To be included in this literature review, articles had to focus on healthcare professionals' perceptions and attitudes towards a multidisciplinary team approach when managing people with T2DM, obesity or bariatric surgery. The literature search identified different healthcare professionals in the management of people with T2DM and bariatric surgery, such as endocrinologists, surgeons, nurses, dietitians, pharmacists, physiotherapists and psychologists. The search was performed to find articles in the past 20 years. However, articles that were relevant to the research topic only appeared in the last 13 years, from 2008 to 2021, including papers on research conducted internationally and in Kuwait. The articles included were from peer-reviewed journals and were primary research studies and literature reviews.

The exclusion criteria were articles that reported on patient and general public or societal perceptions, experiences and attitudes to T2DM management, obesity management and bariatric surgery, thereby concentrating on articles that focus on healthcare professionals' views and perceptions on T2DM management, and eliminating the experiences and views of non-healthcare professionals to better answer the research question. Journal articles that were published in a language other than English were excluded due to conducting this research project in English, and the possibility of misinterpretation when translating from one language to another. Articles on case reports, brief communications and conference proceedings were excluded because they were not primary research. Theses and dissertations were considered grey literature and were also excluded because they have not been peer-reviewed and could therefore provide misleading information and conclusions. The full text of articles that only provided an abstract were requested from the

university library to assess their relevance for this review. Table 2.1 lists the full inclusion and exclusion criteria.

Table 2.1: Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
Papers focusing on healthcare professionals' (endocrinologists, surgeons, nurses, dietitians, pharmacists, physiotherapists and psychologists) perceptions of multidisciplinary teams	Papers focusing on patient, general public and societal perception or attitudes
Papers on obesity, bariatric surgery or T2DM management	Papers focusing on conditions other than obesity, bariatric or T2DM management
Papers published in English between 2008 and 2021	Papers published in languages other than English or before 2008
Peer-reviewed journal articles	Grey literature (theses and dissertations)
Primary research articles and research syntheses such as systematic reviews, literature reviews and meta-analyses using qualitative articles, quantitative articles and mixed method approaches	Journal articles that provide abstracts only and no 'full-texts available' papers, case articles, brief communications and conference papers

Note: T2DM = type 2 diabetes mellitus

2.2.4 Study selection screening

All documents identified through the search were exported to Endnote to identify and remove duplicates. I undertook initial title and abstract screening to assess eligibility with articles excluded that did not meet the required criteria. I then retrieved the full text of all articles that appeared relevant and assessed them against the inclusion and exclusion criteria, refined, and then removed more articles that did not meet the criteria. Articles that met the inclusion criteria were selected for review.

2.3 Critical appraisal tool

The Johns Hopkins Nursing Evidence-based Practice (JHNEBP) research evidence appraisal tool (see Appendix 1) and its evidence level and quality guide (see Appendix 2)

was utilised to evaluate the relevant articles. The JHNEBP is a validated tool designed to identify the type of research design that also evaluates the quality of evidence by critically appraising the method of the research conducted to assess for validity and reliability of the research approach and findings (Dang & Dearholt, 2017).

2.4 Analysis of the included articles

The included articles were analysed using Braun and Clarke's (2006) six steps for thematic analysis:

Step 1: Familiarising oneself with the data by noting initial ideas.

Step 2: Generating initial codes.

Step 3: Searching for themes by collating codes into potential categories.

Step 4: Reviewing themes by checking that they link to the coded extracts (Level 1), then checking that they link to the entire dataset (Level 2), then reviewing data to search for additional themes, and generating a thematic map of the analysis.

Step 5: Defining and generating clear names and definitions for each category.

Step 6: Producing the report and relating the analysis back to research question.

2.5 Results

Using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram provides a breakdown of the number of records identified, included and excluded, as well as the reasons for exclusions (Moher, Liberati, Tetzlaff, Altman, & Prisma Group, 2009; Page et al., 2021). The electronic database search yielded 347 articles. Out of the 347 articles, 12 were duplicates, which resulted in 335 articles for review. Two hundred and sixty-four articles were excluded following title and abstract screening, resulting in 75 articles being eligible for full-text screening. Handsearching the reference lists of relevant articles generated another 34 articles. An additional 74 articles

were excluded after full-text screening and critical appraisal using the JHNEBP appraisal tool as they did not meet the inclusion criteria. A total of 35 peer-reviewed articles were included in the literature review (see Figure 2.1)

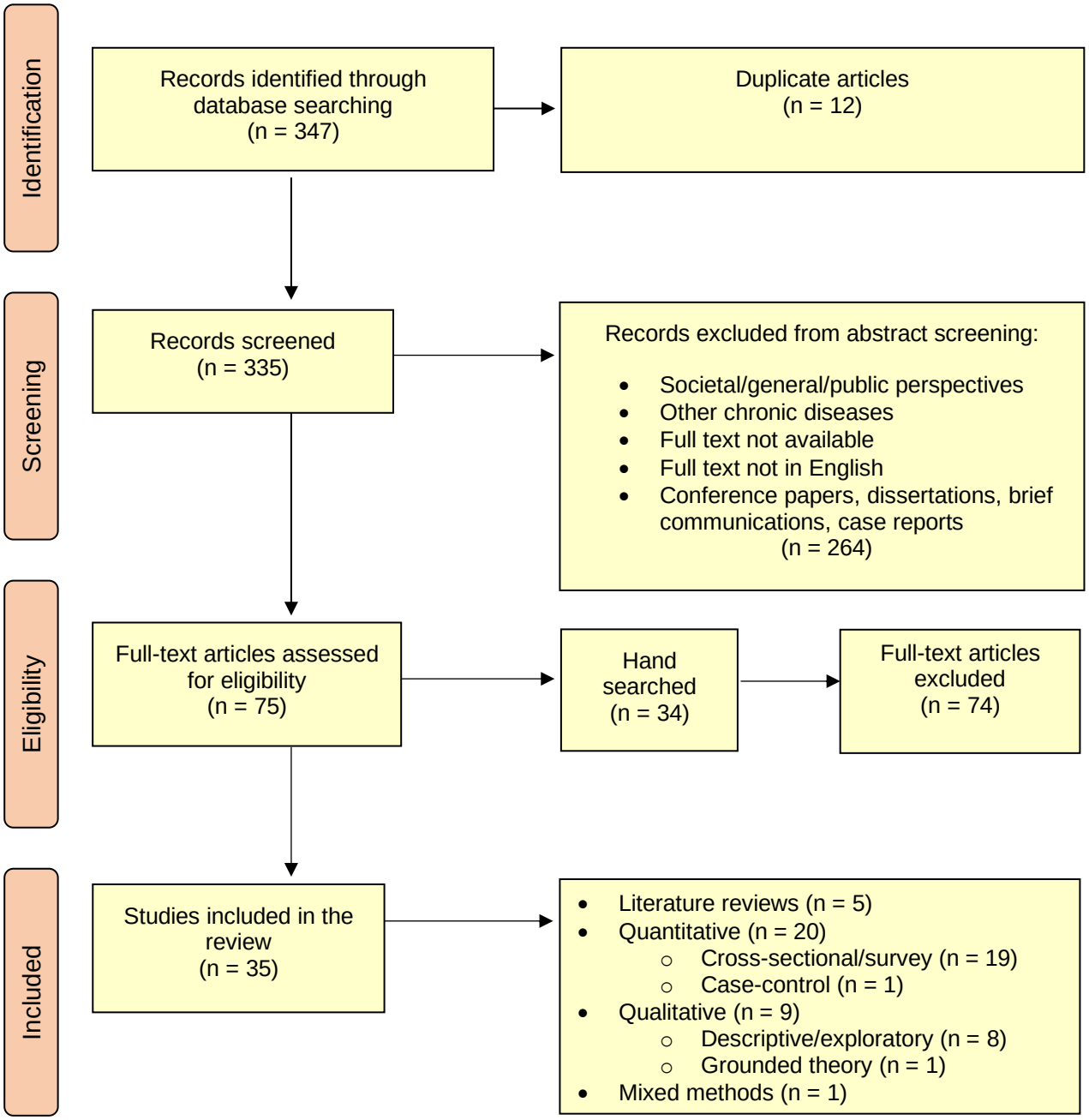

Figure 2.1: Preferred Reporting Items for Systematic Reviews and Meta-Analyses flow diagram of the search strategy and article selection process

After completing the JHNEBP appraisal for each of the 35 articles, the JHNEBP evidence level guide situated the included literature at Level III and Level V for non-experimental research. Evidence Level III is allocated for non-experimental articles, systematic reviews

of a combination of methodologies and qualitative articles (Dang & Dearholt, 2017). Evidence Level V is allocated to articles that are based on the author's experiences and non-research evidence such as literature reviews, case reports, expert opinion and quality improvement or financial evaluation (Dang & Dearholt, 2017). The JHNEBP quality guide situated the articles as levels A (high quality) and B (good quality) (see Appendix 2).

The search strategy and article selection process resulted in the inclusion of literature reviews (n = 5); quantitative research (n = 20), including case control (n = 1) and cross-sectional articles (n = 19); qualitative research (n = 9), including descriptive and exploratory research (n = 7) and grounded theory (n = 1); and a mixed methods study (n = 1) (see Appendix 3 for a summary of all articles reviewed).

Most articles were conducted in the USA (n = 7), followed by Kuwait (n = 5) and Canada (n = 3). The UK, the Kingdom of Saudi Arabia (KSA) and the UAE each contributed two articles. Bahrain, Oman, Germany, France, Greece, Australia, New Zealand, China and the Middle Eastern Region contributed one article each. Five articles were literature reviews, of which three were global, and one each specific to the USA and France.

The 35 included articles focused mostly on the perceptions of physicians (n = 17), followed by the perceptions of healthcare professionals in general (n = 6), the perceptions of pharmacists (n = 3), the perceptions of general surgeons (n = 1), the perceptions of nurses (n = 2), and finally, the perceptions of healthcare professionals of a multidisciplinary team approach (n = 5) in the management of people having bariatric surgery as a treatment option for T2DM.

Four themes were produced: healthcare professionals' perceptions of T2DM management, obesity and its management, bariatric surgery, and multidisciplinary team management for T2DM and bariatric surgery. These themes are discussed in detail in the following sections.

2.5.1 Category 1: Healthcare professionals' perceptions about the management of type 2 diabetes mellitus

The first category presents the perceptions healthcare professionals have when managing people with T2DM. Seven articles were included in this category: one mixed method, four qualitative and two quantitative. These articles were dated from 2014 to 2021 and all obtained ethics approval. Most of the articles focused on the perceptions of physicians and pharmacists. Each study is described in the following paragraphs.

Al-Taweel et al. (2014) undertook a mixed methods study involving a survey on the pharmacists' role in the management of diabetes, as well as focus groups with pharmacists, to understand their shared experiences regarding the delivery of care to patients with T2DM in Kuwait. The study included distribution of an online questionnaire to pharmacists throughout Kuwait, with a 20% response rate (n = 50). The focus group involved seven pharmacists and was conducted to obtain their shared experiences regarding the delivery of care to patients with T2DM. The study found that pharmacists were uncomfortable discussing medication-related issues with patients but were comfortable talking about screening and blood pressure levels. Other studies conducted in Kuwait have similarly found a lack of communication between healthcare professionals, and assumptions about pharmacists being medicine dispensers (Alsairafi et al., 2019). The strength of the Al-Taweel et al. study is in the mixed methods methodology. By using quantitative and qualitative approaches, the researchers were able to obtain as much knowledge as possible from the pharmacists' point of view. The limitations of this study were the small number of participants, despite the distribution method used for the questionnaire. A cross-sectional questionnaire methodology was also considered a limitation because the questionnaire only provided information for a specific point in time and did not represent the overall picture of the delivery of T2DM care to patients according to the authors.

The four qualitative articles identified within this category used semi-structured interviews with healthcare professionals in Kuwait, and one study used semi-structured interviews and observations of healthcare professionals in Oman. The first qualitative study, by Waheedi, Jeragh-Alhaddad, Awad, and Enlund, et al. (2017) was on the perceptions of 21 primary care physicians on their patients' non-adherence to T2DM medication. The physicians reported that insufficient T2DM knowledge affected patients' diabetes treatment and their ability to adhere to self-management of their blood glucose levels. Another study, by Alsairafi et al. (2019) involving interviews with patients with T2DM in Kuwait found similar findings regarding insufficient education provided to patients with T2DM, which might have an impact on their knowledge and ability to self-manage blood glucose levels. The strength of the study by Waheedi, Jeragh-Alhaddad, et al. was that the methodological approach included semi-structured face-to-face interviews with 21 physicians. The limitations of this study that were noted by the authors included that the perceptions of physicians could be presented as reporting bias.

The second qualitative study was conducted on nurses working in a healthcare facility in the KSA (Alotaibi, Gholizadeh, Al-Ganmi, & Perry, 2018). This study explored nurses' perceptions regarding diabetes care and management and identified factors influencing nurses' knowledge acquisition in this area. Sixteen nurses participated in semi-structured interviews, and the authors describe their roles as being similar to the roles of other disciplines. This study also found that nurses had limited knowledge on diabetes care, which made other disciplines reluctant for nurses to manage patients with diabetes. The limited knowledge of nurses on diabetes care and management was also reported in an Omani setting, which disrupted the quality of diabetes service delivery to patients receiving treatment at their centre (Al-Alawi, Al Mandhari, & Johansson, 2019). The strength of the Alotaibi et al. (2018) study lies in the qualitative design, which yielded rich data on the nurse's limited role and their lack of confidence in diabetes management. The limitations

identified by the authors included that the data collection was carried out in a single centre and would therefore not represent actual diabetes practice in KSA.

The third qualitative study was conducted to explore challenges that care providers faced in a diabetes management clinic in Oman (Al-Alawi et al., 2019). The data were collected via semi-structured interviews and observations of care providers between January and March 2016, and the authors report that the lack of space and computers, and the shortage of care providers were barriers care providers faced while delivering diabetes management to an Omani population. Their findings were similar to the findings in a Kuwaiti setting, where diabetes management was found to be inefficient due to lack of space for pharmacists to provide counselling, the insufficient number of staff able to provide counselling, and the lack of communication between pharmacists and other disciplines (Al-Taweel et al., 2014; Alsairafi et al., 2019). The Omani study by Al-Alawi et al. (2019) described and presented rich information regarding diabetes management from different disciplines, which included physicians, nurses, dieticians, health educators, pharmacists, an assistant pharmacist, a psychologist and a medical orderly. These care providers belonged to five diabetes clinics, which provided understanding of how diabetes management was being delivered to the Omani people. However, the limitations of this study included the study design, which only presented a snapshot of diabetes practice at a specific time, and the uneven number of participants from each discipline who participated, which could provide under- or over-representation of some disciplines over others.

The fourth qualitative study assessed the perceptions of 21 physicians and 40 patients with T2DM on the role of pharmacists in T2DM management in Kuwait (Alsairafi et al., 2019). This study reported that the main sources of T2DM information for patients in a Kuwaiti setting were physicians and nurses. Physicians reported that they were not satisfied with the pharmacists' role as educators because these physicians' perceived that

pharmacists lacked knowledge about the subject area. Pharmacists were also described by physicians as uncooperative and avoided discussions with physicians when it came to prescribing oral hypoglycaemic medication for people with T2DM. For instance, pharmacists were reported as informing patients of the physician's error without first notifying the physician. Physicians also reported a lack of confidence regarding pharmacists' knowledge of T2DM medications. In addition, the 40 patients with T2DM interviewed provided information regarding the barriers to adhering to their diabetes medication as being unethical behaviours from the physicians, such as only providing up-to-date diabetes treatments to a selected number of patients. Both physicians and patients reported that insufficient numbers of pharmacists and a lack of time prevented them from providing comprehensive education. Other barriers to appropriate patient education reported by the authors included a lack of space and the need to improve communication skills, which was similar to the findings of Al-Taweel et al. (2014) on pharmacists in Kuwait. The strengths of their study include the sample size of 21 physicians and 40 patients from all five health regions in Kuwait, and the inclusion of participants from both rural and urban sociocultural backgrounds. However, the study was cross-sectional in its design, which meant that the collected data did not represent the actual care delivered throughout the year. Another limitation was that the study focused on pharmacists' perceptions, without presenting the possible impact of other healthcare professionals on patients' non-adherence to T2DM medication.

The two quantitative studies in this category adopted a cross-sectional design to explore the perceptions of healthcare professionals in diabetes management (Al Haqan et al., 2017; Eshbair, El-Dahiyat, & Jamshed, 2021). The first quantitative study included in this theme was a cross-sectional study looking at 168 completed surveys on pharmacists' attitudes towards diabetes management in Kuwait (Al Haqan et al., 2017). This study found limited time and facilities were the reasons behind patients with T2DM not adhering

to their medications. This finding corresponds with a qualitative study reporting that pharmacists complained that a lack of space hindered them from providing patient education for people with T2DM (Alsairafi et al., 2019). The strengths of the survey study by Al Haqan et al. (2017) include identifying barriers in the care provided in T2DM management and a survey response rate of 84% (n = 168). The weaknesses identified in their study include that the cross-sectional methodology did not identify any changes in the attitudes and only presented a snapshot of what was happening in practice, and that the survey only included pharmacists from one health region (out of five) in Kuwait. The delivery of care might differ depending on the healthcare centre and region. However, this was not investigated. Also, respondents were not asked for any verification of demographics, which could have introduced over-representation of data and that the sample could not be representative of the population, thus the results were not able to be generalised to the Kuwaiti population.

The second quantitative study was a cross-sectional survey using a self-administered questionnaire which consisted of open and close-ended questions to evaluate pharmacists' diabetes care and management, and the barriers to providing patients with diabetes pharmaceutical counselling (Eshbair et al., 2021). The research was conducted in the UAE from July to September 2018, where 300 pharmacists participated (60% response rate) in the survey. These UAE pharmacists reported that they were inadequate in providing diabetes care to patients due to the lack of communication between them and other disciplines, and the underestimation of other disciplines and patients of their capabilities and knowledge where these pharmacists were seen as medication dispensers only. Pharmacists in Kuwait reported the same barrier when providing diabetes management, where they were not regarded as knowledgeable in pharmaceutics but rather medication distributers and unreliable when it came to diabetes care and management (Al-Taweel et al., 2014; Alsairafi et al., 2019). The strengths of this study by

Eshbair et al. (2021) included the high response rate, and that the survey used provided insight into the role and limitations of a pharmacist in diabetes management. The limitations included the data collection setting where only one emirate was included, which would not reflect actual practice in the UAE.

Although the articles considered in this category utilised different methodological approaches to provide insight into the perceptions of physicians and pharmacists, the perceptions of other healthcare professionals, namely nurses, diabetes educators and dietitians, were discussed sparingly. For the management of patients with diabetes, other disciplines' roles need to be explored to understand the overall delivery of diabetes care. This scarcity highlights a gap in the literature and current knowledge pertaining to the management of people with T2DM globally.

2.5.2 Category 2: Healthcare professionals' perceptions about obesity and its management

The second category presents the perception healthcare professionals have towards people with obesity, the management of obesity and the barriers they encountered during obesity management. There were nine articles included in this theme: six quantitative articles, two qualitative, and one literature review. These articles focused primarily on physicians' perceptions, attitudes, and knowledge, and were dated from 2008 to 2018. Most mentioned gaining ethics approval for their study. Each study is described and discussed in the following paragraphs.

Six quantitative articles were included in this category (Al-Ghawi & Uauy, 2009; Al-Najjar, Al-Jasem, Al-Quraini, Salama, & El-Shazly, 2012; Menez, Cheskin, & Geller, 2013; Petrin, Kahan, Turner, Gallagher, & Dietz, 2017; Sebiany, 2013; Simon & Lahiri, 2018). A cross-sectional survey examined the knowledge and practice of 97 physicians for obesity prevention and management in a single healthcare centre in Bahrain in 2006 (Al-Ghawi &

Uauy, 2009). The survey showed that physicians had limited knowledge about managing people with obesity and were willing to refer them to dietitians for a weight management plan. Similarly, surveys that evaluated physicians' knowledge in Kuwait (Al-Najjar et al., 2012) and KSA (Sebiany, 2013) also showed low knowledge when managing people who are overweight and obese. Physicians also had low expectations from the weight management programs due to low patient motivation (Al-Ghawi & Uauy, 2009). Pharmacotherapy and surgery were not utilised due to their high cost, lack of availability and absence of guidelines, as well as physicians' concerns regarding the risks. The strengths of Al-Ghawi & Uauy's (2009) study were the sample size, the cultural similarities to the current research project's setting (Kuwait) and the identified barriers. The limitations identified were the use of a cross-sectional design, which does not identify change in knowledge or practice (Polit & Beck, 2021), the sample being taken from one centre, thus only representing the experience and attitude of that centre, and the lack of other healthcare professionals' perceptions (Al-Ghawi & Uauy, 2009). Additionally, the authors did not mention self-reporting bias and ethical considerations. Finally, this study was conducted over 11 years ago, meaning the results are now dated.

A quantitative cross-sectional survey was conducted in Kuwait in 2012 examining the knowledge and attitudes of physicians towards obesity management (Al-Najjar et al., 2012). The sample consisted of 352 physicians from all primary health centres in Kuwait. The survey revealed that over 80% of the physicians did not undergo training, or had not attended a course for obesity management, but were interested in doing so. Over 60% of the sample physicians attended lectures on obesity management only, or thought their knowledge was limited. About 50% reported that they were not aware of obesity guidelines. Approximately 70% of the physicians had low levels of knowledge about bariatric surgery and 40% about pharmacotherapy managements. Only 26% of the respondents in that study thought obesity was a health problem in Kuwait. The findings in

this study by Al-Najjar et al. (2012) are similar to those of a survey conducted in Bahrain that examined physicians' knowledge on obesity management (Al-Ghawi & Uauy, 2009), despite the three-year gap between these two studies. The strength of the study by Al-Najjar et al. is that it identified the attitudes of physicians in Kuwait and the sample size was significant. However, the limitations include that a cross-sectional study design was utilised, which can only present the knowledge and attitudes at a specific point in time, and that the perceptions of other healthcare professionals were not included.

Another quantitative cross-sectional survey was conducted in the KSA, a neighbouring country with similar culture, traditions and religion to the current research project setting (Kuwait), which assessed the knowledge of physicians in the management of patients who were overweight and obese (Sebiany, 2013). The survey found that less than 20% of the physicians received training in obesity management, which was similar to the findings from a Kuwaiti survey conducted on physicians (Al-Najjar et al., 2012). Over 70% of the respondents in the KSA survey agreed that weight reduction programs were ineffective but still advised this strategy to their patients because there was a lack of availability of other resources, such as the absence of clinical guidelines and the inability to prescribe weight-loss medications (Sebiany, 2013). The strength of this study was the identified barriers to obesity management, such as a lack of specialised healthcare professionals (dietitians), lack of facilities and resources, absence of clinical guidelines, the inadequate healthcare system, and patients' non-adherence due to ineffective obesity management plans. The limitations identified were in the survey design, which did not identify change; the self-administered questionnaire, which could be biased; the focus on physicians' perceptions without including other healthcare professionals; and that this study was conducted over nine years ago (Sebiany, 2013).

In a Western setting, a quantitative survey study was conducted in the USA to compare perspectives of the general public and healthcare professionals in urban and rural settings for the management and treatment of obesity (Menez et al., 2013). The survey was conducted in 2010 (over 11 years ago) in two urban centres and two rural physician clinics, and involved a total of 371 participants from the general public, but only 40 physicians due to the unsuccessful method of survey distribution and accessibility. Results from the survey found that physicians' management in the rural area focused on family history of obesity, and recommended diet and exercise for both patients and their relatives. By contrast, physicians in the urban area focused on patients eating balanced healthy meals, which was found to be a more successful strategy. Further, physicians in the rural settings were less optimistic about weight management through diet and exercise. The survey also showed that physicians with more experience were more likely than physicians with less experience to discuss obesity management with patients who asked about it. The strength of this study by Menez et al. (2013) was in the comparison between two different settings, rural and urban, which showed that the priority in obesity management depended on the population being treated. The limitations identified included the cross-sectional survey design that only represented data at that particular time. The distribution method of the survey was more convenient for physicians to access than other healthcare professionals, which might explain the absence of other healthcare professionals' participation. Another American study also found that physicians had easier access to survey than other disciplines which could explain why other disciplines were the minority in participants (Petrin et al., 2017).

Another quantitative study in the USA assessed healthcare professionals' attitudes and practices of obesity counselling via a web-based survey involving 1,501 healthcare professionals (77% response rate) (Petrin et al., 2017). Most healthcare professionals who participated were primary care physicians, obstetricians/gynaecologists and nurse

practitioners who believed that obesity counselling was a shared responsibility. The healthcare professionals reported that there was no difference in who provided counselling to patients. However, the nurse practitioners (87% female) were more likely than other healthcare professionals to report a preference for a preferred language. Many healthcare professionals reported using biased language that was offensive to people with obesity, and which made patients seek other healthcare professionals or avoid medical visits. The strength of this study by Petrin et al. (2017) was the large number of participants. However, this study used a survey design, which means it could not identify change in circumstances and is only representative of the issue at a single point in time (Polit & Beck, 2021). Also, other healthcare professionals, such as dietitians, psychologists, endocrinologists and bariatricians were not mentioned, and their absence/exclusion from the survey was not explained (Petrin et al., 2017). Although this study had a strong sample size for possible generalisability, it lacked the qualitative aspect of participants views to provide depth to the findings that were not achievable via the survey tools used.

Another study in the USA conducted an online survey in a large multicentre health system in 2017 to examine healthcare professionals' management and delivery of care for people with obesity (Simon & Lahiri, 2018). The survey was emailed to 430 healthcare professionals, of which only 111 responded (26% response rate). All the respondents were physicians, similar to other studies conducted in the USA and reported on in this review chapter (Menez et al., 2013; Petrin et al., 2017), which might have been related to the difficulty other healthcare professionals had accessing the survey. The survey showed that physicians were more likely to identify elevated BMI levels and were less likely to discuss weight-loss options due to a lack of time (Simon & Lahiri, 2018). Approximately 25% of the physicians believed that providing patients with weight-loss advice was ineffective. Over 70% of the physicians said that lectures in obesity had provided them with good knowledge about obesity, whereas 14% felt they lacked understanding of available obesity

management. Weight-loss medications and bariatric surgery were not commonly suggested to patients because physicians were unaware of the adverse reactions. Endocrinologists were the most likely to refer patients for bariatric surgery because of their direct involvement in the field of weight gain. The strength of this study included identifying the barriers healthcare professionals faced when providing obesity management, such as adverse effects, comorbidities and cost to the patient. The limitations were that the survey study design did not represent overall practice, there was a small sample size and the questionnaire used in the survey was unvalidated.

There were two qualitative articles identified under this category (Ali, Bernsen, & Baynouna, 2009; Claridge et al., 2014). The first investigated the perceptions of physicians regarding possible barriers to weight loss in Emirati women (Ali et al., 2009). A grounded theory methodology was used involving 24 individual face-to-face interviews with Emirati women and focus groups with six healthcare family physicians. This study identified several factors that might have influenced obesity in an Emirati female population, including personal (low physical activity due to easy access of house maids and transportation options), cultural (social gatherings that influence high-caloric intake), socioenvironmental (easy access to fast food) and the healthcare system (limited dietitians and lack of patient educational support). The strength of this study by Ali et al. (2009) was that it was one of the first to explore perceptions of obesity in the UAE, which is known to have similar cultural practices with other neighbouring gulf countries. Another strength was the identification of barriers to weight loss, which could assist healthcare professionals in providing successful obesity management for their patients. One limitation was that the interviews were not audio-recorded, which could introduce recall bias or provide inaccurate information by the researcher/s. Another limitation was that the sample was taken from one healthcare centre, which might differ to the practices in obesity management in other centres across the UAE.

The second qualitative study in this category explored 12 physicians' opinions of weight management interventions in one region in New Zealand (Claridge et al., 2014). The study revealed that physicians acted as educators and believed that patients lacked motivation to lose weight effectively. The physicians also felt that weight-loss interventions were ineffective, and that they rarely referred to guidelines while managing overweight and obese people. This study reported that bariatric surgery was perceived negatively due to its adverse psychological impact on patients, despite the positive feedback that physicians often received from patients undergoing the surgery. Physicians in this study also reported that their lack of knowledge about the long-term outcomes of bariatric surgery made them hesitant to refer patients, which was similar to the finding of another study conducted in the USA (Simon & Lahiri, 2018), which identified the barriers to providing effective weight management. The main limitation in the study conducted by Claridge et al. (2014) was the sample size. In spite of interviewing 12 participants, they were from 11 different health centres, where each centre may have had different protocols and care service. Additionally, this study was conducted over seven years ago, hence may not reflect current views or practices.

The literature review identified under this category was conducted to understand how physicians managed and treated adults who were overweight and obese globally (Dixon, Piterman, O'Brien, & Hayden, 2008). This study included 43 articles from the USA (n = 25), the UK (n = 8), Europe (n = 3), Australia (n = 2), Asia (n = 2) and Israel (n = 1). The review identified a lack of knowledge about obesity treatment options, inadequate training, negative beliefs that obesity was due to laziness and beliefs about the ineffectiveness of pharmacotherapy. Physicians typically referred patients to dietitians for obesity management. This referral was found by the authors to have a positive impact on dietitians' counselling on patients' motivation to lose weight. The limitation of this review for

the purpose of this current research project is that the date of the articles that were included ranged from 1987 to 2007, between 14 and 34 years ago.

Overall, this category of healthcare professionals' perception of obesity and its management identified that research was conducted primarily with physicians, and demonstrated that physicians had insufficient knowledge about obesity management, which might have provided patients seeking to lose weight with limited options. Articles on other healthcare professionals such as psychologists, nurses and dietitians were not found. This review of the literature for this theme highlighted a gap in the body of knowledge in the field of obesity management and emphasises the importance of studying other healthcare professionals' perceptions and attitudes when managing people with obesity.

2.5.3 Category 3: Healthcare professionals' perceptions of bariatric surgery

The third category presents the perceptions that healthcare professionals have about bariatric surgery as a treatment option for people with obesity and/or T2DM. Ten articles were included in this theme: nine quantitative, and one qualitative. Most articles focused on physicians' perceptions, attitudes and knowledge. These articles were dated from 2012 to 2019 and most mentioned obtaining ethics approval for their study. Each study is described and discussed in the following paragraphs.

Nine quantitative cross-sectional survey articles were included under this category. One study was on nurses, one on surgeons, and seven on physicians' perceptions and attitudes towards bariatric surgery. The studies were conducted in the USA, Europe and Asia, and are discussed in the following paragraphs.

In 2012, a survey study in the USA investigated the attitudes of physicians towards referring patients with T2DM for bariatric surgery (Sarwer et al., 2012). A total of 93

physicians participated in the survey, in which 42 were primary care physicians and 20 were endocrinologists representing a 29% response rate. The survey showed that physicians had positive attitudes towards bariatric surgery as a treatment for T2DM but lacked knowledge about follow-up care, which hindered them from referring patients for the surgery. Less than 50% of the participants reported that they were knowledgeable about the various types of bariatric surgeries or that they were confident managing patients following the surgery. Similarly, more recent articles conducted in Europe and Asia have reported a lack of knowledge about post-surgical care for bariatric patients (Auspitz et al., 2016; Jung, Luck-Sikorski, König, & Riedel-Heller, 2016; Tork et al., 2015; Zacharoulis et al., 2018). However, 35% of the physicians identified a lack of resources as a barrier for providing long-term post-surgical care competently (Sarwer et al., 2012). The strength of this study was the ability to identify the perceptions of physicians who managed people with T2DM on their referral for bariatric surgery. This study was limited by the study design, which provided only a snapshot of the perceptions investigated; the small sample size of physicians; selection bias, where physicians who favoured bariatric surgery might have participated; and that the survey might not have been presented to an ethics committee, which might have affected the reliability, clarity and validation of the questions and results of the survey. Additionally, this study was focused on physicians only, and was conducted nine years ago, making it dated.

Another quantitative study in the USA conducted in 2015 (over six years ago) investigated primary care physicians via a survey to evaluate their perceptions of bariatric surgery and their readiness to refer eligible patients (Tork et al., 2015). Fifty-seven physicians completed the survey (35.4% response rate), which revealed negative attitudes accompanied by low confidence of physicians in managing people seeking obesity treatment via bariatric surgery due to the high cost of follow-up care that was not covered by insurance companies. Other reasons that interfered with referring patients for bariatric

surgeries were the physicians' lack of knowledge regarding complications and adverse effects of the surgery, which corresponded with an earlier study conducted in the USA on general physicians (Sarwer et al., 2012). The limitations of this study by Tork et al. (2015) were in the study design, which provided a snapshot of a point in time, the small sample size and low response rate that is not representative of the population and hence could not be generalised. Additionally, this study only focused on physicians.

In Greece, a survey was conducted to assess the perception of Greek doctors on obesity management that included bariatric surgery (Zacharoulis et al., 2018). A sample of 300 doctors completed the survey (60% response rate). The survey was validated by bariatric experts at an academic centre. A low level of knowledge about bariatric surgeries, low awareness about the surgery, high operation fees and a lack of accessibility to the bariatric centre were some of the barriers identified. Articles conducted in the USA and Canada also found that the doctors in their study lacked knowledge about bariatric surgery (Sarwer et al., 2012; Tork et al., 2015). The strengths of this more recent study by Zacharoulis et al. (2018) were the high response rate and that the study identified the barriers to referrals for bariatric surgery. One limitation of this study is the study design, which provided a description of the attitudes and perceptions at a point in time, and does not represent the whole population. Another limitation is the self-reporting, which might have presented as recall bias. Additionally, this study only examined one type of healthcare professional (doctors) views.

In a study setting in Canada, a survey was distributed to family physicians (n = 165) in 2014 to assess their knowledge and perceptions of bariatric surgery (Auspitz et al., 2016). The survey was validated by a focus group of seven primary care physicians. This study found that around 70% of physicians would mention bariatric surgery to their morbidly obese patients. However, only 5% of their patients would be referred for the surgery

because of physicians' limited knowledge about the types of bariatric surgeries and their risks, the lack of patient education for bariatric surgery and the lack of patient awareness. Limited knowledge of physicians was also found in an earlier study conducted in 2012 (Sarwer et al., 2012), and in studies conducted around the same time (Jung et al., 2016; Tork et al., 2015; Zacharoulis et al., 2018). The strength of this study by Auspitz et al. (2016) lies in its identification of barriers to referral to bariatric surgery. The limitations include the study design, which did not identify change, included self-selection bias due to incentives offered to complete the survey, and the possibility of recall bias due to self-reporting by physicians. Additionally, this study was based in a Western country with different cultural considerations to Kuwait, was conducted seven years ago and only focused on family physician's knowledge and perceptions.

In another study conducted in Canada, a survey was distributed to attendees of two large surgical conferences in 2012 to determine the knowledge and perceptions of general surgeons about bariatric surgery (Hirpara et al., 2016). A total of 167 surgeons completed the survey (10% response rate). The findings showed that the surgeons were confident when referring patients to a bariatric surgeon because of their knowledge about the different types of bariatric surgery. Although most of the participants agreed with the benefits of the surgery on long-term weight loss, only half suggested bariatric surgery as an option to eligible patients, which might have been linked to their uncertainty about managing post-surgical complications. This result was comparable with the study on physicians' referral for bariatric surgery in Ontario (Auspitz et al., 2016). The strength of this study by Hirpara et al. (2016) was in identifying the possible reasons behind the low numbers of patients eligible for bariatric surgery. Similar to other surveys (Auspitz et al., 2016; Sarwer et al., 2012), the limitation was in the design of the study, which could not identify change in knowledge or perception; the small number of participants which was not representative of the population of those attending the conference; and recall bias due

to self-reporting (Hirpara et al., 2016). Additionally, the study is dated (conducted over five years ago), and only investigated one healthcare professional group – surgeons.

In Germany, 201 general practitioners and internists (16.3% response rate) were surveyed to examine the effect of stigma and knowledge on referrals to surgeons (Jung et al., 2016). These physicians considered obesity as self-inflicted and controllable and so would advise patients to exercise and diet rather than refer them for bariatric surgery, which was similar to physician's preferred management in an American setting (Menez et al., 2013). Over 40% of patients in this European setting undergoing bariatric surgery were disrespected by healthcare professionals due to their weight (Jung et al., 2016). The strength of this study by Jung et al. (2016) was that it identified whether patients were stigmatised by their healthcare professionals and referral for bariatric surgery. The limitations identified include that the survey methodology could not determine a change in attitude and knowledge, the small response rate, and that it was conducted over five years ago. Additionally, this European study, which represents a different cultural background to Kuwait, reported on views of general practitioners of other health professionals, hearsay, rather than direct views from the other health professionals themselves.

In France, another European country, a more recent survey was conducted with general physicians in 2017 to assess their knowledge about bariatric surgery (Martini et al., 2018). The 288 physicians (12.6% response rate) showed limited understanding of the advantages and disadvantages of bariatric surgeries. The survey also found inefficiency in providing patient education and follow-up care that was consistent with similar studies conducted in the USA (Tork et al., 2015) and Canada (Auspitz et al., 2016). Only 28% of the physicians were aware of the effectiveness of bariatric surgery as a treatment option for T2DM (Martini et al., 2018). Physicians were interested in being educated about bariatric surgery so they could provide suitable patient education for people seeking

surgery as an option. The strength of the survey (Martini et al., 2018) is that it examined the knowledge of general practitioners about bariatric surgery. The limitations are similar to articles previously described in this review (Auspitz et al., 2016; Jung et al., 2016; Sarwer et al., 2012), including the survey design, low response rate, self-selection bias, and only being focused on one healthcare profession – physicians.

Another more recent survey study examined primary care physicians' perceptions of bariatric surgery in the USA (Conaty et al., 2019). A total of 150 physicians completed the survey (28% response rate), which revealed that some physicians overlooked overweight individuals with lower BMIs. However, the study found that physicians were generally positive about the effect of surgery for obesity management. Further, the survey found that long-term patient care and the different types of bariatric surgeries were barriers to referral. Limited knowledge about how to manage patients undergoing surgery was one of the main concerns of physicians in this study, which corresponds with the findings of other surveys (Auspitz et al., 2016; Hirpara et al., 2016; Sarwer et al., 2012). The main strength of this recent study by Conaty et al. (2019) is in its identification of the overlooked population of patients with BMIs between 35 and 40, who might benefit the most from the surgery. Limitations of this study include the low response rate, which meant the results could not be generalised; use of a non-validated survey questionnaire, which might present bias; and conducting the survey in a single centre that is not reflective of other centres. Additionally, this study only investigated one healthcare profession – physicians.

In China, a recent survey in 2018 on 4,874 nurses (91% response rate) was conducted to assess their attitudes and knowledge about obesity and metabolic disorders (Fan et al., 2020). The survey found that less than 35% of nurses were aware of bariatric surgery, and less than 25% knew about its safety and efficacy. Most of the nurses still believed that weight loss could be achieved with exercise and diet. The nurses also reported a lack of

knowledge about obesity and bariatric surgery, where they mostly associated bariatric surgery with weight loss, which corresponded with the knowledge of physicians about bariatric surgeries in Western countries (Auspitz et al., 2016; Tork et al., 2015; Zacharoulis et al., 2018). The survey found that less than 50% of the nurses knew that the surgery could also treat cancer, gastroesophageal diseases and psychological disorders (Fan et al., 2020). Surgical ward nurses were more confident about the effectiveness of bariatric surgery in weight management than those from other departments, who typically perceived the surgery as unsafe and inefficient. The strength of this recent study by Fan et al. (2020) was in the large sample size, which could be generalised to nurses across China, and that the study focused on nurses' views. Limitations included that the study design could not determine change in nurses' views and knowledge, and there was the possibility of self-reporting bias (Fan et al., 2020).

The one qualitative study included in this category explored the views of 10 patients and eight bariatric surgeons after bariatric surgery in a UK setting (Jumbe & Meyrick, 2018). The face-to-face interviews found discrepancies between patients' and surgeons' experiences. The patients reported that they did not have sufficient support following their surgery, whereas the surgeons thought that their patients were taken care of efficiently according to hospital service guidelines. Further, patients found it difficult to access a multidisciplinary team follow-up consultation, especially regarding their excess skin removal, which made them feel ashamed. In another study, general physicians were found to have underestimated the impact of psychological support when dealing with obese patients undertaking bariatric surgery (Claridge et al., 2014); this was also seen in surgeons in the reviewed study due to the focus of healthcare professionals on acute care delivery (Jumbe & Meyrick, 2018). The strength of this more recent study by Jumbe and Meyrick (2018) is its qualitative methodology, which provided an in-depth understanding from both patients' and surgeons' perspectives. Limitations of this study included the

limited gender balanced sample size, where there was only one male patient who participated as opposed to there being nine female participants, and that the study focused on one healthcare professional's views (the physicians) hence did not provide any insight into other healthcare professionals who may/could be involved in patients care (Jumbe & Meyrick, 2018).

Overall, in Category 3, the survey or cross-sectional design method was the most commonly used approach. This approach did not provide in-depth understanding or rich information regarding healthcare professionals perceptions of bariatric surgery. Despite variations in when the studies were conducted (mainly outdated), the healthcare professionals' disciplines and the sample population, the lack of knowledge about bariatric surgeries and follow-up care remained the same. With only one study including nurses' perceptions, the scarcity of research on the perceptions of healthcare professionals other than physicians, such as nurses, dietitians, psychologists and physiotherapists, was highlighted. These other healthcare professionals might also provide insight and add to the body knowledge for the management of people with T2DM and bariatric surgery.

2.5.4 Category 4: Healthcare professionals' perceptions about multidisciplinary team management for type 2 diabetes mellitus and bariatric surgery

This category presents the perceptions that healthcare professionals have about a multidisciplinary team approach in the management of people with T2DM and bariatric surgery. Nine articles were included in this theme: four literature reviews, three quantitative articles and two qualitative articles. These articles were dated from 2011 to 2020 and most included obtaining ethical approval for their study. Each study is described and discussed in the following paragraphs.

The WHO and the IDF both recommend multidisciplinary team management when using bariatric surgery as a treatment option for T2DM and obesity, in which the core members of the team should include a bariatric surgeon and an endocrinologist (International Diabetes Federation, 2019; World Health Organisation, 2019b). The four literature reviews included in this integrative review show that there are two models of multidisciplinary team management, also known as an interprofessional collaboration team, when managing people with T2DM and bariatric surgery (Grace, Kubat, & Eisenberg, 2017; Hamdy, Ashrafzadeh, & Mottalib, 2018; Marshall, Mackay, Matthews, Maimone, & Isenring, 2020; Rebibo et al., 2017). The first literature review suggests the first model of a multidisciplinary team approach is when the patient is referred from one specialist to another to manage their T2DM as an integrated process between the different departments (Grace et al., 2017). This is also known as interprofessional practice. This review found that random consultations with specialists were not necessarily performed with experts in obesity or T2DM, making this type of multidisciplinary team approach unreliable depending on the healthcare professionals' assessment. This study also found that follow-up rates of bariatric patients improved after a multidisciplinary team approach was integrated where patients had partial or complete remission of their hypertension and/or T2DM.

The second literature review presents the second model, where a multidisciplinary team consists of a panel of experts conducting meetings regularly to discuss patient cases (Rebibo et al., 2017). This review found that patients undergoing bariatric surgery needed to have their endocrine, psychological health, carbohydrate tolerance, gastric and lung health for surgical eligibility (Rebibo et al., 2017). In contrast to Grace et al. (2017), who reported the lack of necessity for specialised disciplines in bariatric surgery, this review recommended that the presence of specialist bariatric surgeons, a psychiatrist, an endocrinologist and a nutritionist be obligatory in every multidisciplinary team meeting that

discusses patients' eligibility for bariatric surgery (Rebibo et al., 2017). This review also recommended following an established guideline for the team approach to be successful.

The third literature review, recently undertaken, describes the effect of a multidisciplinary team approach on weight management for patients with T2DM (Hamdy et al., 2018). Findings of the review included the positive outcomes of the use of bariatric surgery in achieving significant weight loss, which was maintained up to five years following the surgery when utilising a multidisciplinary team approach (Hamdy et al., 2018). This was consistent with the findings of the previous literature reviews that evaluated the impact of a multidisciplinary team approach on T2DM management (Grace et al., 2017) and obesity/bariatric surgery management (Rebibo et al., 2017).

The fourth literature review article was a systematic literature review and meta-analysis to evaluate the effectiveness of a multidisciplinary team approach perioperatively on body composition, mental health, co-morbidities and quality of life for patients using bariatric surgery (Marshall et al., 2020). Findings of this review show that providing patients with multidisciplinary comprehensive management before, during and after bariatric surgery improved these patients symptoms of depression and anxiety, and improved their quality of life and cardiac health. Other studies support this systematic review in reporting that a multidisciplinary team approach has positively affected the comorbidities in patients undertaking bariatric surgery as a treatment option for obesity (Bullen et al., 2019; Grace et al., 2017). However, the study by Marshall et al. (2020) also showed that a multidisciplinary team approach did not affect patients' lipid levels or glycaemic measures, which contradicts the findings of a previous review that showed the positive impact of a multidisciplinary team on diabetes levels (Hamdy et al., 2018). The strength of the Marshall et al. (2020) systematic review lies in the process in which the data were analysed (meta-analysis).

Three quantitative articles were included in this category, of which two were cross-sectional survey articles and one was a case-control observational study. The first survey was conducted in the UAE and neighbouring gulf countries, and aimed to describe peri-operative bariatric practice in 2015 (Nimeri et al., 2017). A total of 93 surgeons responded (88.6% response rate). The findings show that a multidisciplinary team approach for bariatric surgery was necessary for the long-term follow-up of patients. However, this study also found that barriers to having such an approach include the cost of implementation and the limited number of staff who were specialised in this area. Follow-up post-bariatric care was also reported as costly in studies conducted in Greece (Zacharoulis et al., 2018) and the USA (Tork et al., 2015), which corresponds with the Nimeri et al. (2017) study. The strengths of this study are the inclusion of participants from countries in the Middle East Region, the identification of the absence of a regional guideline and the necessity for developing such a guideline to optimise bariatric peri-operative care (Nimeri et al., 2017). Nimeri and colleagues' study was limited by the small sample size and the study design, which could not determine any changes in practice and could not be generalised to the whole region.

The second survey study was conducted in Canada in 2013, and examined the perceptions of family physicians on collaborating with other healthcare professionals in the management of T2DM (Szafran, Kennett, Bell, & Torti, 2019). A total of 170 family physicians responded to the survey (34% response rate), in which 127 were physicians in a multidisciplinary team and 43 were physicians not in one. The survey found that physicians in a multidisciplinary team would allocate patient education to the nurse or diabetes educator and the medications prescribed for management of T2DM to the pharmacist, therefore leaving the physician sufficient time with the patient to discuss their T2DM progress. The strength of this study included identifying the positive impact of working in a multidisciplinary team to provide patients with sufficient knowledge and care.

The limitations of the dated study (nine years ago) included that the survey design only provided a snapshot of the knowledge of physicians' perceptions, and there was only a small sample size, which could not be generalised to represent the healthcare professionals' total population perceptions.

The case control retrospective observational study was conducted in the UK recently to evaluate the decision-making processes of a multidisciplinary team (Bullen et al., 2019). The study found that the team board discussed the eligibility of bariatric patients for surgery, which influenced the patient's decision to undergo bariatric surgery. This approach was found to benefit the patient by providing them with the most suitable option and reducing comorbidities. The findings of this study were consistent with a literature review reporting on the efficacy of a multidisciplinary team approach for bariatric surgery management (Rebibo et al., 2017). The strength of the study by Bullen et al. (2019) is in its identification of a method of optimising care service for patients seeking bariatric surgery. However, the limitation is its retrospective study design, which eliminated the ability to observe the actual decision-making process of a multidisciplinary team approach.

Two qualitative articles were included in this category. The first explored the perceptions of physicians on a multidisciplinary team approach for T2DM (Ritholz et al., 2011). Nineteen physicians (74% endocrinologists and 26% primary care physicians) were interviewed using a semi-structured interviewing technique. The interviews revealed that physicians considered themselves and diabetes educators to be the core team members in a T2DM management team, and that other specialists were referred to according to the patient's need, such as a psychologist for mental health concerns, and dietitian/nutritionist, podiatrist and nephrologist to manage diabetes complications. This is consistent with the findings of a literature review that found that referring patients undergoing bariatric surgery depended on the healthcare professionals' assessment (Grace et al., 2017). The strengths

of this study by Ritholz et al. (2011) are in the sample size of 19 physicians, and gaining understanding of physicians' perceptions of a multidisciplinary team approach in the management of T2DM. The limitations include that ethical considerations are not mentioned, which might weaken the reliability of the findings; physicians being homogeneous and from a single centre, which might not represent the views of physicians in other healthcare centres; and the perceptions of other healthcare professionals in the multidisciplinary team were not explored, which could differ from the views of the physicians; and the study was conducted over 11 years ago.

The second qualitative study was conducted in an Australian setting in 2010 and explored the experiences of patients with diabetes using a multidisciplinary team approach (Maneze et al., 2014). Thirteen patients with T2DM participated in the interviews (Maneze et al., 2014). Participants were culturally diverse, spoke limited English and came from low socioeconomic groups. The interviewees described the multidisciplinary team approach to T2DM management as poorly coordinated and dysfunctional due to the lack of communication between healthcare professionals and the focus of each discipline on their speciality rather than tailoring the approach to the needs of the patient. This style of management left patients confused and overwhelmed, which could affect their T2DM self-management. A study conducted in Kuwait reported similar findings regarding the lack of communication between healthcare professionals (physicians and pharmacists), which in turn affected patients' adherence to their T2DM medication (Al-Taweel et al., 2014; Alsairafi et al., 2019). The strength of this study by Maneze et al. (2014) lies in its identification of barriers that non-local people with T2DM who speak limited English experience in healthcare services. Also, being a qualitative study, in-depth meanings were able to be explored to provide insights into this phenomenon, which are not achievable using quantitative methods. The dated study's (over 11 years ago) limitation included the low number of participants, who were homogeneous and taken from a single centre.

Although this study was conducted in an Australian setting, which is a multicultural country, the setting is different to a multicultural Kuwaiti setting due to differences in Middle Eastern cultural and religious practices.

All the articles in Category 4 identified that the core members in a multidisciplinary team for the management of T2DM differed from the members of a multidisciplinary team for bariatric surgery. For example, in the USA, a healthcare centre with a multidisciplinary team approach included a bariatrician, dietitian, psychologist, physical therapist and surgeon for patients undergoing bariatric surgery (Grace et al., 2017), whereas the main healthcare professionals in a UK setting for a bariatric team were the surgeon, anaesthetist and dietitian (Bullen et al., 2019). Although Theme 4 included articles on literature reviews and articles on studies using different methodological approaches, which provided various information on, and insight into, healthcare professionals' perceptions of multidisciplinary team management approaches for both T2DM and bariatric surgery, most of the articles focused on the perceptions of physicians. The perceptions of the other members in the team were not explored. This, therefore, represents a gap in the knowledge and literature pertaining to the effectiveness of a multidisciplinary team management approach to using bariatric surgery as a treatment option for people with T2DM.

2.6 Summary of the literature review

Various methodological approaches were included in this integrative review to explore the perceptions of healthcare professionals of using a multidisciplinary team approach in managing people using bariatric surgery as a treatment option for T2DM. A cross-sectional design was the most utilised methodology in the included articles, which presented several limitations, such as the inability to generalise the findings because the studies present knowledge limited to a specific point in time. The literature revealed that most of the

studies were conducted on physicians, and articles on studies exploring other healthcare professionals such as nurses, diabetes educators, pharmacists, dietitians, surgeons, psychologists and physiotherapists were limited in the management of T2DM using bariatric surgery as a treatment option. Although the perceptions of physicians provided knowledge about T2DM, obesity and bariatric surgery management, these perceptions might differ from those of healthcare professionals working in the same field due to the different roles they play when managing patients. Understanding the perceptions of other healthcare professionals could boost service delivery via improving communication with other healthcare professionals and improve health outcomes for patients. Therefore, a formal and established guideline for a multidisciplinary team approach could aid in providing optimised care for people having bariatric surgery as a treatment option for T2DM.

2.6.1 Western research findings compared to Kuwaiti findings

Findings from the articles included in this review were similar in many countries. In the table below (Table 2.2), a summary of the findings is presented comparing the findings from Kuwait and neighbouring countries with the findings from Western and Eastern studies.

Table 2.2: Summary of findings

Category	Findings from studies conducted in Kuwait and neighbouring countries	Findings from Western and Eastern studies
Category 1: Healthcare professionals' perceptions about the management of type 2 diabetes mellitus	Pharmacists lack confidence in discussing medication with physicians Lack of space and resources Physicians perceived inefficient T2DM management was due to patients' lack of diabetes knowledge Nurses have limited knowledge in diabetes management Lack of communication between physicians and pharmacists Lack of confidence of physicians in pharmacists as medicine experts	NA
Category 2: Healthcare professionals' perceptions about obesity and its management	Personal, cultural, socioenvironmental factors and healthcare system were perceived by physicians as causes for obesity to rise among its population Physicians' low knowledge about obesity management and high cost of pharmacotherapy weight-loss drugs Physicians' lack training in obesity management Absence of obesity management-related guidelines	Lack of knowledge on obesity treatment Inadequate training Stigmatism Psychological impact linked to bariatric surgery (negative) Low knowledge about obesity management options Low knowledge about long-term outcomes Management of obesity differs according to the environment and resource (rural/urban) Physicians believe anyone can provide obesity management – no specialisation required Physicians lacked time to discuss obesity management and thought discussing this is ineffective

Category	Findings from studies conducted in Kuwait and neighbouring countries	Findings from Western and Eastern studies
Category 3: Healthcare professionals' perceptions about bariatric surgery	NA	Physicians underestimated the effect of psychological support Lack of physicians' knowledge about follow-up care for bariatric surgery Physicians' lack of confidence on the different bariatric surgery options Physicians' low knowledge about bariatric surgery linked to negative attitude towards surgery as a treatment option Lack of patient education provided to patients for bariatric surgery Physicians believe obesity is self-inflicted and due to patients' laziness Physicians were positive of surgical benefits but lack the ability to provide long-term care Nurses were happy to advise patients for bariatric surgery, but not if they were family Surgical nurses were more knowledgeable about bariatric surgery in comparison to other department nurses Nurses were unaware of the benefits on bariatric surgery of conditions and diseases other than obesity

Category	Findings from studies conducted in Kuwait and neighbouring countries	Findings from Western and Eastern studies
Category 4: Healthcare professionals' perceptions about multidisciplinary team management for type 2 diabetes mellitus and bariatric surgery	Lack of multidisciplinary team approach for bariatric surgery High cost of multidisciplinary team approach	Multidisciplinary team could be a panel of experts in a meeting or referrals between disciplines and departments. Multidisciplinary team approach showed positive effect on bariatric care to up to five years post-surgery Nurses were allocated patient education by the physicians Multidisciplinary team meetings discuss eligibility of patients for bariatrics surgery for positive long-term outcomes Physicians considered themselves to be diabetes educators and core of the team while other disciplines (psychologist, nutritionist, nephrologist and podiatrist) are contacted for advice if needed Lack of communication between multidisciplinary team members

Note: NA = not applicable

2.7 Significance of conducting this research project

Currently, there is limited literature investigating the impact of multidisciplinary teams in the management of T2DM including the use of bariatric surgery, in the Eastern Mediterranean Region, including Kuwait. This literature review has shown the efficacy of a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM internationally. However, studying the perceptions of healthcare professionals, including physicians, endocrinologists, surgeons, nurses, pharmacists, physiotherapists, psychologists and dietitians, is crucial in understanding the impact of such an approach in managing people using bariatric surgery as a treatment option for T2DM. The need to explore what healthcare professionals from different disciplines think of working together in a team, and what is expected from one another, could present a clearer image of the

healthcare services provided for managing people using bariatric surgery as a treatment option for T2DM.

The knowledge generated from this project might benefit people seeking to lose weight or manage their blood glucose levels via surgery as a possible treatment option. The findings from this research project could also benefit the development of forming a multidisciplinary team in a Kuwaiti setting for people using bariatric surgery as a treatment option for their T2DM. The knowledge acquired might also assist in providing up-to-date evidence-based information suitable for guiding and developing effective patient education programs for people with T2DM and their families that are suitable to the Kuwaiti culture.

2.7.1 Nursing position in the literature

Out of the 35 studies included in this integrative literature review, only three studies included nurses. The first was a qualitative study that focused on healthcare professionals' perceptions, which included nurses, in the management of patients with diabetes in Oman (Al-Alawi et al., 2019). The second was also a qualitative study on nurses' knowledge about diabetes management in KSA (Alotaibi et al., 2018). The third was a quantitative study on nurses' perceptions of patients scheduled for bariatric surgery in China (Fan et al., 2020). These studies showed that nurses were knowledgeable in the management of diabetes and bariatrics. However, physicians viewed their knowledge in this area as lacking and limited when it came to the delivery of patient care. Further research is needed to understand how healthcare professionals from different disciplines view the role of nurses in the management of diabetes and bariatrics. It is also important to identify and understand what nurses perceive their roles to be when managing patients with T2DM regardless of whether or not bariatric surgery is used as a treatment option.

2.7.2 Gaps in the literature

Several gaps were found in the literature when exploring the perceptions of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option. These gaps are detailed below.

- Most of the literature reported on research about the perceptions, beliefs and attitudes of physicians from various specialities only, which dismissed the perceptions of other healthcare disciplines involved in the care and management of people with T2DM who had bariatric surgery.
- Most of the literature reported on research consisting of quantitative cross-sectional survey designs, which provided superficial knowledge by providing snapshots of situations and ideas, and did not provide rich insight and in-depth exploration of an issue or phenomenon related to the perceptions of healthcare professionals from different disciplines towards a multidisciplinary team approach to T2DM management via bariatric surgery.
- Most of the studies were conducted in Western or Eastern countries that have different cultures and perceptions of patient care and management.
- Few studies explored the perceptions of healthcare professionals in Kuwaiti settings or neighbouring countries that might have a similar culture.
- Few studies explored the perceptions and attitudes of pharmacists, nurses and dietitians, while none were found on the perceptions and attitudes of physiotherapists and psychologists/psychiatrists.
- The studies reported conflicting findings on the impact of multidisciplinary team approach outcomes on blood glucose levels and lipid profiles.
- The studies included in this integrative literature review were quite dated, requiring updating to a more recent setting.

This research aims to fill in these gaps by:

- conducting qualitative research through semi-structured interviews with healthcare professionals from different disciplines (physicians, endocrinologists, surgeons, nurses, pharmacists, physiotherapists, psychologists and dietitians) in Kuwait
- exploring nurses' perceptions and views on nursing involvement in a multidisciplinary team that manages people with T2DM and obesity who might be eligible for bariatric surgery
- observing various disciplines of healthcare professionals in Kuwait during their consultation sessions to assess service delivery
- identifying barriers that might interfere with patient care for people using bariatric surgery as a treatment option for T2DM in Kuwait
- identifying the criteria that healthcare professionals in Kuwait follow when managing people with T2DM eligible for bariatric surgery as a treatment option for T2DM
- identifying the knowledge that healthcare professionals hold regarding each other's roles when managing people with T2DM who are eligible for bariatric surgery as a treatment option for T2DM in Kuwait
- understanding the process that patients with T2DM and bariatric surgery must go through when receiving treatment in Kuwait.

2.7.3 Aims of this research

This research aims to address the gaps found in the literature by providing the following:

- an in-depth understanding of Kuwait healthcare professionals' perceptions about working in multidisciplinary teams when caring for patients with T2DM, including those who are having bariatric surgery

- knowledge to assist healthcare professionals in Kuwait understand other healthcare professionals' views and roles with the aim of encouraging healthcare professionals to become active members in multidisciplinary teams
- understanding for healthcare professionals about what is required for patients with T2DM and bariatric surgery from other healthcare professionals so that a suitable patient education program may be developed
- knowledge to help healthcare professionals understand the role of each discipline, which might assist in improving patient education for those using bariatric surgery as a treatment option for T2DM, leading to efficient management of T2DM in the healthcare system. This improved patient education might also increase community awareness and knowledge about bariatric surgery and thus correct any misleading or inaccurate information regarding the surgery.

Following this literature review is the methodology and methods chapter (Chapter 3) which presents the research design and methods used to conduct this research project. Then follows chapters 4,5 and 6 where the findings from the data collected are described and interpreted. Chapter 7 then discuss the findings from chapters 4,5 and 6. The final chapter (Chapter 8) will be the conclusions chapter that presents the implications and recommendations, strengths and limitations, new knowledge, and ends with the conclusion of this thesis.

Chapter 3: Methodology and Methods

3.1 Introduction

A qualitative approach was used to address the research question of this thesis, which aims to understand the perceptions of healthcare professionals towards the use of a multidisciplinary team approach for the management of patients using bariatric surgery as a treatment option for T2DM. This chapter begins with the rationale for the chosen research paradigm, followed by discussion on the methodological approach − interpretive description − including its theoretical and philosophical underpinnings, the researcher's role and philosophy, and the disciplinary positioning used to address the research question.

The research question and objectives of this study are presented, followed by ethical considerations. The methods used for data collection − interviewing and observation − are then described, including the impact of the COVID-19 pandemic on the data collection process. Finally, the validity and rigour of this research study, guided by the evaluation criteria of the interpretive description approach, is presented before summarising the chapter.

3.2 Qualitative research

The current research project used a qualitative methodology because the intent of this study was to explore the perceptions of healthcare professionals and understand their attitudes and beliefs towards working in a multidisciplinary team when managing people using bariatric surgery as a treatment option for T2DM in Kuwait.

A qualitative approach was deemed the most appropriate methodology to answer the proposed research question. According to Polit and Beck (2021), qualitative research is defined as a method of social inquiry that emphasises the way people understand and

interpret the world they live in based on the experiences they have gained. Therefore, using a qualitative methodology for this study sought to provide insight into how healthcare professionals view working in a multidisciplinary team.

Qualitative health research explores the health status and conditions of individuals (Morse, 2012). Morse (2012, p. 21) provides the following definition of qualitative health research, stating that it *"is a research approach to explore health and illness as they are perceived by the people themselves, rather than from the researcher's perspective".* Given that this research project intended to explore how healthcare professionals' perceptions of a multidisciplinary team approach in Kuwait would affect management of patients when using bariatric surgery as a treatment option for T2DM in a clinical setting, exploring the attitudes and beliefs of healthcare professionals could provide a direct link to their perceptions about working in that setting.

There are different approaches within qualitative research. These approaches include ethnography, phenomenology, case study, grounded theory, narrative, critical and feminist approaches (Polit & Beck, 2021), which are defined in Table 3.1. Many nurse researchers have borrowed from these approaches in an attempt to find a solution for clinical issues (Thorne, et al., 2004). However, these approaches are embedded in the research traditions of anthropology, sociology, psychology and philosophy, and are therefore not necessarily designed to answer research questions that are derived from, and intend to inform, clinical and practice disciplines (Sandelowski, 2000; Thorne, 1991).

Table 3.1: Qualitative approaches

Qualitative approach	Definition	Rationale for unsuitability to utilise in this research project
Ethnography	Studies the culture of a population	Not aimed at studying the culture of healthcare professionals within a limited timeframe
Phenomenology	Describes the lived experiences of a population	Intending to explore the perception and attitudes and not the experiences of healthcare professionals
Case study	Studies cases found in the population whether these cases were single or multiple cases	Not aimed at studying case in a society
Grounded theory	Develops a theory through understanding the main concern of an issue which impacts the behaviour of an individual	Not intending to generate a theory but rather explore aspects that healthcare professionals view towards a multidisciplinary team approach
Narrative	Explores stories as a way of understanding how an individual views a situation that has occurred in their personal life	Not seeking to understand events and stories that healthcare professionals' personal life
Critical	Develops a practical plan focused on implementing change in the society	Not seeking to implement change but rather exploring and understanding healthcare professionals' views of a multidisciplinary team
Feminist	Studies women and their position in society	Not focusing on women and their position in society but rather on both genders working in a healthcare organisation

A suitable approach to answer questions that arise in clinical practice therefore needed to be adopted in the current research project. As described in the next section, the interpretive description approach developed by Thorne, Kirkham and MacDonald-Emes (1997) was initially designed specifically for nursing research and was deemed the most appropriate approach due to my nursing background to answer the research questions of the current study.

3.3 Interpretive description

Interpretive description was developed by nursing scholars and defined as a qualitative approach to clinical description with an interpretive or explanatory lens (Thorne, et al.,

1997). The interpretive description approach was created primarily to assist in gathering subjective understanding about an experience or concept that can then be used as knowledge to inform nursing practice (Thorne, 2016). This applied approach is intended to assist in understanding a clinical phenomenon in relation to its context (Thorne, 2016). According to Thorne, Kirkham, and O'Flynn-Magee (2004), interpretive description is not only based on a combination of philosophical underpinnings, but also calls for an acknowledgement that truth is constructed based on the contextual nature of experience, thereby accounting for multiple realities. Interpretive description is also based on methodological modification, encouraging researchers to borrow from other methodologies or philosophical underpinnings to construct a meaningful logic for the research (Thorne, 2016).

Unlike phenomenology, the goal of interpretive description is to highlight and utilise the knowledge of expert healthcare professionals (i.e. nurses) to inform clinical practice rather than focusing on the underlying structure or essence of an experience or phenomenon (Thorne et al., 1997). Interpretive description also differs from grounded theory, where the focus is on the development of a theory, which typically involves a long data collection period and detailed line-by-line coding (Thorne et al., 1997). Data collection for interpretive description takes less time, and the interviewing starts with "*broad questions*" (Hunt, 2009, p. 1290).

Interpretive description utilises a variety of data-collection strategies to capture themes within subjective perceptions and to generate an interpretation that assists in clinical understanding of a phenomenon (Sandelowski & Leeman, 2012; Thorne et al., 2004). According to Thorne (2016), interpretive description is not an approach with structured rules and strict guidelines; instead, it is guided by participants' knowledge as obtained by their experience. The researcher is then able to merge this knowledge with other empirical

means (findings from quantitative studies such as cohorts and randomised control trials that present facts) that can be applied into practice. The intention of an interpretive description study is to provide the researcher with a semi-structured guide, allowing them the creativity and reasoning to generate new knowledge that is meaningful to the anticipated audience (Thorne, 2016). Interpretive description helps researchers support their epistemological underpinnings with their disciplinary conceptual frame to build a reliable body of knowledge that is suited to the demands of an applied practice discipline (Thorne, 2016).

The use of interpretive description was employed to strengthen the interpretation of findings within the present study, thus generating new knowledge to enhance the provision of care for people withT2DM undergoing bariatric surgery in Kuwait.

3.3.1 Theoretical underpinnings of interpretive description

Interpretive description was founded upon symbolic interactionism. Symbolic interactionism, developed by Herbert Blumer (1900−1987), refers to the study of human behaviour as it relates not just to the individual but to a group or society (Blumer, 1969). Symbolic interactionism is based on the concept of pragmatism developed by John Dewey and others, which was taken up by sociologists including George Herbert Mead (1863–1931) within the Chicago department of sociology as the underpinning of symbolic interactions as a way of understanding the acquisition of knowledge and of understanding truth (Charon, 2010). Mead explained that knowledge is obtained through the useful information that individuals receive in the situations they face (Charon, 2010). Mead believed that individuals view knowledge and truth depending on its applicability to different situations and interactions in their life (Charon, 2010). Symbolic interactionism focuses on the individual as an active person in the environment who thinks and handles these situations as they appear, instead of focusing on a passive person whose decisions

and actions are already set by existing norms and values (Charon, 2010). Symbolic interactionism also emphasises that individuals understand other individuals based on their interaction with them or others as opposed to obtaining understanding based on societal views or personality traits (Blumer, 1969; Charon, 2010). According to Oliver (2012), symbolic interactionism and interpretive description are similar in their fundamental concept, which explains that in order to understand the process of a system, there is a need to examine how this process operates in its natural environment.

3.3.2 Philosophical underpinnings of interpretive description

Qualitative interpretive description is heavily influenced by naturalistic inquiry, interpretivism and a constructivist philosophy (Thorne, 2016). Interpretive description draws from naturalistic inquiry (Lincoln & Guba, 1985), which means that it focuses on *"human action in some setting that is not contrived, manipulated, or artificially fashioned by the inquirer"* (Schwandt, 2007, p. 102). Naturalistic inquiry is related to interpretivism (Lincoln & Guba, 1985). Ontologically, interpretivism depend on methods primary to naturalistic inquiry to uncover the multiple sides of reality, while maintaining the distinctions between interpretivism and naturalistic inquiry (Lincoln & Guba, 1985). Understanding the different realities and maintaining the distinction between interpretivism and naturalistic inquiry ensures that, contextually, daily life and its complexity is not lost in collecting and synthesising data (Lincoln & Guba, 1985). In this current research, this philosophy places exploring attitudes, beliefs, and perceptions of healthcare professionals about a multidisciplinary team approach when managing patients using bariatric surgery as a treatment option for T2DM in Kuwait at the forefront in the interpretive description approach used.

Interpretivism in Thorne's (2016) approach is inspired by the traditions of 20th century philosophers from France (Paul Ricoeur) and Germany (Martin Heidegger and Hans-

Georg Gadamer). These traditions claim that realities do not simply exist but are socially constructed by the individual who experiences them (Thorne, 2016). Interpretivists aim to seek understanding, rather than a simple description, in finding connections to uncover meaningful knowledge (Thorne, 2016). Interpretation is used when the researcher intends to do more than purely describe the phenomenon of interest, but also plans to seek an understanding of the associations, relationships, themes and patterns of the object, phenomenon or individual being studied (Sandelowski & Leeman, 2012). Although each reality is different and interpretations might fluctuate from one researcher to another, or even from one data source to another, the overall intention is to contribute to knowledge as it relates to that which is being studied (Thorne, 2016).

The goal of using interpretive description as an approach for a research study is to find patterned themes and connections through logical reasoning, and to present another angle to the phenomenon of interest (Thorne, 2016). By utilising this approach, there is no intention of generating a new truth, but rather to assist in contextualising tentative truths to inform clinical reasoning consistent with the nursing discipline (Thorne et al., 2004). For the purpose of conducting this current research, acknowledging human experience, both socially and experientially constructed, allows the researcher to examine how nurses engage in practice with others and with their environment.

3.3.3 Criticism of interpretive description

There are criticisms of the interpretive description approach. In 2004, Thorne and her colleagues (Thorne et al., 2004) identified the first concern as they addressed the concern over blurred distinctions between qualitative approaches as well as the perceived lack of epistemological and methodological grounding in interpretive description. A proactive approach to interpretive description philosophy explains it as a naturalistic approach where an acknowledgement of cultural diversity should be promoted as "*the constructed and*

contextual nature of human experience … allows for shared realities" (Thorne et al., 2004, p. 5). The authors argue that while interpretive description uses a variety of techniques for data collection and analysis, its epistemological foundation distinguishes it from method slurring that relies on inconsistent assumptions. The term *methods slurring* refers to an assorted and irrational use of techniques from incompatible methodological traditions (Thorne et al., 2004). This means interpretive description provides flexibility and can incorporate multiple techniques from other methods without sacrificing the integrity of the research team's appreciation for disciplinary knowledge. This is not due to the researchers not following traditional methodological rules but instead because their respect for the discipline makes it difficult for them to comply.

The second criticism relates to a lack of resources and variety available in contextualising interpretive description (Hunt, 2011). Most of the information available on the topic of interpretive description has come from a few scholarly publications (Thorne, 2013, 2014; Thorne et al., 1997; Thorne et al., 2004; Thorne, 2016). Their contributions have cemented their position as the foremost scholars on this qualitative approach since it has a strong methodological pedigree, and it has proliferated and developed its academic literature. With the absence of an interpretive description formula (Thorne et al., 2004), Hunt (2009) claims that it is difficult to determine how to utilise this technique. Increasingly, studies are using interpretive description for their analyses. Resources for researchers are expanding in variety and quantity, illustrating the flexibility, productivity and freedom that this approach provides today's researchers (Ng, 2021; Olsen, Bradley, Lomborg, & Nortvedt, 2013; Thompson Burdine, Thorne, & Sandhu, 2020)

According to Hunt (2009), a lack of resources results in the deficit in understanding interpretive description within academia. Hunt (2009) argues that interpretive description needs to differentiate between other qualitative methodologies, such as ethnography,

phenomenology and grounded theory. According to Thorne (2016) interpretive description is an approach that incorporates traditional and non-traditional methods to meet the needs of discipline-specific inquiries in practice. Hunt (2009), however, contends that the use of this method in conjunction with other approaches benefits the researcher.

The second challenge that Hunt (2009) associated with interpretive description was that its interpretive aspect was not meant to produce a new theory. Identifying new ideas is a source of tension when they are not discussed in the literature. Thus, researchers must accept that one of the underlying characteristics of interpretive description is that it does not purport to be true, and they must understand that interpretative approaches intend to present knowledge based on particularistic, relativistic and evolving assumptions (Thorne, 2013). Hunt (2009) further notes that researchers are at risk with interpretive description of not developing sufficient interpretations and, as a result, limiting the potential value of research findings. It is crucial that researchers are aware of the critiques and understand how important it is for them to adopt interpretive description as a research approach.

Interpretive description can be criticised for lacking precision, which will reduce rigour because it draws on the strengths of other more established methodologies such as phenomenology, ethnography, and grounded theory (Denzin & Lincoln, 2017; St George, 2010). In contrast, interpretive description is a method that emphasises the constructed nature of human experience and is therefore appropriate to studies that investigate and understand how people experience life (Thorne et al., 1997). Consequently, it allows for a deeper understanding of practice areas since interpretive description specifically aims to produce results that are relevant and persuasive to practitioners.

In terms of data collection and analysis, interpretive description borrows from established methodologies such as ethnography, grounded theory and phenomenology (Berterö, 2015). Sandelowski (2000) states that Thorne's approach allows researchers to utilise

interpretive description in order to be liberated from strict adherence to established methodologies, that is, a *'tyranny of method'* (p. 334) in which it has reduced the restrictive nature of conventional and more established approaches. Interviews and vignettes are supported by the interpretive description because they provide flexible types of data collection methods designed to explore issues that are not easily addressed by more rigid approaches.

3.3.4 Assumptions of interpretive description

When using interpretive description, the researcher continually attempts to uncover participants' subjective perspectives while simultaneously gaining an understanding of patterns and commonalities from the dataset as a whole (Hunt, 2009; Thorne et al., 2004; Thorne, 2016). Interpretive description borrows methods for data collection and analysis from foundational approaches such as ethnography, phenomenology and grounded theory, while avoiding strictly adhering to the philosophical traditions, or the extensive adoption of the theoretical drivers commonly used in social science research (Thorne, 2016). The underlying assumptions of interpretive description are similar to those found in naturalistic inquiry (Thorne, 2016), including that:

- subjective and experiential knowledge are valued
- issues are considered within their historical and environmental context
- meaning is socially constructed
- truth is approximated by the consideration of multiple realities
- a dependent link exists between the knower and the known.

Thus, interpretive description shares an orientation basic to many qualitative approaches (Sandelowski, 2000; Thorne, 2016). According to Thorne (2016), the researcher is an interpreter who is preoccupied with meaning-making. Meaning-making is used to

understand clinical phenomena and simultaneously construct knowledge through understanding the gathered interpretation (Thorne, 2016). Knowledge is constructed within a clinical context because participants interpret the health predicament of their patients (Jonsdottir, Jonsdottir, Geirsdottir, Sveinsdottir, & Sigurdardottir, 2004). This interpretation is also constructed by the researcher. This dynamic and evolving process results in ascribing meaning to the clinical phenomenon of interest (Thorne, 2016). In this current research project, the clinical context was the management of T2DM via a multidisciplinary team approach when using bariatric surgery as a treatment option in Kuwait. The knowledge the researcher explored was the perception of healthcare professionals towards a multidisciplinary team approach for managing T2DM and bariatric surgery in Kuwait.

3.3.5 The researcher's role in interpretive description

Thorne (2016) provides a full description of the researcher's role in interpretive description, stating that this approach centres around the knowledge of the researcher, considering their actions and thinking, which plays a pivotal role in shaping study findings. Interpretive description therefore rests on the researcher's personal epistemological underpinnings. By aligning theoretical and epistemological positions, the researcher uses well-organised, rational logic to design a research study that is derived from disciplinary logic, borrows from other methodologies, and can be applied to the body of knowledge related to the phenomenon of interest. Interpretive description thus accounts for the creativity, experience and subjective diversity of the researcher. Further, this approach calls for a construction of truths based on multiple realities and the researcher's awareness that their knowledge, experience and ability to interpret findings are essential for the credibility of the research.

According to Thorne (2016), understanding the disciplinary positioning of the researcher will uncover the motivation for the research study, allowing the reader to determine the consistency of data collection, data analyses, and interpretation. By disclosing the disciplinary positioning of the researcher, the reader is aware of the researcher's philosophies, thoughts and perspectives related to the phenomenon and how each might be reflected in the study findings.

3.3.6 My disciplinary positioning

My interest in the phenomena of diabetes patient care and multidisciplinary teams begins from my background as a registered nurse and Kuwaiti nurse leader. The profession of nursing is exceptional in the way that it allows one to accompany individuals through their treatment journey at a healthcare facility. My scope of practice as a nurse has grown over the last 13 years, through specialisation in internal medicine and progress of skills and practices from the clinical bedside to a formal leadership role as a head nurse of the medical in-patient ward, and a team leader at the diabetes clinic. Coming from a family of healthcare professionals, I was brought up to believe that nurses are important to the healthcare system. My mother is a retired postnatal ward nurse, my brother is a medical physician and my sister a behavioural therapist. My passion and interest in this research project came from the diversity in the healthcare professionals I have within my family. Discussions with my siblings and my mother about their daily interactions with patients often revolved around how difficult it was for patients to listen to us as healthcare professionals. As a nurse, it was inevitable that I met my significant other at work; I married a nurse, and this meant the discussion about our different views of people continued. The personal discussions were now with a nurse, but from a male perspective. Interestingly, although we are both nurses, we found that our experiences with patient interaction differed; but one thing stayed constant − *patients don't listen*.

Over the last seven years, my studies have focused on a variety of topics relevant to my clinical practice including nursing leadership in healthcare, diabetes patient education and healthcare service delivery. I continued my studies with a Master's Degree in Nursing and studied structured group education for Kuwaiti adults with T1DM, which concluded that there exists inefficient and unsuitable patient education for a Kuwaiti population with diabetes. My Diploma in Research Methods course followed on from this research, enabling me to explore the experiences of people with T2DM after having bariatric surgery to manage their diabetes, where I found inefficient patient education, lack of knowledge and the lack of a multidisciplinary team approach (Alobaidly et al., 2020). These findings provided insight into patients' attitudes towards patient management that has been discussed for many years over dinner with my family while maintaining patient confidentiality. This made me question my beliefs about patient self-negligence and non-adherence, and my beliefs about how healthcare professionals deal with these patients. I was eager to learn more.

After listening to patients' experiences with T2DM management, and comparing them to my beliefs from my personal experience as a nurse, I wondered what people at the professional level of T2DM management thought when providing care for this group of the population. I knew how I felt, and I certainly knew how my mother, brother, sister and husband felt. But what about the other disciplines? What do healthcare workers think about patients with T2DM? Why is it that patients with T2DM do not adhere to their treatment? Why do dietitians not teach patients with T2DM about carbohydrate counting, or is this not taught anymore? Why do patients have painful fingertips? Why do patients refuse patient education, and why do patients not show any improvement in their blood glucose levels? I always assumed that as nurses and other practitioners working closely with health and illness, it was our job and responsibility as health workers to give the best care possible to these patients.

Exploring the perceptions of healthcare professionals about T2DM management meant I needed to go further into the constructs of the healthcare system. I wondered about interprofessional communications, language barriers and diversity of cultures. The literature was consistent with my beliefs and findings regarding inefficient patient education and non-adherence to T2DM medication (Abdulsalam, Al-Daihani, & Francis, 2017; Al-Adsani et al., 2009; Alsairafi et al., 2016; Awad et al., 2011). These studies focused on patients with T2DM. Although healthcare professionals were also part of the problem, they were assumed to be responsible in providing their best when it came to managing patients with T2DM. This was where my interest in a multidisciplinary team approach towards diabetes self-management and patient education became a focus of my research. Several studies recommended a multidisciplinary team approach for T2DM and bariatric management (Al-Adsani et al., 2009; Al-Taweel, Awad, & Johnson, 2013; Al Slamah et al., 2017). However, no research, that I was aware of, had investigated the attitudes and beliefs of healthcare professionals towards a multidisciplinary team approach for T2DM management within the Kuwait context.

For the past decade, bariatric surgery has become a treatment option for T2DM (International Diabetes Federation, 2019). This surgical option has been widely used in Kuwait for obesity treatment in people with and without diabetes (Alobaidly et al., 2020; Haskin, 2013; Iossi et al., 2013). However, the existing research has not included the views all of healthcare professionals on the use of bariatric surgery as a treatment option for T2DM (see Chapter 2). This lack of existing research poses questions, such as who provides the T2DM education to patients, how does a patient access bariatric surgery as a treatment option, and how much awareness is there regarding its use for T2DM treatment? These were the questions that made me pursue a doctoral degree. This would allow me to delve deeper into the issues related to using bariatric surgery as a treatment option for

T2DM, and the aspects of care that needed to be studied to improve diabetes service delivery at a government healthcare facility.

3.3.7 Researcher's philosophy

As a constructivist, pragmatist and humanist, my philosophy as a researcher aligns with the philosophical underpinnings grounded in Thorne's (2016) interpretive description. It is my belief that single realities or truths do not exist, but are constructed through each individual's experience, which is informed by the context within which that experience occurs (Blumer, 1969; Thorne, 2016). In other words, realities do not simply exist in an objective form, but are a result of socially constructed experiences influenced by societal and cultural forces (Thorne, 2016). Constructed truths, while not generalisable, are vital to the understanding of human experience and are inherently related to the context and time of that experience (Thorne, 2016). Approaching research through this lens is not only an attempt to understand individuals and groups, but is a practical, pragmatic approach that is dependent on the care provided by individuals who share a common interest (Oliver, 2012), such as healthcare professionals working to manage people with T2DM in a healthcare facility. As a researcher, I recognise that not all realities are explicitly shared, but that each interpretation of reality contributes to knowledge.

In addition, I believe that the philosophy of the profession of nursing and other healthcare disciplines is built on humanism as the goal in order to provide quality, individualised care to each patient while also understanding the distinct needs of an individual. From a nursing perspective, a patient-centred approach for the idea of humanism is seen as caring (McCaffrey, 2019). Humanism in nursing is built on two components, *"therapeutic attunement between self and others"* and *"authenticity in one's intentionality or commitment to care for others"* (Létourneau, Cara, & Goudreau, 2017, p. 37). As the researcher I must appreciate the need to understand and find meaning in the views other

healthcare professionals have of a multidisciplinary team approach in managing people with T2DM when using bariatric surgery as a treatment option. This also includes the perception of nurses about working in a multidisciplinary team, which could develop the profession of nursing further by contributing to the body of knowledge in the T2DM and bariatric fields.

My ontological (what exists for people to know about) and epistemological (how knowledge is created and what is possible to know) views impacted the approach to knowledge development within this thesis (Moon & Blackman, 2014). I believe truths are subjective and continuously evolve and change over time, fluctuating based on experiential and societal experiences. Dictated by my ontological views, knowledge acquisition in the current study was based on the findings from semi-structured interviews and observations between myself and healthcare professionals who manage people with T2DM using bariatric surgery as a treatment option.

3.4 Research question, aim and objectives

According to Thorne (2016), when framing a question for interpretive description the researcher plans to ask a question for the purpose of studying a clinical phenomenon and arriving at an answer that does not just describe, but also interprets the findings. This provided me with a more practical solution to the question generated from an arising issue in a clinical setting. The aim of this research project was to explore the perceptions of healthcare professionals working at a government hospital, and the type of interprofessional collaboration management provided to people with T2DM when using bariatric surgery to improve the delivery of diabetes management services in Kuwait. Therefore, the research question, according to Thorne's (2016) method of framing an interpretive description question is:

What are the attitudes, beliefs and perceptions of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM?

Three sub-questions were generated to ensure that the research question was explored at a greater depth:

1. What is the meaning of 'providing a multidisciplinary team approach' for patients using bariatric surgery as a treatment option for T2DM as perceived by healthcare professionals in Kuwait?

2. What expectations do healthcare professionals in Kuwait have of other disciplines when managing people using bariatric surgery as a treatment option for T2DM?

3. What are the challenges that might face healthcare professionals when working in a multidisciplinary team in the management of people using bariatric surgery as a treatment option for T2DM?

Understanding the attitudes of healthcare professionals towards each other, their expectations of each other and the type of collaboration that exists between them when managing patients with T2DM could help identify gaps in patient care and service delivery when bariatric surgery is used as a treatment option. The findings of this project will contribute to the body of knowledge in the area of diabetes and bariatric surgery. This knowledge is necessary to provide evidence-based practice required in constructing patient education programs suitable for a Kuwaiti culture. The construction of these programs may assist in reducing comorbidities associated with T2DM and obesity. Therefore, the specific objectives of the study based in a Kuwaiti setting were to:

- identify barriers that might interfere with patient care for patients with T2DM using bariatric surgery

- identify the process that healthcare professionals follow when managing patients using bariatric surgery as a treatment option for T2DM
- identify the knowledge that healthcare professionals hold regarding each other's roles when managing patients using bariatric surgery as a treatment option for T2DM
- understand the process that patients with T2DM must go through when receiving bariatric surgery as a treatment option
- understand the communication process that healthcare professionals have when managing patients using bariatric surgery as a treatment option for T2DM.

3.5 Ethical considerations

The National Statement on Ethical Conduct in Human Research (National Health and Medical Research Council, 2007) states that human research is bound by the relationship between the researcher and the participants. The council also obligates researchers to respect the participants while acting honestly (National Health and Medical Research Council, 2007). A low/negligible risk ethics application was submitted to the Social and Behavioural Research Ethics Committee (SBREC) at Flinders University on 18 November 2019 and was allocated a project number (8523). Conditional approval was granted on 2 December 2019. Comments provided by the SBREC were addressed and the application was granted final approval on 12 February 2020 (see Appendix 5). In Kuwait, permission to conduct the research at a government hospital was granted by the Director of Nursing on 5 December 2019 and by the Chief of Medical Services Authority on 21 January 2020 (see Appendix 6).

3.5.1 Ethical standards guiding the research project

According to the National Health and Medical Research Council (2007), human research shapes the relationship between the researcher and participants according to the values of

merit, integrity and justice; anonymity, confidentiality and privacy; vulnerability, power and control issues; and data storage and protection, which are explained further in the following sections on how they were addressed in this research project.

3.5.2 Merit, integrity and justice

Ethical principles of merit and integrity were adhered to due to the potential advantages that my research project may add to the body of knowledge (National Health and Medical Research Council, 2007). The method for conducting the study was developed and designed with the help of supervisors who are experts in the field of nursing, diabetes and psychology. This research project was undertaken by strictly following the rules of recruitment and data collection as determined by the ethics application approved by the ethics committees. The researcher did not contact the participants directly during the recruitment process. Health professionals who were interested in participating contacted the researcher via the email or telephone details provided on the information sheet approved by the SBREC (Appendix 7).

The National Health and Medical Research Council (2007) states that the researcher must inform the participants if any improper conduct and behaviour in relation to the research has occurred. This could arise due to the nature of human relationships and the effect of disclosing sensitive information related to the hospital that the research is conducted in (National Health and Medical Research Council, 2007). If the researcher's role is compromised, the researcher has the choice of modifying the research or discontinuing it (National Health and Medical Research Council, 2007). As no issues were identified, none of the participants needed to be contacted and no modifications for this research project was required.

Findings resulting from conducting qualitative research should also provide adequate information regarding the participants and the study setting in case the findings may lead

to generalisations (National Health and Medical Research Council, 2007). The sampling strategy in this project was clearly described and the rigour of the study was considered through following the evaluation criteria guide of interpretive description methodology during the data analysis process (National Health and Medical Research Council, 2007). Two elements in particular that are included under merit, integrity and justice − beneficence and respect − require ethical consideration and are explained below.

3.5.2.1 Beneficence

Beneficence is fundamental to healthcare. It refers to the moral imperative of acting for the benefit of participants (National Health and Medical Research Council, 2007). The benefit that participants (and thereby their patients) might gain from this research is in improving the delivery of services to patients using bariatric surgery for the treatment of T2DM, which could be achieved through having better communication between healthcare professionals. Understanding the differences in the roles that healthcare professionals have in the different disciplines when using bariatric surgery to treat T2DM could assist professionals in initiating a formal multidisciplinary team, potentially improving job satisfaction and work relationships. However, the benefits of a research study cannot outweigh any cost to the participants (National Health and Medical Research Council, 2007). To this end, the information sheet (Appendix 7) used in the current study identified that the participation of the healthcare professionals would not in any way affect their position or employment status. As the researcher, I also assured participants that their identities were removed from all transcripts and written papers, and that I was the only person who could link the transcripts to the participants.

In addition, participants could have felt burdened by donating their time to participate in the project, experiencing difficult emotions during or following the interview, or having their comments misinterpreted in published material in a way that reflects poorly on the group or

community to which the participant belongs (National Health and Medical Research Council, 2007). These burdens were managed through reminding the participants before the study that their involvement remained voluntary and that they could remove themselves from the study at any time without any repercussion. They were made aware of the time allocated for the interview and were given the choice to cancel or end the interview if the time allocated did not suit them.

3.5.2.2 Respect

Respect for the participants' privacy and confidentiality remained intact throughout the course of the study. Consent forms (Appendix 8) were attached to the information sheet and signed consent was obtained from the participants prior to their participation in the interview. Interviews were conducted in English, the official language between healthcare professionals in the hospital. However, some participants used Arabic phrases during the interview, which I, as the researcher, translated to English, as I am fluent in both English and Arabic (Appendix 9). As the researcher, I also observed healthcare professionals in the outpatient clinics to explore how they managed T2DM patients using bariatric surgery in their clinic. Consent forms were given to the healthcare professionals to sign once they agreed to be observed. I, the researcher, also obtained consent from the people (patients and their companions) who were in the clinic during the observation process to ensure that their privacy and confidentiality was maintained.

3.5.3 Anonymity, confidentiality and privacy

The anonymity of the participants, along with how confidentiality and privacy would be ensured, was clearly stated in the information sheet provided to the participants prior to the interview and observation session (see Appendix 7). Anonymity of the participants in relation to work colleagues could not be assured when the interviews were conducted in

the healthcare professionals' workplace. However, the interviews themselves were confidential and no one except for me, the principal researcher, has access to the audio recordings. In addition, participants could choose whether they wanted their interview to be face-to-face or via telephone or video link (Skype). The healthcare professionals who participated in the observation part of the research project were observed in their assigned departments. Participants who were interviewed face-to-face chose the location of the interview, which was in their assigned clinic.

3.5.4 Vulnerability, power and control issues

As stated in the information sheet (Appendix 7), participants were offered the choice to refrain from answering any interview questions they felt uncomfortable with. The participants could also refuse to participate in the interview or to be observed during their consultation sessions. The information sheet also stated that if a participant wished to withdraw their participation, I, the researcher, would withdraw the transcripts and remove all the information that can be linked back to their participation. Due to the pandemic, five healthcare professionals dropped out of the study after showing interest in participating in the study without any repercussions or judgement.

3.5.5 Data storage and protection

To ensure the protection of the participants, all identifying information was removed from all the written transcripts used in this thesis or that have been used in any other form of dissemination, and can only be re-identified by me, the researcher. The transcripts are stored on the Flinders University electronic system in password protected computers accessible only by me, the researcher. Only de-identified transcripts were shared with the supervisory panel. Transcripts will be deleted five years after the completion of the research project as per the requirements of the ethics committee.

3.6 Research methods

The following section provides an explanation of the research design, sampling strategy and data collection process used in this research project (see Figure 3.1). This is followed by an explanation of the strategies utilised for data analysis.

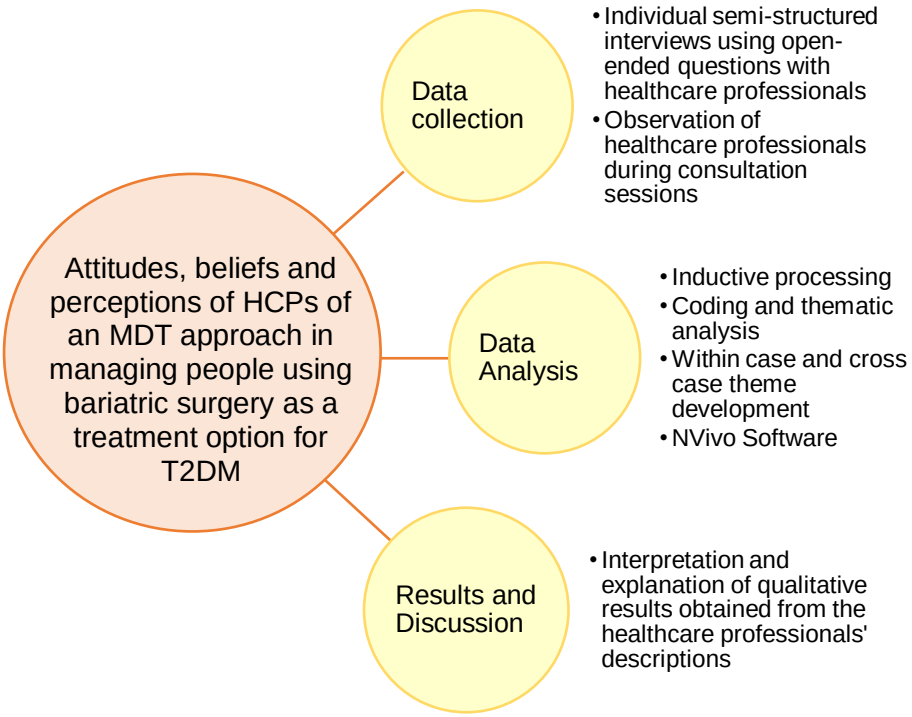

Figure 3.1: Research design

Note: HCP = healthcare professional; MDT = multidisciplinary team; T2DM = type 2 diabetes mellites

3.6.1 Study settings

According to the last published records, there were approximately 1,031 employees across the administrative and clinical settings at the hospital where the research was conducted in Kuwait (AlRandi et al., 2014). There have been no changes in the staff at this time and the number of employed healthcare professionals stayed the same. The hospital has a bed capacity of approximately 320 beds. The hospital is capable of managing people who seek treatment at the emergency, internal medicine, surgical, orthopaedic, intensive care, cardiac care, hyperbaric oxygen, dietetic, physiotherapy and radiology units. Where appropriate, treatments are available in both in-patient wards and as outpatient services.

3.6.2 Sampling strategy

Purposive sampling was chosen for this project. With this strategy, the setting and participants are identified in advance and recruited because of their direct connection to the phenomenon that is being investigated (Thorne, 2016). Using purposive sampling means that the researcher chooses the most beneficial participants to be included for the research project (Polit & Beck, 2021). This also means that participants were recruited according to their knowledge and experience in order to best answer the research question (Schneider & Whitehead, 2016). Healthcare professionals were selected as participants due to their significant role, knowledge and/or experience in managing T2DM patients using bariatric surgery in Kuwait. Participation was voluntary.

3.6.2.1 Data saturation

In an interpretive description study, data saturation was utilised as a guide for efficient sample size (Polit & Beck, 2021; Thorne, 2016). However, a precise number for sample size is impossible to obtain in qualitative studies, as the number depends on the scope identified by the research question, the researcher's experience in collecting the data, the depth of information obtained from the participants, and the sensitivity of the research topic (Polit & Beck, 2021). For this research study, participants were healthcare professionals with different educational backgrounds, work experience and perceptions when it came to providing management to patients with T2DM using bariatric surgery as a treatment option. Therefore, using the evaluation criteria of interpretive description (discussed in Section 3.5.8) would provide rigour and credibility in this research.

3.6.2.2 Insider / Outsider

Morse (2012) labelled healthcare professionals such as physicians, nurses, dietitians and physiotherapists as 'insiders'. Insiders are researchers who possess skills and

qualifications, such as being knowledgeable about health care systems and the people who have access to healthcare facilities, having the ability to identify an appropriate research question, possessing knowledge for patient care during the period of data collection and having the ability to provide appropriate and realistic recommendations after completing the research (Thorne, 1991). The ‘outside’ is a place where the setting does not reside, and ‘outsiders’ are people who do not engage in the setting (Morse, 2012). This research was to explore the perceptions of healthcare professionals towards a multidisciplinary team approach, which means that healthcare professionals as insiders were the most appropriate individuals to assist in answering the research question. In addition, as a nurse, being as insider meant having preconceptions during interviews, which would be advantageous in asking relevant questions to obtain richer information regarding healthcare professionals’ perceptions towards a multidisciplinary team approach for T2DM management using bariatric surgery.

3.6.3 Recruitment strategy

Information sheets and consent forms were distributed by the staff development unit to nurses of the hospital in Kuwait to recruit eligible interested healthcare professionals (see Appendices 7 & 8). The information sheet contained my (the researcher’s) contact details and information regarding the project and participation. Electronic copies of the information sheet were sent to the hospital’s staff development unit by me, the researcher, as soon as ethics approval was obtained. The information sheets were in English and then translated into Arabic (the official language in Kuwait) by me, the researcher, prior to distribution (see Appendix 9). Both electronic and hard copies were made available in the medical and surgical outpatient departments, which included the bariatric, diabetes and psychology clinics. Participant recruitment commenced on 1 March 2020 and ended on 1 September 2020 following Flinders University’s SBREC approval (no. 8523).

The introduction sheet and consent form explained that participation in the study was voluntary. Signed consent was obtained from the participants prior to their participation in an interview and prior to the conduct of observations. I, the researcher, also obtained the consent of the people (patients and their companions) who were in the clinic during the observation process to ensure that their privacy and confidentiality was maintained.

The consent form stated that deciding to stop the interview and withdrawing at any stage would not disadvantage the research. Two participants withdrew their interview, a nurse and a surgeon. The nurse was concerned that their answers might affect their employment status, while the surgeon declared that they were not an accredited bariatric surgeon and would like their interview dismissed. Those recorded interviews were destroyed immediately. Five healthcare professionals provided consent before the COVID-related lockdown, and cancelled their planned interview claiming they were busy and had no time. Participants were given the opportunity to review and edit their transcript to make sure that no misinterpretation was made, which none of the participants chose to do.

3.6.4 Data collection

Participants were healthcare professionals from various disciplines working at the hospital in Kuwait that was the location of the research project. Healthcare professionals were invited to participate in one face-to-face, telephone or video-linked (Skype) semi-structured interview of approximately 30−60 minutes in length, conducted by me, the researcher. Participants were also asked whether they would agree to the researcher (me) observing them during their consultations with their patients who had been diagnosed with T2DM. Participants were free to choose whether they would like to participate in the interview, the observation, or both. The transcripts were reviewed by the participants and returned to me without comments.

3.6.4.1 Interviewing as a form of data collection

There are numerous resources available that explain the aspect of how an interview should occur and how the interviewer should carry out these interviews themselves (Fontana & Prokos, 2016; Holloway & Galvin, 2016; Patton, 2005; Spradley, 1979). The interview, the interviewer and the interview questions in relation to this current research project are central to the interpretive description approach and are explored in the following sections.

The interview

An interview provides an opportunity for participants to describe their experiences in a comfortable and effortless manner (Munhall, 2012). Open-ended questions typically used in interviews provide participants with the ability to reflect on their experiences by answering the interview questions and talking freely around their interpretations (Polit & Beck, 2021). This aligns well with the theoretical framework of interpretivism underpinning the current research, in that participants answered questions according to their experiences in the management of patients with T2DM, remembering and recalling their experiences as an actual understanding of their role and communication process with other disciplines for T2DM management.

The interview is a discussion in which the researcher commences with a question, while allowing the participant to answer by constructing the experience in a context that opens itself to interpretation by the participant first and then followed by the researcher's interpretation as an independent line of analysis (Thorne, 2016). The participant's interpretation is focused on providing an inward inquiry of a certain phenomenon, while the interviewer's interpretation is about producing inquiry outward (Thorne, 2016). Therefore, designing an interview guide within the current study provided me, the researcher, with the means of making sense of working with other healthcare professionals when caring for people with T2DM. The interview guide is discussed further in the following section.

The interviewer

Miczo (2003) explains that the roles of researcher (interviewer) and participant (interviewee) are not necessarily mutually exclusive. The participant has a peripheral position, even in qualitative research. Thorne (2011) contends that participants have a stronger role by suggesting that the researcher makes an ethically agreed upon effort with the participants to provide them with a safe space to discuss and express themselves. Thorne's primary reason for this belief is because she deems that nurses need to understand the experiences that participants share as a means to allow the research application to gather diverse context among the participants in their natural setting and not because participants demonstrate an interest in theory. This belief illustrates how the interview is a crucial tool of the research process.

Objectivity has been found to be almost impossible to maintain when conducting standard interviews (Miczo, 2003), which Thorne (2016) supports by arguing that despite the diligence of a researcher, they should disclose details of their qualifications to the participant and when reporting research. The interviewer must actively participate in the interview as much as possible (Lowes & Prowse, 2001), which would encourage the participant to provide clear and detailed explanations of their experiences that can be meaningful to report. The interviewer reflects on the participant's response, explains the response by asking further questions, and then starts to recreate the components of the interview for clarification. This method should produce rich and in-depth understanding of the phenomenon being examined.

Before commencing with the interviews, the researcher carefully considers several elements and prepares using various communication and interview skills, such as building rapport between them and their interviewees, demonstrating creativity in questioning these interviewees, identifying discrepancies in thoughts and perceptions, and consciously searching for inquiries and repetition (Spradley, 1979). Similarly, Thorne (2016) shares

these beliefs on the role of an interviewer, and additionally offers further explanation about the role of the researcher. Therefore, these points could be employed by various roles, which are the interviewer, observer, or analyst (Thorne, 2016). During an interview, the researcher is expected to track their reflection, allow their interviewees to lead, disclose this qualification and professional position, step out of role, clarify points noted in the interviewees consent and refrain from inducing the interviewees' responses as much as possible (Thorne, 2016).

Interviewing starts with an intent to ask participants open-ended questions to encourage elaboration and clarification (Thorne, 2016). During the interviewing process, the researcher is required to relinquish their role as a clinician and adopt the interviewer's role instantly (Thorne, 2016). One of the researcher's skills in interviewing is becoming the student, whereby the researcher is required to be open to the participant, allows themselves to be taught by the participant, and encourages the participant into realising that they are the teacher (Spradley, 1979). Being a nurse, the pre-existing assumption that we are capable interviewers is already present (Thorne, 2016). However, although we might have the talent of obtaining clinical information, this does not mean that we are capable of conducting good interviewing for research (Thorne, 2016). As researchers, being openminded and accepting others' opinions and perceptions is required during our questioning, which should be accompanied by perceptive listening and reflection (Thorne, 2016). In addition, Thorne (2016) warns researchers to be aware of reverting to their clinician role while discussing clinical events and circumstance. I am a registered nurse in Kuwait, and when conducting an interview with other healthcare professionals on their perceptions of T2DM management, personal beliefs or knowledge might sometimes interfere when discussing the care provided to patients with T2DM. It is here where there is danger of the researcher (me) reverting to the clinician role.

Staying focused during the interview is needed to focus on the line of research questioning (Polit & Beck, 2021). This could be done by using an interview schedule that would avoid focusing on the line of clinical inquiry (Polit & Beck, 2021). The researcher needs to focus on questioning while allowing for a natural flow of a conversation where the participant might share useful qualitative information within the conversation unexpectedly (Spradley, 1979). Thorne (2016) explains that the production of quality data will develop through building rapport from a well-thought-out frame of reference, attitude and communication style, without crossing the border into friendship or therapy. I created a guide for interviewing (see Appendix 4), which started by providing a few facts on the research project and the reason behind why healthcare professionals' perceptions were being studied. This technique allowed me to talk casually regarding T2DM prevalence in Kuwait while providing facts to stay relevant and connected to my purpose, which was interviewing. Despite the medical background of the healthcare professionals, I, the researcher, used simple language to encourage the participants to talk freely and comfortably without feeling the pressure of being judged for what they said. I had previously worked at the hospital, therefore, there was a degree of rapport and trust already established, but I was also aware of maintaining professional distance so as not to become too friendly.

Interview questions

The interviews in the current study were conducted by asking open-ended questions to encourage participants to communicate freely using their own examples and descriptions These questions enabled me, the researcher, to focus the participants on the phenomena under investigation. The questions were designed to generate responses and rich data to provide in-depth understanding of the views that healthcare professionals had of a multidisciplinary team's management of patients using bariatric surgery to treat T2DM in Kuwait. I, the researcher, developed a question guide based on the findings of the

literature review (Chapter 2), which was member checked by my supervisors (see Appendix 4). To ensure clarity, the interview questions were piloted on the nurses at the staff development unit at the hospital used in the research. These interviews were not included in the research.

3.6.4.2 Observation as a form of data collection

Observation is one of the most used methods of data collection in qualitative research (Polit & Beck, 2021). However, there are limited resources showing how an observation should proceed and how the observer should conduct the observation (Conroy, 2017). The observation, the observer, and observation notes and fieldnotes as they relate to the current study are explained in the following sections.

The observation

Observation is the second-most popular means of collecting data in qualitative research, after interviewing (Conroy, 2017). Observation is defined as a systematic method of describing events, behaviours and items in a study setting (Marshall & Rossman, 2014). Observation allows the researcher to inspect participants comfortably for the purpose of finding patterns and themes in their setting (Thorne, 2016). In the context of healthcare research, observations allow the service delivery that healthcare professionals provide in a clinical setting to be described (Conroy, 2017). In this research project, healthcare professionals were observed during the delivery of care for patients with T2DM. Observing participants in their natural environment provides the best opportunity to view participants' actions in an actual setting (Conroy, 2017).

The observer

There are different ways for the researcher to observe. De Laine (1997) explains that the researcher can assume the role of a participant *emic* (insider or outsider) or a non-participant *etic* while conducting their observation. The observer's role varies from the

researcher being a complete observer (where they participate without letting other participants know they are the researcher), to being a participant as an observer (which is used for non-research reasons), to being a peripheral member (where they are not a group member but participate in the activities), to an observer as a participant (which is for research purposes and requires less engagement with participants and more observation) to a complete observer (in which they are limited to listening and observing the participants) and to non-participation (where they are not present at the setting and delegate the role to someone else) (Baker, 2006; Conroy, 2017; Spradley, 2016).

I have previously worked as a nurse at the hospital where the research was conducted. This made it easy to establish rapport with the participants, allowing them the freedom and comfort of being in their actual environment. According to Kawulich (2005), previous acquaintances and personal contacts at the research setting can help with the development of trust and rapport. I, the researcher, chose to become a complete observer during the observation session with the participants. Although there were instances where I wanted to join the consultation session, as the researcher, I acknowledged and understood that my role at the session was as an etic or outsider, and consciously restricted myself to observing and listening only.

Observation notes and fieldnotes

Notes were taken as a method of recollection of what occurred during the observation sessions, and my (the researcher's) reflections on how these observations could help with answering the research question. Different types of notetaking are recommended by researchers; some suggest taking notes during the observation session (Conroy, 2017; Kjerholt, Wagner, Delmar, Clemensen, & Lindhardt, 2014), while others suggest waiting until the end of the session to write their notes (Conroy, 2017; Fetterman, 2019). In the current study, waiting until the end of the session to write fieldnotes allowed me (the researcher) to fully observe and understand the process of how healthcare professionals

provide T2DM management to their patients (see Appendix 10). Fieldnotes provided a map of how the healthcare service was delivered to patients with T2DM, and the process patients go through to access bariatric care to treat their T2DM (see Appendix 11).

3.6.5 Participants

The disciplines that ideally should be included in this study were identified via the literature review (Chapter 2) and compared to the available healthcare professionals working at the hospital in Kuwait who were engaged in the management of T2DM patients using bariatric surgery. Participants who were eligible included bariatric physicians, surgeons, diabetologists, nurses, dieticians, physiotherapists, pharmacists, medical doctors, psychologists and psychiatrists. Other healthcare professionals such as radiologists, orthopaedic surgeons, laboratory technicians and neurologists were not included due to the indirect relationship they had in the management of the use of bariatric surgery as a treatment for T2DM. The hospital also has a plastic surgeon who was approached by the staff development unit nurses regarding the study, but the surgeon declined involvement citing they were too busy to participate.

A total of 18 healthcare professionals participated in this research project, in which five healthcare professionals participated for both the interview and observations during their consultation sessions with patients. Twelve healthcare professionals participated in interviews and one additional healthcare professional participated in the observation aspect of the research.

Participants included nurses (n = 5), pharmacists (n = 3), physiotherapists (n = 3), dietitians, (n = 2), medical doctors (n = 2), a general surgeon (n = 1), a diabetologist (n = 1) and a bariatric physician (n = 1) all working in the outpatient clinics. The psychologists and psychiatrists were approach by the nurses from the staff development unit at the hospital to encourage them to join this research project. However, the psychiatrists stated

that they only saw patients who needed to be assessed for their eligibility to join the army. One psychiatrist said that they had no part in managing people with T2DM or bariatric surgery, while the other stated they were too busy.

Eight face-to-face interviews took place at a mutually agreed time and location within the hospital grounds. Nine healthcare professionals preferred to be interviewed over the telephone. The interviews lasted between 20 and 60 minutes and were audio-recorded. I allocated pseudonyms when transcribing the data to ensure confidentiality. I was the only person who could link the pseudonyms back to the participants. The interviews were conducted in English. Only one interview was conducted in Arabic in which I translated the data. This transcript was checked, independently, by one of the staff working at the hospital's staff development unit who was fluent in English and Arabic. The transcripts were then handed over to the healthcare professionals for further confirmation of what they said during the interview. All the participants returned their transcripts to the researcher without any comments.

3.6.6 Data analysis

Thematic analysis was used to analyse the interview and observation data. Thematic analysis aims to identify, organise and offer insight into patterns of meaning (themes) across a dataset (Braun & Clarke, 2012). According to Morse (2012), data analysis is a process that demands perceptive questioning, active observation, combining pieces of data into similar categories relevant to the research question and recognising significant data from insignificant data. Braun and Clarke (2012) explain that by using thematic analysis, the researcher can identify patterns in their data that help generate relevant answers for a defined research question. Thorne (2016) explains that there is a theoretical level in which researchers skilfully engage with the data in a way that allows a shift beyond description. Thorne (2016) describes how understanding the data begins as soon as they

are collected, which is a continuing process. The researcher becomes deeply aware of repeated ideas and information during this process (Thorne, 2016). This process starts by describing the clinical phenomenon, and then initiating a basic form of interpretation of the phenomenon that gradually reveals the message (Thorne, 2016).

Interpretive description uses inductive analysis to obtain understanding of clinical phenomena that informs the characteristics, patterns and structure of that phenomena (Thorne, et al., 2004). Braun and Clarke (2006) explain that the approach to data analysis works alongside the data collection process, in which the researcher is provided with some time to reflect on the data collected to make some early analysis before data collection resumes. Thorne (2016) encourages the researcher to surpass intuitive analysis by thoughtfully and analytically engaging with the data to produce a well-formed analysis. Hence analysis is an intellectual process; where it does not follow an exact formula but requires a logical and rational process that leads the research to producing meaningful findings (Thorne, 2016).

The analysis of the interviews, observation notes and field notes for this research was conducted using an inductive process following Braun and Clarke (2006) six steps for thematic data analysis as described below.

3.6.6.1 *Step 1: Familiarising oneself with the collected data*

In the first step, I transcribed the audio-recorded interview sessions. Although the official language in Kuwait is Arabic, healthcare professionals were given the choice of conducting the interviews in either English or Arabic depending on the language they felt more comfortable with. Healthcare professionals in Kuwait use English due to the diversity of nationalities working in hospitals. However, some healthcare professionals in this research used a combination of Arabic and English during the interview, with Arabic being

translated into English by me as I am fluent in both languages. I also checked the transcripts with the audio recordings for accuracy.

I read and re-read the interview transcripts several times to help immerse myself into the data. This method of re-reading also provided me with the ability to look for patterns, find meanings and become familiar with the data. This step also allowed me time to take notes and mark ideas that would help in preparing the data for the next step.

3.6.6.2 Step 2: Generating initial codes

The second step produced initial codes from the ideas and patterns identified in Step 1. Each transcript was read systematically, not leaving out or ignoring phrases of sentences, and giving the dataset equal attention. Understanding each phrase helped in assessing the meaning in the dataset. In this step, I organised my ideas and provided codes to these phrases and segments in the dataset. The dataset was coded for all potential patterns and themes. Including all codes helped me to identify relevant themes and findings later in the analysis process. NVivo software was utilised to assist with organising the transcripts and undertaking coding.

3.6.6.3 Step 3: Searching for themes

In the third step, I grouped the codes identified in Step 2 into potential categories, and then determined whether these themes could be collated under an overarching theme. I searched for and identified possible relationships between the codes and themes to find relationships between overarching themes and subthemes. Some codes did not fit into the themes that were generated and were therefore grouped under a miscellaneous theme.

3.6.6.4 Step 4: Reviewing themes

In the fourth step, the generated themes from Step 3 were revised and reviewed. Two phases were carried out in this step. The first phase was to review the themes in Step 3,

which was required reading the coded data for consistency in their patterns. The data were combined to one theme to represent the theme. The theme was then refined and labelled to present the coded data it contained. Data code extracts that did not fit in a theme were considered in other themes, or separated for further analysis.

The second phase was to read the refined themes in relation to the entire dataset to ensure they reflected the meaning of the data accurately. Some themes were collapsed into one theme while others were discarded due to a lack of relationship with the data. This process allowed themes missed in Step 3 to emerge. At this point, I as the researcher recognised when the theme was fully developed and created a thematic map before transferring to the next step. This stage enabled the overall story to be defined and the answer to the research question to be identified.

3.6.6.5 Step 5: Defining and naming themes

The purpose of this step is to identify the overall aspect of each theme and the data they capture. This was achieved by returning to the data extracts that were gathered into a theme and identifying how the data and theme answer the research question. The themes were also considered in relation to each other and the overall story they produce when answering the research project's sub-questions. The themes were named suitably to represent their content. This step included my supervisors for member checking of my themes and analysis. Members of a team are frequently engaged in member checking by sharing observations and tentative interpretations of the researcher with the participants and helping them reflect on whether the themes fit with the experience and phenomenon (Björkdahl, Palmstierna, & Hansebo, 2010; Smith, Hale, Olson, Baxter, & Schneiders, 2013; Thorne, 2016). My interdisciplinary supervisors were involved throughout the data collection and analysis process which further shaped my evolving understanding of the

findings pertaining to a multidisciplinary team approach for T2DM management using bariatric surgery as a treatment option.

3.6.6.6 Step 6: Producing the report

In this final step, I as the researcher obtained a set of finalised themes. I chose compelling extracts and related them back to the research question and the literature. When writing up the analysis, I defined a simple, concise and non-repetitive way to present the findings. I also ensured that the findings were not only descriptive, but also referred back to the literature and research question for an argumentative and interesting discussion.

3.6.7 Impact of COVID-19 on the research project

A coronavirus identified in 2019, SARS-CoV-2, caused a pandemic of respiratory illness, called COVID-19 (Sauer, 2021). Older people and people with chronic diseases such as cardiovascular disease, diabetes, chronic respiratory disease and cancer were at increased risk of developing severe symptoms that could lead to respiratory failure, irreversible heart damage, kidney failure and death (World Health Organisation, 2021a).

The COVID-19 pandemic impacted the progress of this research project. I was a full-time PhD student living in Adelaide, South Australia. On 16 February 2020, I flew back to Kuwait to commence data collection, prior to the pandemic becoming widespread. I left all my research materials and notes in Australia thinking that data collection would last three months, as planned. In March 2020, Kuwait went into lockdown, which continued until October 2020. Kuwaitis studying abroad were allowed to travel back to their studies at this time. For me, this was not possible because by this time, Australia had closed its borders to international students. Data collection was delayed several months, and access to resources was limited and restricted to online resources. At the same time, ordering

resources online such as books, and shipping of research materials and notes from Adelaide was not possible. These impacts are discussed in more detail below.

3.6.7.1 Impact of COVID-19 on data collection

Kuwait was one of the first countries to close its airport and go into total country lockdown, which went from 17 March 2020 until 6 June 2020. A curfew was then instated, giving people a two-hour recreational time to exercise. However, social distancing and face masks were obligatory. The curfew gradually reduced to 20 hours, then 18 hours and then 12 hours, before it was finally lifted. The curfew was enforced for approximately two months before it was lifted.

Hospitals and supermarkets were the only establishments operating during lockdown. Hospital employees and frontline staff such as police officers, firefighters, pilots, soldiers, medical practitioners and nurses were the only people allowed inside hospitals. Medication refills were delivered to people's doorstep and patients who were not diagnosed as critical cases were sent home to continue their treatment. Data collection for the current project therefore stopped on 17 March 2020 and commenced again on 6 June 2020 when the curfew lifted. The intended time to complete data collection was three months (March to May 2020). However, due to the lockdown and curfew this was extended to September 2020. Partial curfew was then reinstated in January 2021 and lasted until May 2021.

3.6.7.2 Impact on interviews

Face-to-face interviews were conducted at the beginning of the data collection period. After the commencement of data collection, five healthcare professionals who were initially interested in participating revoked their interest due to COVID -19 restrictions. The planned face-to-face interviews were replaced by telephone interviews because of the COVID-19 precautions and restrictions. Although some healthcare professionals pointed

out the inappropriateness of conducting research during a pandemic, others still wanted to participate but often rescheduled their interview times.

3.6.7.3 Impact on observations

The observations of healthcare professionals were conducted after the curfew was eased, from June to September 2020. Observations were short and were only conducted for prescription refills and people who had had bariatric surgery less than one year prior to the observation. Due to the pandemic, protocols were followed strictly, which included wearing facemasks and maintaining social distancing of two metres throughout my stay inside the hospital grounds. Many consultation rooms within the study hospital were small and did not allow enough space to maintain social distancing. The size of the consultation room restricted possible healthcare professionals to participate in my research project. Six healthcare professionals participated in the observations.

3.6.8 Evaluation criteria for interpretive description

Qualitative researchers have agreed on evaluation criteria that is required to be met by every qualitative researcher where this criteria describes how to demonstrate the quality of the research project that is being undertaken (Caelli, Ray, & Mill, 2003; Thorne, 2016), or the validity of the research (Angen, 2000; Whittemore, Chase, & Mandle, 2001). For the production of a rigorous and meaningful qualitative research, Thorne (2016, pp. 233−235) describes the following aspects, which were included in the evaluation criteria: *epistemological integrity, representative credibility, analytical logic and interpretive authority*. These criteria were used to evaluate the findings of this doctoral research.

3.6.8.1 Epistemological integrity

All qualitative research should display epistemological integrity by following the methodological rules and clearly explaining the research study processes (Thorne, 2016).

The epistemology for this research, the nature of the research question asked, methodological choices for data collection, interpretation and strategies that enhance research dissemination should be appropriately connected (Thorne, 2016). My epistemological stance was presented at the beginning of this chapter, in which the knowledge found is created by understanding human experiences and unfolding the interpretation of these experiences. Knowledge is generated by the participant initially, and later by me as the researcher to form part of the research findings.

3.6.8.2 Representative credibility

According to Thorne (2016), representative credibility requires that qualitative studies demonstrate that the theoretical claims are consistent with the method by which the participants were sampled. Thorne (2016) explains that representative credibility is enhanced when the researcher uses maximal variation sampling. Maximal variation sampling aims to highlight central themes or ideas among a diverse sample size. This technique assists in identifying common characteristics in a sample with variation. Common themes that emerge from a heterogenic sample might indicate that, despite a diverse sample, common core experiences emerge rendering them critical to the findings (Thorne, 2016).

To ensure the study's representative credibility, I used purposive, maximal variation sampling. Purposive sampling was employed to recruit specific individuals, in this case, healthcare professionals who have provided T2DM care, because they shared common experiences. Prior to recruitment, I identified which healthcare professionals routinely managed patients with T2DM and who could therefore assist in understanding the phenomenon being studied.

By using purposive, maximal variation sampling, I aimed not to generalise findings, but to demonstrate to readers that despite variation in sampling, managing patients using

bariatric surgery as a treatment option for T2DM was a core component, assisting in finding meaning and understanding.

To assist in representative credibility, I had prolonged engagement with study participants during individual interviews. The assumption was that spending more time with participants during interviews allowed me a better opportunity to obtain rich data. More time spent with participants seemed to result in an increased level of trust between myself and the participant, which in turn increased the representative credibility or validity of the research results.

3.6.8.3 Analytic logic

A clear, explicit reasoning from philosophical underpinnings to interpretation of study findings, based on the research data, must be apparent in interpretive description (Thorne, 2016). The researcher must make visible the analytic logic, including the inductive reasoning process that took place and resulted in the researcher arriving at the study findings (Thorne, 2016). Displaying the analytic logic of the research process strengthens the study's credibility (Thorne, 2016).

One way to demonstrate analytic logic to the reader is through an audit trail; an essential ingredient in the research process (Thorne, 2016). Interpretive description calls for an *"ongoing analytic process"* (Thorne, 2016, p. 152) in which the research is carefully and consistently documented during the entire length of the research process. To track the analytic process, I provided an audit trail (coding themes) for the reader, outlining the decision process that took place in the following chapter (Chapter 4).

As a component of data collection, data management, and data as a whole, journals were essential. During ongoing data collection, there was an opportunity for responsive interaction between data collection and analysis, for refinement of the data collection

technique, and for inquiry as new insights were discovered. According to Polit and Beck (2021), reflective journaling is an important aspect of conducting qualitative research. Reflective journaling is used to document thoughts, decisions, biases and assumptions. During my project, as a component of data collection, data management, and data as a whole (i.e. observations, thoughts, views, ideas, fieldnotes), I found journaling to be essential. During the data management phase of my project, there were opportunities for my responsive interaction between data collection and analysis, for refinement of data collection techniques, and for inquiry as new insights were discovered. Reflective journaling took place during data collection, both prior to and after individual interviews and observations, as well as during data analyses. Journal entries contributed to the dataset in that they captured my observations of the participants and contributed to critical analysis of my thoughts, which shaped the data and the findings. By documenting the inductive reasoning process, I aimed to capture how I came to understand the data. I also took field notes during interviews to capture thoughts within the context of the environment. These field notes were reviewed by the supervisory panel and incorporated into the analysis process when appropriate.

3.6.8.4 Interpretive authority

Interpretive authority requires the researcher to find truth while acknowledging their biases, which would demonstrate that their interpretation is trustworthy (Thorne, 2016; Thorne et al., 2004). The researcher's interpretation is inevitably individualised and contextual (Thorne, 2016). However, it is imperative the audience is able to *see* the researcher's interpretations (Thorne, 2016). For this research project, I offer a comprehensible academic representation of the phenomenon under examination while avoiding over-interpretation whereby the dataset does not match my interpretations.

According to Thorne et al. (1997), it is possible to achieve interpretive authority by bringing emerging conceptualisations to participants during interviews. In the current study, as data analysis was ongoing, I carefully examined ongoing conceptualisations that were taking place and presented them to the participants in the interviews. This assisted in determining if the beginning conceptualisations were in fact accurate, or if they were simply built on my bias and assumptions. To do this, I threaded emerging themes from early interviews to subsequent interviews and interview questions.

3.6.8.5 Other criteria

The goal of interpretive description is to contribute knowledge to the discipline (Thorne, 2016); therefore, Thorne (2016) suggests additional criteria that researchers should be aware of when developing a study. These include moral defensibility, disciplinary relevance, pragmatic obligation, contextual awareness and probable truth.

Moral defensibility is acknowledging the importance of the research, why the knowledge is important and the purpose for researching it (Thorne, 2016). This research is morally defensible because of the potential to improve the quality of T2DM care for patients and their families. Interpretive description should also have disciplinary relevance, with the researcher explaining if and how the research will contribute to knowledge development related to the specific disciplinary science (Thorne, 2016). Findings from this research study demonstrate disciplinary relevance in that they might assist in the educational and professional development of nurses to provide quality T2DM care.

A pragmatic obligation to determine study credibility refers to the researcher's awareness that despite interpretive description's limit to generalisability, the findings might be applied in practice (Thorne, 2016). It is critical that the researcher recognises that any research findings are capable of being applied in practice, regardless of being proven or not (Thorne, 2016).

An interdisciplinary supervisory panel was utilised during data collection and analysis to review early findings and determine whether they were appropriate and consistent within the context of the nursing profession and the phenomena being studied. Member checking was employed in a conscious effort to reduce research bias, based on my practice knowledge, and assisted in my development of the findings, allowing for a wide-ranging interpretation of meaning possible to highlight the phenomenon being studied.

My contextual awareness acknowledged that reality, and ultimately the study findings, are influenced by social constructions and while findings might be true, they are not absolute. Findings from this research study are not generalisable as they are context-specific, and the study might not be easily replicated. However, the findings might be transferable to other contexts.

3.7 Summary

This chapter presented the theoretical and philosophical underpinnings of the interpretive description approach used, my positionality in this research project and the study design. Interviewing and observing participants provided an actual picture of the management process that patients with T2DM received. Inductive analysis of the data was undertaken by following Braun and Clarke's (2006) data analysis process method. To present credible and rigorous findings, the evaluation criteria for interpretive description was considered throughout the data collection and data analysis process.

The next chapters, Chapter 4, 5 and 6, present the findings from the interviews, observations and fieldnotes that were obtained from participants. These chapters will also provide my interpretation of the data analysed. Following chapter 6 is the discussion chapter (Chapter 7) where I will discuss the findings. Chapter 8 will present the implications and recommendations, identify the strengths and the limitations, present the new knowledge discovered from the research before ending with the thesis conclusion.

Chapter 4: Theme 1 – Barriers to efficient type 2 diabetes mellitus management

4.1 Introduction

The purpose of this interpretive description study was to explore and understand healthcare professionals' perceptions of a multidisciplinary team approach in managing people using bariatric surgery as a treatment option for T2DM. Eighteen healthcare professionals from various disciplines participated in interviews, observations, or both, between 1 March and 1 September 2020. The data were obtained through conducting semi-structured interviews and observation sessions with healthcare professionals managing people with T2DM at the medical and diabetes, surgical and bariatrics, pharmacy, dietetics and physiotherapy outpatient departments in a government hospital in Kuwait. These participants were directly involved in the management of people using bariatric surgery as the treatment option for T2DM. These healthcare professionals shared their beliefs about a multidisciplinary team approach, their attitudes towards the organisation, and their perceptions of the role of other disciplines when it came to the management of people with T2DM. A detailed description of the data analysis process was provided in Chapter 3.

The findings of this project are presented in three chapters representing each of the major themes. Three major thematic groups and subthemes emerged during data analysis: were barriers to efficient T2DM management, expectations towards a multidisciplinary team approach, and advantages and disadvantages of a multidisciplinary team.

This chapter includes a description and interpretation of the first major theme – barriers to efficient T2DM management – and concludes with a summary of the findings of that first major theme. Chapter 5 presents the second major theme – expectations towards a multidisciplinary team approach – which includes an interpretation of the theme and

subthemes, and ends with a summary of the findings. The final findings chapter, Chapter 6, describes and interprets the third major theme – advantages and disadvantages of a multidisciplinary team, the summary of the findings in the third major theme, and ends with a conclusion of the findings from all three findings chapters.

4.2 Participant characteristics

Participants included nurses (n = 5), pharmacists (n = 3), physiotherapists (n = 3), dietitians, (n = 2), medical doctors (n = 2), a general surgeon (n = 1), a diabetologist (n = 1) and a bariatric physician (n = 1), all working in the outpatient clinics of the hospital in Kuwait. The psychologists and psychiatrists were approach by the nurses from the staff development unit at the hospital to encourage them to join this research project. However, the psychiatrists said that they only saw patients who needed to be assessed for their eligibility to join the army. One psychiatrist said that they had no part in managing people with T2DM or bariatric surgery, while the other said they were too busy. The interviews lasted between 20 and 50 minutes.

A total of 18 healthcare professionals participated in this research project, in which five healthcare professionals joined both the interview and observation sessions, 12 healthcare professionals participated in the interview, and one healthcare professional participated in the observation session. Eight face-to-face interviews took place at a mutually agreed time and location within the hospital grounds before the pandemic restrictions were imposed. Nine healthcare professionals agreed to be interviewed over the telephone due to the pandemic restrictions. Although the participants were from various educational backgrounds and disciplines, data saturation was achieved after the 10th interview, where no new information was mentioned relevant to providing substantial information to the research topic. The interviews were audio-recorded, and participants was allocated a pseudonym when the data were transcribed to ensure confidentiality. I was the only

person who could link the pseudonyms back to the participants. The data were transcribed by me, the researcher. The transcripts were then handed over to the healthcare professionals for further confirmation of what they said during the interview. All the participants returned their transcripts to me without any comments.

Participants were healthcare professionals with varied levels of education, years of experience, nationality, religious affiliation, and languages (see Table 4.1).

Table 4.1: Participant characteristics

Participants (n)	**Level of education (n)**	**Language (n)**	**Nationality (n)**	**Religious affiliation (n)**
Dietitians (2)	PhD (1) MSc (1)	Arabic (2) English (2)	Kuwaiti (2)	Islam (2)
Nurses (5): ➢ Bariatric = 1 ➢ Medical = 1 ➢ Diabetes = 2 ➢ Surgical = 1	BSc (2) Diploma (2) Certificate* (1)	Arabic (3) English (5) Hindi/Malayalam (2)	Kuwaiti (2) Indian (1) Egyptian (2)	Christianity (2) Islam (3)
Pharmacists (3)	PhD (2) BSc (1)	Arabic (2) English (2)	Kuwaiti (3)	Islam (3)
Physicians (5): ➢ Bariatrician = 1 ➢ Medical = 2 ➢ Diabetologist = 1 ➢ Surgeon = 1	PhD (1) MD with specialisation (4)	Arabic (4) English (5) Hindi/Malayalam (1)	Kuwaiti (2) Egyptian (2) Indian (1)	Christianity (1) Islam (4)
Physiotherapists (3)	MSc (1) BSc (2)	Arabic (2) English (3) Hindi/Malayalam (2)	Indian (3)	Christianity (2) Hinduism (1)

Note: *Vocational degree, (n) = number of participants, BSc = Baccalaureate, MSc = Master of Science, PhD = Doctor of Philosophy

Most of the participants had over 10 years of experience at the hospital where the research was conducted, only two had less than 10 years. The participants had different cultural backgrounds with most being Kuwaiti (n = 10), Indian (n = 5) and Egyptian (n = 3).

Participants also followed different faiths, with 13 following Islam, three Christianity and one Hinduism. Several of the participants spoke two or more languages, with English as the common language spoken by all the participants (n = 17), followed by Arabic (n = 13) and then Hindi/Malayalam (n = 5). Most were Muslim Kuwaitis, who spoke Arabic and English, with at least a vocational degree and had worked for more than 15 years in their profession.

4.3 Themes and subthemes

By following Braun and Clarke's (2006) six steps for qualitative data analysis, the interview transcripts, observation notes and fieldnotes were coded separately using an inductive analysis process. However, due to the limited timeframe of the observation sessions, the codes from the observations were coded inductively and then categorised deductively with the categories that were already generated from the interview transcripts. I was able to find patterns and similarities while coding the data obtained. Six categories were found from the codes generated from the data. An example of the process carried out for coding and thematic analysis is illustrated Table 4.2. The categories were further analysed for their relevance to answer the research questions. Categories that showed a possible relation were combined under one theme.

Table 4.2 Sample of coding and thematic analysis process

Quote	Code	Category	Subtheme	Theme
I think because there is no protocol or guideline to follow. – Pharmacist D3	Absence of guideline	Guidelines and protocols	Barriers imposed by the organisation	Barriers to efficient T2DM management
We did the protocol for the clinic for all dietitians to ask the same the question for all patients, especially in the first visit, and then we keep a follow-up card, a small one, plus the assessment sheet that we already have. – Dietitian B1	Department protocol			
You know our hospital settings and management. They change their protocols every 2-3 weeks. And everyone wants to do everything. – Nurse C3	Frequent change in protocol			
Also update their knowledge on how to care for people with diabetes according to the latest guidelines and evidence-based practice. – Nurse C1	Outdated guideline			

There were three major themes that were identified from the data: 1) barriers to efficient T2DM management 2) expectations towards a multidisciplinary team approach; and 3) the launch of a multidisciplinary team. These major themes and their subthemes that emerged from the data analyses represent the healthcare professionals' personal beliefs and experiences when managing patients with T2DM and are presented in detail in this and the following two chapters. The diagram below illustrates the major themes and subthemes that were identified from the analysed data (Figure 4.1).

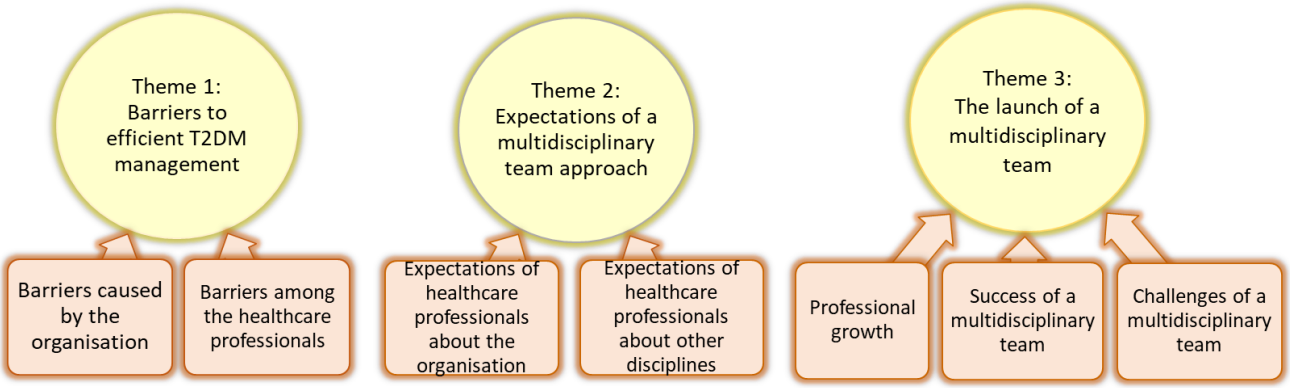

Figure 4.1: Major themes and subthemes

4.4 Theme 1: Barriers to efficient type 2 diabetes mellitus management

The first theme describes the obstacles that healthcare professionals face when providing care for people with T2DM who attend the outpatient clinics. Two subthemes were found that represent the barriers that prevent healthcare professionals from providing efficient T2DM management: barriers imposed by the organisation and barriers among the healthcare professionals (Figure 4.2).

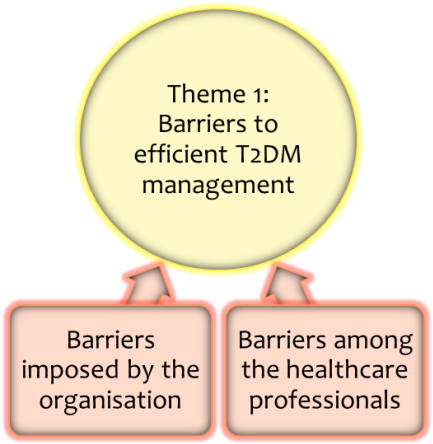

Figure 4.2: Theme 1 and subthemes identified from data analysis

4.4.1 Subtheme 1: Barriers imposed by the organisation

This subtheme presents the barriers identified by healthcare professionals during the interviews that they believed were caused by the organisation. Despite the differences in

the disciplines of the healthcare professionals, they shared common views on the obstacles they face when providing care to patients with T2DM. These organisational barriers are guidelines and protocols, alternative obesity management options, hospital staffing, and hospital structure and setting. The following sections discuss these aspects in detail.

4.4.1.1 Guidelines and protocols

The healthcare professionals reported that to provide efficient T2DM management, the hospital administration required guidelines and protocols to be followed. While they agree that protocols and guidelines are necessary, the healthcare professionals had perceptions about the guidelines for T2DM management in the hospital that conflicted with that of the administration. Their perceptions encompassed the restrictions imposed by the organisation on allied healthcare professionals, the absence of guidelines in some instances, problematic department guidelines and guidelines being outdated for the management of people with T2DM.

Restrictions imposed by the organisation

Allied healthcare professionals include nurses, pharmacists, dietitians and physiotherapists. According to the healthcare professionals interviewed, these allied disciplines are restricted by the hospital administration from providing the necessary management to patients using bariatric surgery as a treatment option for T2DM due to the inability of these healthcare professionals to refer patients to other departments. For example, the physiotherapists reported that they did not have the authorisation to refer patients, and that they could only request patients to see the physician for routine check-ups or have these check-ups attended to at the emergency department:

> We don't have the authority to refer patients … but we ask the patients on a daily basis in our clinic if they have their tablets or if they have any problem. We ask them to go to

> casualty for check-up. If the patient does not feel well, we will cancel the physiotherapy session. – Physiotherapist B4

Another health discipline (dietitian), also reported a similar restriction by the hospital administration who forced them to ask the patient to return to their physician to be able to receive the required treatment:

> Unfortunately we're not authorised to refer or to write any medications … you have to go back to the doctor. – Dietitian B5

Physicians reported that they prescribed the medication and the pharmacists dispensed them to the patients:

> So we just prescribe the medicine and the pharmacist gives it to the patient. – Physician C5

Pharmacists expressed frustration about how their role was limited by the hospital administration to dispensing medicine to patients. These pharmacists also reported that they were not authorised to prescribe medicine or change patients' prescription without a doctor's order:

> We didn't have the authority to work as pharmacists … because we are not allowed to prescribe or even change medicine, so the doctor is enough. – Pharmacist D3

> The doctor will change the medicine for him … we're not allowed to prescribe anything – Pharmacist B8

One pharmacist reported that the reason behind their inability to amend patients' prescriptions was due to their restricted access to patients' files, hence they did not have a clear history of the medicine that these patients took that could counteract or interact with other medicine:

> Some patients come to me and ask me to change their medicine because it's not working for me and I couldn't even change it. I tell him that he has to go back to the doctor for him to change the prescription. We, as pharmacists, just don't have the authority to do it … we don't have the authority to see the patient's file. So we don't have the history and whether he complains of other diseases, so it's very difficult for me to give this kind of advice. In my position, we can see the patients that are taking GLP1 [Glucagon-like peptide-1] only. – Pharmacist C1

Physicians were the only healthcare professionals with the authority from the hospital administration to access the patient's file and refer them to the required departments. Physicians reported not having any type of restrictions and were able to obtain the necessary information and requirements needed for the management of patients using bariatric surgery as a treatment option for T2DM. For example:

> All doctors can refer to patients' files when needed. – Physician D4

Absence of guidelines

Physicians were vital when it came to following and implementing protocols and guidelines in the hospital. When asked about barriers to providing efficient T2DM management, physicians reported that a guideline would help identify the role of different disciplines, and that this guideline would make managing people with T2DM consistent. This barrier was also perceived for patients with T2DM eligible for bariatric surgery. For example:

> We need a guide to follow. It is very important for allocation of health personnel, to define the role of each member and how to communicate with each other. – Physician D2

> So I think the best thing is to follow a scheme on the guideline and the role for each of the specialties and also when is his role and what was the period to be to follow up the patients. – Physician B6

One of the physicians also reported that having a protocol to follow would benefit the delivery of T2DM management and care:

> In my opinion, a clear protocol is important for all departments to follow when managing patients. This will enhance patients' care and increase patients' satisfaction in our hospital. – Physician D4

The lack of guidelines and protocols in a department impacted on the physicians' ability to provide people using bariatric surgery as a treatment option for T2DM the needed care that these patients sought. Nurses, pharmacists and dietitians also insisted that the need for a guideline and protocol for the management of people with T2DM was necessary to provide efficient T2DM patient care including multidisciplinary care. These healthcare

professionals varied in their disciplines and roles. However, they all explained that a protocol was not available, but important to have, to be able to attend to patients efficiently. Some examples of the discussions are as follows:

> There is no proper management from higher authorities, even if we want to make one [guideline or protocol], the manager will not be serious about it and will not give you the resources and facilities. – Nurse C4

> We need a standard orders or protocols to follow. – Nurse C3

> I think because there is no protocol or guideline to follow. – Pharmacist D3

> There should be a protocol at work. And it should be mandatory to do it. It's very important. – Dietitian B1

Problematic protocols

These allied healthcare professionals stated their views on the availability of a protocol or guideline for patients using bariatric surgery as a treatment option for T2DM, but reported that the protocols were created for a particular department and not shared outside that department. Other disciplines and departments were not aware of this protocol. Therefore, different departments followed different protocols, which may have overlapped in patient teaching, examinations and sources of information accessible to patients with T2DM. Dietitians followed a protocol they initiated to help them provide the best service to their patients:

> We did the protocol for the clinic for all dietitians to ask the same question for all patients especially in the first visit and then we keep a follow-up card, a small one, plus the assessment sheet that we already have. – Dietitian B1

The bariatric clinic was also a department that followed its own guidelines and protocols to provide the care they found suitable for their patients. Other departments were aware of this guideline, which was not shared with them. An example of this is as follows:

> This patient should follow the globally accepted criteria and steps that we have before the surgery … the globally accepted guideline and international institutes to see which in the best regarding their case. – Physician C5

Outdated guidelines

Another issue that was identified by some healthcare professionals regarding guidelines for T2DM was using outdated guidelines or having to deal with frequent changes in protocols. Nurses found it difficult to manage T2DM when guidelines were long standing or changed every two to three weeks. These nurses, who worked in different departments, experienced the effect of frequent changes, or had the ability to recognise inefficient and inconsistent patient care, for example:

> You know our hospital settings and management. They change their protocols every 2 to 3 weeks. And everyone wants to do everything. – Nurse C3

> Also update their knowledge on how to care for people with diabetes according to the latest guidelines and evidence-based practice. – Nurse C1

The imposed restrictions that the organisation applied to allied healthcare professionals interfered with their ability to provide the necessary management that patients with T2DM needed. The absence of a standard and up-to-date guideline and protocol for the management of patients using bariatric surgery as a treatment option for T2DM was also seen as a barrier to providing efficient service delivery.

4.4.1.2 Alternative obesity management options

One of the barriers caused by the organisation that healthcare professionals reported was the lack of alternative obesity management options. Although bariatric surgery was one of the methods for weight loss and T2DM management, some patients preferred non-surgical methods such as pharmaceutical management. The healthcare professionals reported their views regarding alternative obesity treatments at the hospital, with some claiming that there was a lack of medicine that could assist with weight loss, while other healthcare professionals reported their lack of awareness about available alternative obesity management options, and limited availability of non-surgical weight loss treatments.

Physicians and nurses were aware of the pharmaceutical obesity management options. Although physicians and nurses knew that the hospital provided medication that assists in weight loss, these medications were not available for them to prescribe or administer:

> No, no it [medicine that assist in weight loss] is not offered in my clinic. – Physician D2
>
> No, in our department no we don't have. – Nurse C3
>
> We do not have a lot of non-invasive approaches for losing weight. – Nurse D1

Pharmacists did not seem to be aware of the available pharmaceutical treatments that could help with weight loss. For example, one pharmacist reported:

> We don't have medication for obesity management here … we are supposed to have all the necessary medicine that the patient needs in this hospital so he doesn't need to go anywhere else. – Pharmacist B8

Although non-surgical obesity treatment options were available for patients with T2DM wanting to manage their blood glucose levels, knowledge about pharmaceutical obesity medicines was limited to only some healthcare professionals, such as bariatricians and diabetologists, impeding cross-discipline communication and collaboration.

4.4.1.3 Hospital staffing

The organisation imposed barriers on healthcare professionals, restricting them from providing the T2DM and bariatric management and care that their patients required. The lack of healthcare professionals who were specialised in diabetes and bariatrics resulted in physicians seeking out nurses and other disciplines who were interested in working with patients having T2DM or bariatric management. These interested healthcare professionals were given the opportunity to develop their knowledge by taking courses to specialise in diabetes and bariatrics to be able to provide the patient care efficiently. For example:

> When I first came to the hospital, we didn't have bariatric nurse. So I had to train my own nurse by sending her to courses outside. She got four short but very helpful courses. She also took online courses that teach her how to deal specifically with bariatric patients, because and it's a fact, most of them are unstable psychologically,

> although they are not on any medication for their status but they are unstable because of their image about themself. – Physician C5

The healthcare professionals reported a shortage in hospital staffing including the number of staff, and the lack of staff in bariatric and diabetes specialisation areas. This shortage affected the quality of service delivery to patients with T2DM. Various disciplines criticised the lack of availability of specialised diabetes healthcare professionals, for example:

> Lack or shortage of health care professionals who are specialised in diabetes – Pharmacist D3

> Most of our dietitians actually they are not specialised in diabetes but they have some courses to know how to deal [with it] in the hospital I am working, I can see most of the dietitians know how to deal with weight loss mainly, but they don't know how to deal with diabetes patients with overweight. It's totally different. So I can see the majority of them are not specialising in diabetes management. – Pharmacist B6

> [There is a] lack of specialised health workers in diabetes. We don't have any diabetes nurse or dietitian who is specialised in this area. So they will not be able to provide the correct care. – Physiotherapist B2

Psychologists were commonly reported as being necessary for inclusion in management plans to help patients with T2DM and their mental health following bariatric surgery, for example:

> A psychologist must be involved directly after bariatric surgery. The mental health of many patients was affected after the surgery. And many of the patients regained the weight they lose and some of them become bigger than before. – Nurse D1

During recruitment, psychologists and psychiatrists were also approached by staff from the staff development unit to invite them to participate in this research project. However, the psychologists reported that their role was limited to assessing the eligibility of people wanting to enlist in the army, as indicated in my fieldnote.

Fieldnote: Recruitment process in staff development unit:

Staff development unit nurses reported back to me (the researcher) that during their recruitment in different departments they approached psychologists to enquire about their interest in participating in this research project. The psychiatrist refused to participate saying that they only conduct assessments for people enlisting for the army, and that other cases would be referred to the psychiatrists.

Psychiatrists replied to the healthcare professionals that they were either too busy to participate in research or were not relevant in T2DM management. In my fieldnote, I noted what happen during the recruitment.

Fieldnote: Recruitment process in staff development unit:

Staff development unit nurses reported back to me (the researcher) that they approached psychiatrists to recruit them for the research project. This was done early in the day before their consultation sessions, to see their interest in participating in this research project. One of the psychiatrists said they don't have a role in the management of people with T2DM or bariatric surgery. Another psychiatrist said they were too busy to participate in the research project.

When it came to healthcare professionals managing people with T2DM, healthcare professionals often saw themselves as being incapable of providing efficient T2DM management due to shortages in specialised disciplines and restricted authorisation when providing T2DM management for people using bariatric surgery as a treatment option for T2DM.

4.4.1.4 Innovation and technology

An organisational barrier that was imposed on healthcare professionals was the absence of a computerised system that could assist in providing patients with efficient T2DM management. The healthcare professionals reported the lack of a computerised system in their respective departments, for example:

> There should be a centralised [computerised] system that has all patients' information that can be used by any of us to plan the care and treatment plan. – Dietitian B4

> We keep a follow-up card, a small one, plus the assessment sheet that we already have. Unfortunately, we don't have a computerised system to keep track, we only have papers. So we either give it to the patient and leave a copy with us or just give it to the patient. – Dietitian B1

> There is no [computerised] system for us to see the patients record by ourselves. – Physiotherapist B2

However, I observed computers in various outpatient departments at the hospital, although during my observations I noted that the computers in each of the departments did not appear to be linked to other departments. Each department had a computerised system that only appeared to serve the department itself, which was reported by a physiotherapist and noted as a fieldnote during the period of data collection as below:

> We [healthcare professionals from different departments] can communicate but we have to call [via telephone] that department and ask about the patient. – Physiotherapist B2

Fieldnote: Medical clinic network system:

The medical clinic is equipped with a computer at the reception desk which is linked to the computers inside the consultation rooms which allows the medical physicians to call patients when it's their turn. The system in the medical clinic is not connected to other departments e.g. bariatric and surgical, dietetics, diabetes, physiotherapy and pharmacy departments.

Fieldnote: Bariatric clinic network system:

The bariatric clinic is located inside the surgical clinic. Two computers are available at the reception and linked to the computers in the surgical and bariatric consultation rooms. This system is not connected to other departments such as diabetes, physiotherapy, dietetics, medical and pharmacy departments.

One of the healthcare professionals expressed disappointment about the current hospital system being outdated:

> It hasn't changed in the last 15 years at least. And something new has to happen especially [now] that everything is involving technology and teamwork. – Pharmacist D3

Technology was one major aspect healthcare professionals would have liked to utilise during T2DM management of their patients. They believe that a computerised system would benefit the way they provide T2DM management where they could instantly access patient records and decide on a suitable management plan that is accessible to all the healthcare professionals from the different disciplines and departments.

4.4.1.5 Hospital setting and structure

The impractical setting structure of the rooms and departments were organisational barriers that interfered with the care and management that healthcare professionals provided to patients with T2DM. Departments that were directly managing patients with T2DM were located at varying and challenging distances from other departments. My fieldnotes below describe and demonstrate the challenges faced by patients with T2DM.

Fieldnote: Hospital structure:

The parking area is shaded. However, the walk from the multistorey parking to the hospital building takes about two to four minutes and is not shaded. The weather in summer can rise to 50 degrees centigrade, which can be an uncomfortable walk for people (patients and employees at the hospital). The diabetes clinic is a one to two-minute walk from the building entrance and is located on the ground floor. It takes two to four minutes to walk from the diabetes clinic to the bariatric clinic and pharmacy, and approximately a seven-minute walk to the physiotherapy department, which is also located on the ground floor. It takes approximately 10 minutes to walk from the diabetes clinic to the dietetics department, which is situated on the 6th floor on the other side of the building that the diabetes clinic is at.

The lack of space was also seen as a barrier by healthcare professionals from different disciplines that restricted them from providing efficient T2DM management and care to their patients. When observing healthcare professionals in one diabetes clinic it was noted that there was a lack of space for nurses when providing education for patients with T2DM. My observations during a consultation session with a patient in a diabetes clinic demonstrate the constraints.

Fieldnote: Observed situation at the general diabetes clinic on 13/7/2020 at 8am

Patient enters in the clinic, greets the diabetologist while ignoring the nurse. The nurse is occupied with registering patients' details and preparing regular investigation requests. The patient is sitting in front of the diabetologist, while the nurse is situated far from them, inhibiting her from engaging with the patient. The diabetologist then asked the nurse to perform the patient's random blood glucose and take her blood pressure. The nurse stands from her desk and walks towards the patient where the patient presents her finger ready for the prick and her arm extended for the nurse to check her blood pressure. The nurse informs the diabetologist on the patient's readings. Nothing else was said.

Nurses complained about the lack of space to conduct T2DM education sessions for patients. One of the nurses was also a diabetes educator who stated that a separate place was needed to help assess and provide T2DM education for patients visiting the diabetes clinic:

> To do my work, of course I should have a place or desk to give patients education regular follow-ups. – Nurse C4

Pharmacists seem to delegate the responsibility of patient education to nurses due to their lack of facilities. My observations of a pharmacist and views of one of the pharmacists are recorded below and demonstrate this:

Fieldnote: Observed situation at the general pharmacy on 16/7/2020 at 9:13am

Patient walks up to the pharmacist's window after they receive tickets for their turn to collect their prescription. Pharmacist briefly state the use of the medications and hands them over to the patient.

> I don't have a place to sit with the patient, and we have a shortage in staff in the whole hospital. In this case, I am trying my best to do, but I can't teach. – Pharmacist B8

The organisation's structure inhibited healthcare professionals from fully undertaking their role, where the lack of space and facility was commonly reported as a barrier to efficient T2DM management. The healthcare professionals believed that having their own space would improve the way they managed people with T2DM eligible for bariatric surgery.

The following section describes the second subtheme under Theme 1: Barriers to providing efficient T2DM management. This subtheme presents the perceived barriers that healthcare professionals have with other disciplines.

4.4.2 Subtheme 2: Barriers among healthcare professionals

The second subtheme describes the barriers that healthcare professionals experienced relating to other healthcare professionals when managing people with T2DM. These barriers were common between different disciplines and had an impact on service delivery

when managing and caring for patients using bariatric surgery as a treatment option for T2DM. These barriers were: line of hierarchy; role confusion; lack of communication, cooperation, coordination and collaboration; patient information during referrals; and a multidisciplinary team approach.

4.4.2.1 Line of hierarchy among healthcare professionals

As a nurse researcher, I noticed that the healthcare professionals seemed to be divided into two groups: the physicians (including surgeons) who were referred to as doctors by participants, and the applied healthcare professionals who included nurses, dietitians, physiotherapists and pharmacists. Several components were included under this aspect: power, authorisation, trust, knowledge and decision-making. These aspects were seen as barriers among healthcare professionals in different disciplines working in different departments.

Power was the first component in the line of hierarchy that hindered healthcare professionals from providing efficient T2DM care. This power was in the form of having authority over other healthcare professionals when managing patients with T2DM, and the ability to refer patients with T2DM to other departments for T2DM management. Physicians were at the top of the organisation's hierarchical pyramid.

Fieldnote: Hospital managers and hierarchical pyramid:

The hospital administration is composed of two divisions: administrative and healthcare divisions. The healthcare division is divided into physicians and allied healthcare. The head of the healthcare division is a military surgeon who is responsible for the military personnel and civilians working as healthcare professionals. The top-level managers at the hospital have been occupied by military personnel. The middle level managers were a combination of military personnel and civilians. These middle level managers are head of departments and are not necessarily physicians, such as the head of the nursing department who is a military officer with a Master of Nursing. Middle level managers are usually the highest ranking officers in that department, or have the highest qualifications in the case of civilian (non-military) managers.

Different allied healthcare disciplines complained about their work status, reporting their inability to work in their discipline's profession. Dietitians reported that their management of patients who had bariatric surgery was restricted by the physicians from the bariatric department who involved the hospital administration into prohibiting dietitians from managing bariatric patients. Dietitians reported their agreement with the imposed restrictions due to the lack of specialised dietitians in bariatrics:

> We don't see them [bariatric patients]. We actually refuse to see them. A circular was sent to us from the hospital director to not see them … because we don't have any type of training for bariatric patients. – Dietitian B1

Nurses also reported similar experiences where they were restricted from providing any health education without the permission of the physician:

> As a nurse, we are not telling patients about bariatric surgery. We don't have the role. We don't deal with bariatric patients to suggest the surgery. – Nurse C2

> The doctors restrict our authority in giving information and health teaching to patients … each doctor want to have control over his department. – Nurse D5

Trust was the second component in the line of hierarchy that impacted on the management of patients with T2DM. Allied healthcare professionals felt less competent when their patient management was doubted by physicians. Nurses and dietitians reported the lack of trust physicians had shown towards their practice when providing their specific disciplines role to patients with T2DM, stating:

> They (physicians) don't trust the nurse or the nutritionist can do it the way they want it. – Nurse D1

> It could be that some of the departments or some of the doctors or staff members don't want to listen to the other. It's just his opinion. For example, the surgeon doesn't want to listen to the medical doctor, or listen to the X-ray people. – Dietitian B5

Knowledge was the third component found from interviewing healthcare professionals managing people with T2DM. Physicians perceived this aspect as lacking in some healthcare professionals due to their discipline:

> As nurses we are always looked down upon, as if we are less intelligent or have less knowledge … Other professions focus on treatment and others on the information they provide. But we focus on the care, about what the patient goes through, how they feel even if they don't say it, we observe them and know them. – Nurse C3

> We also as nurses graduated from colleges and have degrees and some of us have masters and PhDs. – Nurse D5

> Also sometimes tell the patients that they [physicians] know better than us … they are doctors and they know everything about medicine and health … some departments think they are better than the others. – Pharmacist D3

Some healthcare professionals felt betrayed by physicians who did not value the knowledge or skills of other disciplines, which made other disciplines feel resentment towards physicians when providing management for patients with T2DM:

> So if one of the disciplines the doctor or the nurse or the pharmacist said something wrong, they should discuss it with each other first and to not tell the patient that the pharmacist is wrong and they don't have enough knowledge because this will let the patient not to believe and don't trust the pharmacist. – Pharmacist B8

> Some of the doctors just ignore the dietitian's role in the hospital … Even though I am a small person or small department, it has a big role in the patient's life. – Dietitian B5

Decision-making was the fourth component that was evident from the interviews conducted with healthcare professionals when asked about their management for patients with T2DM and the barriers that interfered with this management. Physicians reported that they were the only discipline who decided how patients were managed and what the best options were for their T2DM management:

> But if I see that this patient is eligible for bariatric surgery, I may offer this for them … because I think there is different types of bariatric surgery so the surgeon will be the one who will decide what kind of surgery can suit the patient. – Physician B6

> The medical doctor can decide if he needs surgery, if he is eligible, he can refer the patient to the surgical department. – Pharmacist B8

> The boss is the bariatric surgeon even if the patient has type 2 diabetes … And for the multidisciplinary team to work, the boss must become a leader, which means he must encourage all the team members to work together in their own speciality for the benefit of the patient … At this moment, I can decide and I have to decide to refer the patient to the surgeon … It's my job. I write a report regarding the case and say that this patient is not reliable. They [patients] have unrealistic reasons to do the surgery, they

> are not fit and not compliant. And we [physicians] will face a problem with them after surgery. – Physician C5

Nurses confirmed that decision-making was the domain of physicians who were the primary discipline with responsibility for deciding on the management plan for patients with T2DM, and that other disciplines just had to follow orders. For example, nurses reported that:

> Mainly the surgeons decide the things and other must follow. – Nurse C3
>
> Doctor will decide the type of bariatric surgery for his patients. – Nurse D1
>
> We only follow doctors' orders. – Nurse D5

Power, trust, knowledge and decision-making were barriers between healthcare professionals when providing T2DM management to patients. These perceived barriers also impacted on the service delivery that patients with T2DM who could have been eligible for bariatric surgery received.

4.4.2.2 Role confusion

Another barrier healthcare professionals reported was role confusion. This confusion included perceived understanding of the role of other disciplines, roles that were added to their discipline and the difficulty of knowing the role of another discipline when providing T2DM management to a patient using bariatric surgery as a treatment option for T2DM.

Understanding the role of other disciplines

The lack of understanding about other disciplines' roles was one of the barriers that healthcare professionals reported when being interviewed on their perceptions of a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. The perceptions that healthcare professionals had of other disciplines were different from the roles performed by these disciplines, resulting in confusion in the way healthcare professionals managed patients with T2DM. For example, physicians reported that nurses provided health education to patients with T2DM. However, this role was

restricted from nursing roles unless they were delegated to them by these physicians, for example:

> A role for the nurses because they spend most of the time with patients, so they can give health education. – Physician D2

> Nurse can give guidance for patients from where to take the medications and arrange appointments. The nurse can give also lifestyle modifications and dietary advice. She can explain about the proper footwear and what kind of shoes that should be avoided. – Physician D4

Role confusion

Other healthcare professionals seemed to diagnose patients with T2DM with depression, which is out of the scope of their discipline. These healthcare professionals viewed depression diagnosis as the role of the psychologist, and acknowledged it was not their role to deal with depression but that of a psychologist. Physiotherapists stated:

> Because when [the] patient is newly diagnosed with diabetes he will be depressed. This issue should be addressed by the psychologist. So psychology aspect is important. – Physiotherapist B4

> I believe all healthcare members are giving psychological support when needed along with the physical treatment. – Physiotherapist B2

Psychiatrists were also perceived as necessary in the management of patients with T2DM. For example, one pharmacist reported:

> Some of these patients can go through anxiety or depression. So the role of the psychiatrist would be fundamental in this situation, but not all the cases. It depends on the patient. – Pharmacist C1

Additional role

Role confusion led to some disciplines taking over the role of other disciplines resulting in confusion about what care/advice/education other disciplines had already provided for patients with T2DM eligible for bariatric surgery. For example, a nurse reported that physicians took over other disciplines' roles by undertaking care/advice/ education themselves:

> The doctors are doing everything. – Nurse D1

Physicians also implied that due to the lack of psychologists and psychiatrist support, they took on their roles:

> But if any bariatric physician doesn't have a psychologist or psychiatrist, they must do it themself. – Physician D5

One physician reported that they would manage patients with T2DM instead of referring them to a diabetologist unless these patients were newly diagnosed or had T1DM. This physician reported:

> Actually in our hospital, we are all dealing with diabetic patients … if he is not newly diagnosed, then we also see him in our clinic. – Physician D2

> Only in one condition, if he is newly diagnosed type 1 diabetic. This is the only time we refer them [patients] to a diabetologist. – Physician D2

Difficulty in knowing the role of other disciplines

Being unsure of other disciplines' roles also interfered in the management that healthcare professionals provided patients with T2DM eligible for bariatric surgery, for example:

> In my opinion and from my experience in Kuwait, I don't see a clear role for them [pharmacists and physiotherapists] to join the multidisciplinary team that looking after obese patients. – Nurse D1

> Psychologist? I don't know how he can help. – Pharmacist D3

> Before the surgery, I don't think so [physiotherapists' role], I don't know. – Pharmacist B8

> I'm not sure what the psychiatrist can do about that. But maybe those who are afraid or need convincing to do the surgery. But other than that, not really. – Pharmacist C1

> I just hear from you about the physiotherapy. I don't know what's his role before, but I'm sure his role after the surgery is to maybe to maintain his movements, maintain his lungs after the surgery and that's it. I'm not aware of the physiotherapist's role. – Physician B6

The perceived understanding that healthcare professionals have of other disciplines, their taking up of other disciplines' roles, and their uncertainty of other disciplines roles was evident across all the disciplines.

4.4.2.3 Lack of communication, collaboration, cooperation and coordination

Communication, collaboration, cooperation and coordination between healthcare professionals when providing T2DM management to their patients were perceived as barriers. The healthcare professionals from different disciplines reported that the lack of communication, collaboration, cooperation and coordination led to inefficient T2DM management for people who might be eligible for bariatric surgery as a treatment option for T2DM. Each is discussed in detail below.

First, a lack of communication between healthcare professionals was reported. The healthcare professionals all expressed the frustration they felt when they were unable to contact other disciplines during consultations. The healthcare professionals also reported that each discipline preferred dealing and working with healthcare professionals within the same department. Excerpts from the interviews demonstrate this aspect:

> Healthcare professionals prefer working in their departments and don't like to communicate with each other. – Pharmacist D3

> The bariatric surgeon will be the last person to see these patients. The blood sugar should be controlled first by other members as closed loop to prevent diabetes complications. I mean all departments should have good communications regarding this patient by a referral system. – Physician D4

Second, a lack of collaboration between disciplines was a common barrier that was reported by healthcare professionals when managing patients with T2DM:

> All is supposed to be on the same team on the same way of thinking and to direct the action of their role or their services to the patient for his own benefit. – Physician B6

> We lack collaboration between departments. Each department have their own roles and wants to work alone. – Nurse C4

Third, was the lack of cooperation between disciplines. The healthcare professionals viewed that the departments did not cooperate with each other when managing and caring for patients with T2DM, for example:

> Doctors should cooperate with each other and support each other. – Physician D2

> When a person is not helpful, uncooperative. For example you let the patient go back to the doctor and the doctor will not see the patient, lack of communication. – Dietitian B3

Finally, the lack of coordination between disciplines was the cause of barriers, with several healthcare professionals reporting a lack of coordination between departments. Despite some departments following a guide, healthcare professionals still found the lack of coordination a barrier, for example:

> There is no coordination between the departments. – Physiotherapist B4

> In our hospital … it's because the administration should establish new ideas and put a team that needs coordination and need some guide. – Nurse C2

In the different outpatient clinics that I observed, the nurse appeared to be the healthcare professional who acted as the intermediary between other disciplines. The nurse was aware of the different disciplines' roles when managing patients with T2DM. A nurse was the first healthcare professional to receive the patients' information and was responsible for arranging the required investigations for newly diagnosed patients with T2DM. However, due to the lack of communication, the role of the nurse was restricted to that of a receptionist, and the link between different disciplines and departments was weakened. Miscommunication, and uncoordinated and uncollaborative management were the result for patients with T2DM. An excerpt from my field note observations illustrate this point.

Fieldnote: Observed situation at the general diabetes clinic on 13/7/2020 at 8am:

In the diabetes clinic, there was minimal to no communication between the physician and nurse except for when the physician asked the nurse about whether the next patient has confirmed their appointment, which was not the nurse's role but a receptionist's. Patient's management plan was not discussed nor their experiences exchanged.

The healthcare professionals were observed as having failed to communicate, collaborate, cooperate and coordinate with other disciplines when providing T2DM management. The healthcare professionals from different disciplines reported one or more of these four barriers when providing care to patients with T2DM.

4.4.2.4 Patient information during referral

The healthcare professionals reported that one of the barriers they experienced when managing patients with T2DM eligible for bariatric surgery was the lack of patient information when receiving referred patients. The lack of sufficient information was reported to impact on the quality of patient care in T2DM and bariatric management by forcing the healthcare professional to spend time seeking patient information instead of proceeding directly to their specific discipline's role in the management of T2DM and bariatric surgery. The healthcare professionals reported that they expected referrals to have at least a brief history of the patient's condition and the current treatment plan, to provide them with insight into the possible management and care they would need to provide the patient. Examples are shown below:

> They can just write the paper that this is the patient, the history of the patients if he has diabetes, how much is his HbA_{1c} and those type of things, the basic information that we need. – Dietitian B5

> We study the file and we ask the nurses or paramedics whether the patient takes his food or not and when he took his medication. We need to know all these information before we go for our treatment because with them we can go ahead with our treatment sessions … we need to hear the progression of patient treatment and what kind of follow-up he needs. We need continuous cap and recap about the case. – Physiotherapist B3

Other healthcare professionals also reported the lack of knowledge that patients had about their medical condition. These healthcare professionals reported that patients referred to their clinic for consultation were shocked when hearing they had T2DM. This resulted in the healthcare professionals having to focus their treatment plan from a very basic beginning to help the patient understand their T2DM before providing any other type of education. For example:

> We can see from the blood test that their blood glucose was so high and when we ask the patient do you have diabetes they say no … Because a lot of patients even when their blood tests are there with the doctors, they will not tell them what's wrong, they will not know what they are suffering from … some of the patients will come and the

> blood test is from two to three years [ago] and the patient had a problem with their kidneys from two years ago but none of the doctors told them. – Dietitian B5

> We are here for the patients whatever individual or team approach will be a benefit for the patients. You know the patients lack information about their conditions, we should provide this information to them. – Physiotherapist B4

Different healthcare professionals found that insufficient information during patients' referral between departments was a barrier to providing T2DM management to patients who might be eligible for bariatric surgery. However, the lack of sufficient information was not reported by nurse participants triaging patients eligible for bariatric surgery as an option for T2DM management.

4.4.2.5 Multidisciplinary team approach

The healthcare professionals reported several barriers to a multidisciplinary team approach for patients with T2DM: common understanding of the meaning of a multidisciplinary team and how it might function among healthcare professionals, and who were the perceived key members of a multidisciplinary team.

The healthcare professionals defined a multidisciplinary team as people from different departments in a hospital working together for a patient's benefit. An example from one discipline is as follows:

> In my understanding, I don't know if this correct or not. A multidisciplinary team includes different people from different medical departments like doctors, nurses, physiotherapists psychologists and people from different faculties who can work together for particular patient, problem or situation. – Nurse C3

Although healthcare professionals from different disciplines had the same understanding of a multidisciplinary team, one healthcare professional was very clear in reporting that hospital departments worked separately:

> We work as separate departments but of course some patients are seen by two or three departments. – Physician D4

Working independently was believed to be the management approach used by healthcare professionals working in different departments managing people with T2DM eligible for bariatric surgery. However, healthcare professionals agreed that a physician needs to be part of a multidisciplinary team for T2DM. Three healthcare disciplines – nurses, pharmacists and psychologists – were commonly omitted from being mentioned as being part of the multidisciplinary team. Notably, interviewees always included their own profession as a key member alongside the physician, for example:

> Medical doctors with the dietitian. – Dietitian B5

> The surgeon who will do the bariatric surgery, then diabetologist, physiotherapist. – Physiotherapist B3

The healthcare professionals from different disciplines always included their discipline in the multidisciplinary team. However, one discipline, nursing, did not mention that they should be included in a multidisciplinary team:

> Diabetologist, dietitian, pharmacist, psychologist as in counselling and medical doctor. – Nurse C2

> Bariatric surgeon, physician, dietitian and psychologist. – Nurse C4

> Bariatric surgeon, bariatric physician, psychologist, plastic surgeon and medical doctor. – Nurse D1

One of the nurses also reported that in the management of people with T2DM using bariatric surgery as a treatment option, a nurse and dietitian were unnecessary in a multidisciplinary team:

> Nurses and nutritionist, they are not important in this team. – Nurse D1

Although healthcare professionals from different disciplines had different opinions on who should be included as the key members of a multidisciplinary team, they all agreed that physicians were crucial in a multidisciplinary team approach in the management of people with T2DM. Nurses were commonly dismissed by the healthcare professionals, as well as by themselves, as not being important in a multidisciplinary team.

4.5 Summary

This chapter started by providing an overall introduction to the three findings chapters. The theme discussed in this chapter then identified barriers that healthcare professionals from different disciplines faced when providing efficient T2DM management to patients eligible for bariatric surgery. These barriers were divided into two sections. These sections were either barriers that were imposed by the organisation, or barriers that were created by healthcare professionals themselves.

Barriers to the provision of efficient T2DM management when using bariatric surgery as a treatment option imposed by the organisation were the absence of guidelines and protocols, limited weight-loss options, shortage of hospital staff, an outdated hospital system, and the impractical structure of the hospital departments. Barriers that were created by the healthcare professionals that interfered in providing efficient T2DM management to patients using bariatric surgery as a treatment option for included power in hierarchical positions, role confusion, lack of communication and collaboration, and discrepancies in the healthcare professional's perception of a multidisciplinary team approach in managing people with T2DM using bariatric surgery as a treatment option. These barriers have impacted on the way healthcare professionals manage patients with T2DM eligible for bariatric surgery. Among the various healthcare professionals included in the management of people using bariatric surgery as a treatment option for T2DM, nurses were the only discipline that did not have a clearly identified role. Instead, nurses were delegated roles that other healthcare professionals performed, or were given an administrative role, such as filing papers, filling out forms and booking appointments; a role that receptionists and medical records staff usually undertake.

The next chapter presents the findings of the second major theme, which identified the expectations that healthcare professionals had of a multidisciplinary team when managing

people using bariatric surgery as a treatment option for T2DM. Following this chapter, Chapter 6 presents the findings of the final major theme. This will be followed by the discussion chapter (Chapter 7), and finally the thesis will present the implications and recommendations, identify the strengths and limitations, present new knowledge discovered in this research project and end with the conclusion of this thesis in Chapter 8 - Conclusion.

Chapter 5: Theme 2 – Expectations of a multidisciplinary team approach

5.1 Introduction

This chapter presents the second major theme and its associated subthemes of this research project that explored the attitudes, beliefs and perceptions of healthcare professionals about a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. Theme 2 identified the expectations that healthcare professionals had about a multidisciplinary team approach when managing people with T2DM eligible for bariatric surgery (Figure 5.1). This theme was generated from the data collected from interviews with healthcare professionals and observation sessions. The chapter ends with a summary of the theme's findings.

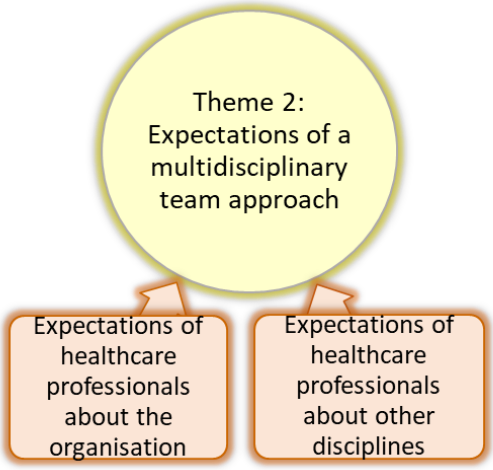

Figure 5.1: Theme 2 and subthemes identified from data analysis

5.2 Theme 2: Expectations of a multidisciplinary team approach

This second major theme describes the expectations that healthcare professionals had of their co-workers from other disciplines when managing patients with T2DM. Two subthemes emerged from this theme: the expectations the healthcare professionals had about the organisation, and the expectations the healthcare professionals had about other disciplines regarding a multidisciplinary team approach for managing people using bariatric

surgery as a treatment option for T2DM. These subthemes are presented in detail in the following sections.

5.2.1 Subtheme 1: Expectations the healthcare professionals had about the organisation

This subtheme presents the expectations healthcare professionals had about their organisation that would enable them to provide multidisciplinary team management for people using bariatric surgery as a treatment option for T2DM. Three aspects emerged from the interviews with healthcare professionals: adequate staffing, the need for a research department and the need for specialised clinics with comprehensive care.

5.2.1.1 Adequate staffing

The healthcare professionals reported that a multidisciplinary team needs to have adequate numbers of staff when managing people using bariatric surgery as a treatment option for T2DM. These healthcare professionals expressed frustration regarding inadequate staffing at the diabetes clinic and expected the organisation to provide more staff at the clinic in order to efficiently manage patients with T2DM eligible for bariatric surgery. The healthcare professionals working in various clinics discussed the necessity of having adequate staffing, highlighting the impact that insufficient staffing had on enabling them to provide efficient management to patients with T2DM seeking different options to improve their diabetes. For example:

> We need more diabetologists and more doctors … I cannot check the blood investigations' results and adjust the doses of their medicines. Because the large number of patients and shortage in doctors, we are facing this problem in our department. – Physician D2

> We have a shortage of doctors and other health professionals. – Nurse D1

One of my fieldnotes also mentioned a lack of staff.

Fieldnote: Nurses working in multiple clinics

The nurse in the diabetes clinic is also the nurse in the medical clinic. A shortage of nurses was also seen at the surgical and bariatrics departments where nurses would be shifted between these clinics to compensate for the limited number of nursing staff.

According to the participants, adequate numbers of staff are expected in the organisation to improve the quality of the T2DM service provided to patients using bariatric surgery as a treatment option for their T2DM. The healthcare professionals from various departments involved in T2DM management including diabetes, bariatrics, dietetics, pharmacy and physiotherapy clinics stated that the limited number of staff impacted on their management for patients seeking bariatric surgery as a treatment option for T2DM.

5.2.1.2 The need for a research department

Another common aspect shared between physicians, nurses, dietitians and physiotherapists was the need to use evidence-based practice. The participants stated that the organisation they worked in was often compared to another reputable diabetes centre in Kuwait that was known to provide specialised diabetes management by having a multidisciplinary team approach to people with diabetes and their families. This centre also has its own diabetes research department and is active in research for T1DM and T2DM.

One physiotherapist stated that this diabetes centre in Kuwait was the organisation setting the benchmark for other diabetes clinics to follow. This organisation was also known to have a research department that all hospitals in Kuwait were expected to have. For example, this physiotherapist reported:

> They [diabetes centre in Kuwait] also conduct research which is supposed to be available in every hospital and institute. But unfortunately, it is not here in our hospital. – Physiotherapist B2

Healthcare professionals from different disciplines reported that the lack of a specific research department at the hospital impacted on providing efficient T2DM management

that included bariatric surgery as a treatment option, and prevented the initiation of a multidisciplinary team approach.

One physician suggested that the organisation's managers might be the reason for the resistance to a multidisciplinary team for T2DM management due to their lack of awareness of its necessity in managing people using bariatric surgery as a treatment option for T2DM. Conducting research was suggested by this physician as a method to highlight the importance of a multidisciplinary team in the management of people with T2DM eligible for bariatric surgery as a treatment option. This physician reported:

> It's in level of the organisation. I mean, the Ministry of Health have to know the importance of the multidisciplinary team for the management of patients … I don't know, they are not aware of the benefit of that. Or there are no studies in Kuwait that shows the benefit of that. – Physician B6

Another of my field notes supports this view.

Fieldnote: Staff development unit as a research unit

The hospital has a staff development unit that is responsible for orienting new staff and providing continuing education updates for staff in their respected areas. Although this unit has access to the internet and online databases, nurses stated they were not knowledgeable on how to conduct research or use these databases. The hospital also does not have an ethics committee to evaluate research proposals.

The healthcare professionals stated that a research department might be necessary to convince organisational managers of the necessity to initiate a multidisciplinary team that could help in the improvement of T2DM and bariatric management for patients who seek these services. The healthcare professionals also believed that conducting research in the hospital around the management of T2DM and including bariatric surgery as a treatment option could aid in highlighting the benefits that come with a multidisciplinary team approach for this population.

5.2.1.3 The need for specialised clinics with comprehensive care

One of the expectations the healthcare professionals had of the organisation was to have more specialised clinics and staff. The healthcare professionals thought that the additional clinics would allow them to manage patients comprehensively as a team. Additional clinics with a multidisciplinary team approach could allocate adequate time for each of the disciplines with patients who might be eligible for bariatric surgery as a treatment option for T2DM. The shortage of staff led the healthcare professionals to rush their management and provide limited time and information regarding T2DM management per patient to discuss their eligibility for bariatric surgery. For example:

> If we add more diabetic clinics it will be very good … I believe we need only clinic for diabetic patients so we can provide better care and see them more frequently. – Physician D2

Nurses had limited expectations from the organisation, and their discussion was mostly about the shortage of staff rather than improving their role as a discipline imbedded in patient care. My observations on the nurses' roles in different departments are described below.

Fieldnote: Observed situation at the diabetes clinic on 9/7/2020 at 9 am

The nurse is in charge of the patient registry book and handles patients' appointments and follow-ups. Patients are usually seen every three months along with updated blood investigations. However, this has changed to every six to eight months due to the large number of patients attending the diabetes clinic.

Observed situation at the medical clinic on 10/7/2020 at 10:15 am

The nurse registers the patients' details and schedules their follow-up appointments. The doctor is accepting to see patients with T2DM as long as they were previously diagnosed and treated by the diabetologist. The doctor also checks for any changes in the blood investigations and repeats the investigation and medication for the patient to be seen in six months by the diabetologist. Patients were told to continue with the same doses until their next appointment.

Fieldnote: Medical, diabetes, surgical and bariatric clinics

Receptionists were available in every outpatient department. However, their role seemed to be calling patients for their turn. Registers and appointment books and scheduling were not carried out by them because nurses claimed that receptionists often mixed patient files or misplaced the schedules.

Nurses were general nurses, not specialised in bariatrics or diabetes, and were busy in the roles that they were delegated instead of providing nursing care to patients with T2DM and collaborating with other disciplines in providing efficient management.

Patient education was one of the expectations that disciplines had about one another in order to provide comprehensive patient care. However, I did not observe this in these departments. Each department seemed to have their own agenda, which was not transparent to other departments.

The same diabetes centre in Kuwait was presented again as an example of an organisation that provided comprehensive T2DM management and care to patients with T2DM:

> In that centre [diabetes centre in Kuwait] patients are having a comprehensive care and this population has benefited from that centre, but here it is the one [specialised healthcare professionals in diabetes]. No other centre to my knowledge is doing the same. They [healthcare professionals in the diabetes centre] are able to give proper patient education and are also spreading awareness because this is lacking in Kuwait … But unfortunately it is not here in our hospital. – Physiotherapist B2

The diabetes-specific management that was conducted by the healthcare professionals who specialised in diabetes was the type of management that the healthcare professionals at the hospital expected in their hospital. Bariatric surgery as a treatment option for T2DM was not specifically mentioned. However, bariatric surgery was implied as one of the treatments included for patients with T2DM.

This subtheme presented the expectations that the healthcare professionals had of other disciplines towards a multidisciplinary team approach when managing patients using

bariatric surgery as a treatment option for T2DM. The lack of adequate specialised staff in diabetes and bariatric surgery prohibited healthcare professionals from providing comprehensive management and care to patients with T2DM eligible for bariatric surgery. The establishment of a research department was also reported to be one of the expectations that healthcare professionals had of the organisation in order to provide efficient management to these patients.

The following section presents the second subtheme for Theme 2 – expectations of healthcare professionals about a multidisciplinary team approach when providing T2DM management.

5.2.2 Subtheme 2: Expectations the healthcare professionals had of other disciplines

The second subtheme presented here describes the expectation that the healthcare professionals had towards other healthcare professionals in a multidisciplinary team approach when managing patients with T2DM eligible for bariatric surgery. This subtheme comprises the aspects of patient education, the availability of healthcare professionals, assessing and preparing patients, and having qualified teams.

5.2.2.1 Patient education

Patient education was a common aspect across all the healthcare professionals when asked about their expectations of other disciplines when it came to the information delivered to patients regarding self-management of their T2DM or information about bariatric surgery as a treatment option. However, there were different perceptions reported by different healthcare professionals. For example, one healthcare professional stated that no patient education was given to patients with T2DM:

> I feel there is a lack of proper medical education source. Every treatment plan should have a medical and health education. – Physiotherapist B4

In contrast, other healthcare professionals from differing disciplines reported that patient education for patients with T2DM eligible for bariatric surgery was routinely given by physicians. The excerpts below highlight this:

> The doctors are discussing this with patients that are coming with obesity … doctors are the ones to speak about this [patient education]. – Nurse C2

> The bariatric physician is the one who will see the patient in the clinic and give all the instructions. – Nurse C3

Physiotherapy participants reported that patient education would be best provided by a single individual, such as the physician, or a social worker , for example:

> This should be done by the GP. – Physiotherapist B3

> For giving patient education there should be social workers in the hospital. – Physiotherapist B4

Nurses also expressed their view about the most appropriate discipline to provide education to patients:

> As nurses, we are responsible to deliver health education. – Nurse D1

Most of the healthcare professionals reported that providing education to patients using bariatric surgery as a treatment option for T2DM was a team effort, where every discipline provided patients with specific education within the scope of their discipline. Physicians stated that:

> The proper education should be given at all levels, starting from nurses, pharmacists, doctors and dietitians. Everyone has important role in the patient's education. – Physician D4

> About 20% of the patients, especially obese patients discuss with me if they will benefit from this [bariatric] surgery … But everyone is actually pitching in and trying to get that role for giving education for the patient … it's not just the nurses that are giving health education … So, it's everybody's job to educate the patient. – Physician D2

Other disciplines also voiced the same sentiments:

> The education is divided, it depends on how long the patient will stay with you. Each department should give their speciality education to the patient. The physiotherapists have and the nurses and the dietitians and doctors too. – Nurse C3

> I think all the team members should [give patient education]. – Pharmacist C1

The nurses believed that patient education was part of their responsibility, not just a delegated role, and they doubted the effectiveness of patient education being delivered by other healthcare professionals such as physicians. The excerpts below highlight these views:

> The nurse can give health education. – Nurse D5

> The surgeons and bariatric physicians [give patient education] but I don't know if this is the right way to do it or not. – Nurse C3

The healthcare professionals also expressed their frustration when reporting the source of T2DM education some of the patients with T2DM received from non-qualified or non-reputable sources:

> For the patient it's a problem because in our community that people just listen to their friends … for anything. For medical advice and even for types of medication. They go to the gatherings, so they go and spread their medication between each other and then he comes to my clinic regarding the diets suggested by their friends. I was surprised from information, it's all fake. And when I ask them where their friends got the information, they answer I don't know. This is what we suffer from. They listen to outside information more than from the medical staff. I just don't know why. – Dietitian B5

> The patients here in Kuwait, they have social support that help them to cope with their health issue. They usually discuss their health issues with relatives and friends. Here in Kuwait, everyone is a doctor … You know everyone has an internet and they think that it is enough to give them good and correct information. – Nurse D1

> They [patients with T2DM] sometimes come and tell me to just refer them to the surgeon because they [patients] know everything and they googled everything and heard everything from their friends or relatives and here is when my other personality comes out. – Physician C5

For patients with T2DM who might be eligible for bariatric surgery, patient education was expected to be delivered effectively by healthcare professionals. However, the primary source of education was relatives, friends and the internet, which made it difficult for these

healthcare professionals to overcome the inaccurate information that patients had already accepted as truth from these dubious sources. Although patient education was provided by physicians, the nurses believed that patient education was one of their roles, and doubted the success of patient education that was delivered by the physicians.

5.2.2.2 Availability of healthcare professionals

An expectation among healthcare professionals of their co-workers was that they should be available when required. However, some disciplines are not physically available inside the hospital grounds during working hours, or those who could have been involved in the care of patients with T2DM eligible for bariatric surgery are not aware of specialised disciplines in diabetes and bariatrics. The healthcare professionals expressed frustration that some of these healthcare professionals were not reachable by telephone, which affected the treatment and care of their patients. For example:

> Our doctors are not available daily. – Nurse C2
>
> Sometimes patients have uncontrolled BP [blood pressure] and we need to call the bariatric surgeon who is not in hospital most of time. – Nurse C3
>
> All doctors must be available for the care of patients. – Physician D2

One of the healthcare workers expressed their disappointment about their position and role not being known to exist by other healthcare professional where they work, stating:

> Most of the other health professionals in the hospital don't even know that there is a diabetes educator, so they don't refer the patient to me. – Nurse C4

Another common issue identified by the healthcare professionals was the absence of staff who specialised in diabetes. For example:

> We need to be an educator that needs a certificate. No one has a certificate. – Pharmacist C1
>
> We don't have any diabetes nurse or dietitian who is specialised in this area. – Physiotherapist B2

> I don't think we have those specialised people in diabetes in this hospital. – Pharmacist D3

Overall, the healthcare professionals reported that this aspect of availability of healthcare professionals was necessary for the multidisciplinary team management of people using bariatric surgery as a treatment option for T2DM to be carried out efficiently. Physicians are expected to be present and contactable by other healthcare professionals when required to provide management to patients using bariatric surgery as a treatment option for T2DM. This aspect also demonstrates the frustration that nurses and diabetes educators felt when other disciplines were unaware of their role in a multidisciplinary team when managing patients with T2DM eligible for bariatric surgery.

5.2.2.3 Assessing and preparing patients

Another expectation that healthcare professionals expressed about other disciplines included in the care of T2DM patients was that comprehensive, appropriate assessment and preparation of patients with T2DM who used bariatric surgery as a treatment option should occur. These healthcare professionals expressed that they were not able to provide comprehensive assessments, which impacted on the management plan for patients with T2DM who were eligible for bariatric surgery. This inefficiency in service delivery could lead to the progression of this chronic condition and its complications. Some examples from the interviews are presented below.

> Everybody will be thinking of their role and they are going to make this patient stand up again. But if in the beginning, they didn't know the patient and what's wrong with them, then it's a disaster. – Dietitian B3

> Bariatric patients should properly prepare before surgery and should be given the right information and expectations for bariatric surgeries … to manage people with depression and other psychological problems before going into surgery. – Nurse C3

> At least for some patients that we should follow them and manage them and assess them properly from all the aspects; the medical, surgical, pharmacy, psychology and sports points of view. – Physician C5

Different disciplines argued that each discipline that should be included in a multidisciplinary team should be expected to carry out their role when receiving patients with T2DM who might be eligible for bariatric surgery. This included the assessment, diagnosis, treatment plan and patient education.

5.2.2.4 Qualified team

An expectation that healthcare professionals had of other healthcare professionals who should be included in a multidisciplinary team to manage patients with T2DM eligible for bariatric surgery was that they needed to be qualified in providing reliable information to these patients. The healthcare professionals were expected to be qualified as diabetes educators, or to be specialised in bariatrics when managing and caring for patients eligible for bariatric surgery, regardless of the patient having T2DM or not. Excerpts demonstrating this are below:

> I prefer all the members of a multidisciplinary team in managing people with diabetes including bariatric surgery should be a diabetes educator. Because even after surgery, the patient will come for follow-up so everyone should know about the patient and how to manage the patient in their specialities. – Pharmacist C1

> To me the MDT [multidisciplinary team] should include high qualifications, the proper specialist in any certain field we are talking about. For example, let's talk about the bariatric team. I would say that I have a highly qualified bariatric physician and qualified bariatric surgeon, highly qualified registered dietitian, registered bariatric nurse not a general nurse, registered psychologist or psychiatrist. – Physician C5

Despite the availability of specialised healthcare professionals in T2DM and bariatric surgery, these disciplines were very limited and not recognised among their colleagues. However, several disciplines reported the necessity of these specialised healthcare professionals in initiating a multidisciplinary team.

5.3 Summary

The expectations of healthcare professionals about a multidisciplinary team approach were found to represent two aspects: their expectations of the organisation and their

expectations of other disciplines when managing people using bariatric surgery as a treatment option. This second major theme found that healthcare professionals from different disciplines shared common expectations of the organisation, such as the ability to conduct research and having enough specialised staff. These healthcare professionals also shared common expectations of their co-workers in other disciplines, such as accurate patient diagnosis to be able to provide them with comprehensive patient education by healthcare professionals specialised in T2DM and bariatric surgery.

The next chapter, Chapter 6, presents the third major theme. This final theme explains the advantages and disadvantages that healthcare professionals perceived about a multidisciplinary team approach in the management of people using bariatric surgery as a treatment option for T2DM presents. Following Chapter 6 is Chapter 7 which presents the discussion of the findings. Chapter 8 presents the implications, and recommendations, the strengths and limitations that are associated with this research project, new knowledge discovered from this research project, and ends with the conclusions of this thesis.

Chapter 6: Theme 3 – The launch of a multidisciplinary team and conclusion to findings chapters

6.1 Introduction

This chapter presents the third theme of this research project that explored the attitudes, beliefs, and perceptions of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. Theme 3 explored the launch of a multidisciplinary team, and identified the perceived advantages and disadvantages that healthcare professionals saw regarding a multidisciplinary team approach when managing people using bariatric surgery as a treatment option for T2DM (Figure 6.1). The interviews and observation sessions of the healthcare professionals who manage patients with T2DM identified the aspects included in this theme. This chapter ends with a summary of the third major theme, and the conclusion of the findings from all three major themes.

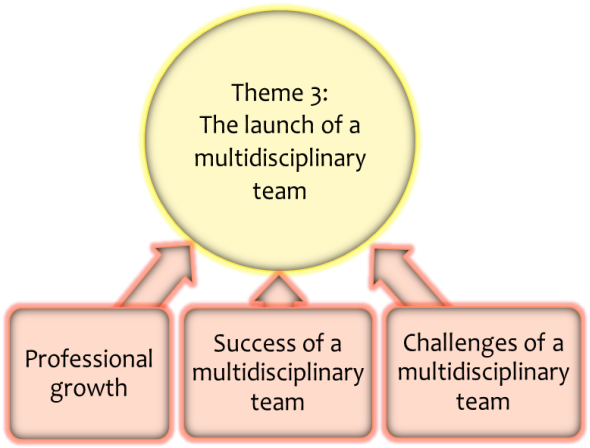

Figure 6.1: Theme 3 and subthemes identified from data analysis

6.2 Theme 3: The launch of a multidisciplinary team

This third major theme describes how the launch of a multidisciplinary team could affect healthcare professionals in the way they manage people with T2DM eligible for bariatric

surgery. Three subthemes emerged: professional growth, the success of a multidisciplinary team and the challenges facing a multidisciplinary team. These subthemes are presented in detail in the following sections.

6.2.1 Subtheme 1: Professional growth

The first subtheme describes the professional growth healthcare professionals anticipated with the launch of a multidisciplinary team for people with T2DM using bariatric surgery as a treatment option. The three aspects that were found to represent this subtheme were job satisfaction, shared knowledge and focused role.

6.2.1.1 Job satisfaction

The job satisfaction of healthcare professionals could be improved by launching a multidisciplinary team. The healthcare professionals reported that the availability of a multidisciplinary team for patients with T2DM who might be eligible for bariatric surgery could provide each discipline with a clearer outline of their role. Nurses reported that knowing their role as part of a multidisciplinary team would satisfy their professional value when managing patients with T2DM. For example, one nurse stated:

> Not only one person controls it. You got also job satisfaction and it is clear and easy to follow. – Nurse C3

Another healthcare professional, a dietitian, believed they already worked in a multidisciplinary team and expressed their satisfaction and happiness in working at the hospital in this role of working together with others. They also mentioned that being acknowledged as a dietitian allowed them to attend to the patient's needs in the safest way, stating:

> I am very satisfied that all the doctors that I'm dealing with, when they are seeing the patient they are seeing what's wrong. They will write the medication and they will ask for a dietitian's opinion because they want to be on the safe side, to have the patient safe is the most important thing for them. – Dietitian B5

Job satisfaction was perceived as one of the aspects of professional growth that would occur upon the launch of a multidisciplinary team. This aspect was perceived as an achievement for healthcare professionals interested in joining this team. This team of various disciplines would be in charge of managing people with T2DM using bariatric surgery as a treatment option.

6.2.1.2 Shared knowledge

Some healthcare professionals reported that having a multidisciplinary team approach would allow them to broaden their knowledge about the different roles of other disciplines., Some healthcare professionals also viewed the ability to be able to exchange experiences could be of benefit when managing patients with T2DM. Examples include:

> I think it is better to work in a multidisciplinary team because we can share responsibilities and we can gain better experience. – Nurse C3

> Joining an MDT [multidisciplinary team] will increase my experience and I will have knowledge from different departments. In this case I can share my knowledge with patients and educate them. – Nurse D5

> When we work together … also, we can share our knowledge with each other. I can ask for help from another member, I can tell my opinions. – Physiotherapist B2

Shared knowledge was the second aspect of the professional growth subtheme. The healthcare professionals perceived that this aspect would be achieved by launching a multidisciplinary team.

6.2.1.3 Focused role

Having a focused role was viewed as being a benefit to be gained by the initiation of a multidisciplinary team. The healthcare professionals believed that a focused role for every member of a multidisciplinary team could ensure that the patient could be holistically cared for. In turn, the healthcare professionals viewed that this might lead to achieving better

health outcomes. Additionally, the workload could be divided and the chance of making medical errors avoided. The excerpts below demonstrate these findings:

> A diabetologist or endocrinologist or any other medical specialist to help reach the proper diagnosis and proper management and control. That means we have to work as a multidisciplinary team prior to surgery in order to reach the best results after surgery. – Physician C5

> I think it's a team to complete each other … the nurse can focus on health teaching. The dietitian … they can modify the eating habit and lifestyle of patients so the diabetic medication works better. – Nurse D5

> The advantage could be … like we have here the diabetologist is doing all the jobs for the patients and there are chances for mistakes. But if we have this team, the job will be divided. – Nurse C4

Nurses were aware of the management currently provided to patients with T2DM eligible for bariatric as a treatment option and reported on the burden carried by other disciplines, for example, physicians who undertook multiple roles in time-limited appointments. The nurses viewed that medical errors could occur. My field notes below demonstrate the different roles that physicians carried out during consultations with their patients, such as reviewing and explaining patients' blood investigations, explaining medication administration, and providing diabetes education, which could have been provided by the pharmacists and nurses.

Fieldnote: Observed situation at the general diabetes clinic on 13/7/2020 @ 8am

The physician checked the blood investigations of the patient and provided the patient with a brief explanation of what the results were. Also, the physician explained the medications they prescribed to the patient. The physician informed the patient that they should check their blood glucose level when they feel nauseated, dizzy or unusual before taking anything sugary to raise their blood glucose levels. They also informed the patient that any reading taken first thing in the morning that was below 4 mmol/l is considered hypoglycaemic and above 6 mmol/l is hyperglycaemic.

The three aspects included in this subtheme were job satisfaction, shared knowledge and having a focused role. These aspects were found to be essential by healthcare professionals for the initiation of a multidisciplinary team management approach, where

they could provide comprehensive T2DM management for patients choosing bariatric surgery as a treatment option. Being recognised among healthcare professionals from different disciplines was valued as belonging to a discipline that could contribute to the management of people using bariatric surgery as a treatment option for T2DM and improve service delivery.

The following section describes the second subtheme under Theme 3: The success of a multidisciplinary team.

6.2.2 Subtheme 2: Success of a multidisciplinary team

This subtheme presents how the success of a multidisciplinary team affects healthcare professionals when managing patients using bariatric surgery as a treatment option for T2DM. There were several aspects included in this subtheme: focused management plan, avoidance of duplicate orders, reduction in hospital visits, delay in T2DM complications, follow-up care, lengthy visits and the cost of a multidisciplinary team.

6.2.2.1 Focused management plan

Management of people with T2DM eligible for bariatric surgery requires a focused management plan if a multidisciplinary team is to be successful. The preparation of such a plan was viewed as a necessary baseline for consistency in management of patients with T2DM and would ensure that all disciplines involved in the care of the patient were included. For example:

> There will be even, consistent, and controlled treatment plan. – Physiotherapist B4

It was viewed that a multidisciplinary team approach could provide a treatment plan where the patient's disease progression could be followed up at regular multidisciplinary meetings where the strategies for preventing, addressing and delaying T2DM complications and relapses associated with poor post-bariatric surgery management could

be discussed. For example, healthcare professionals from various disciplines mentioned having group discussions about patient management:

> The quality of care will improve if we have continuous meetings and case discussions. – Physiotherapist B3

> They can discuss the case together and be on the same page and the patients will not be confused with what is happening to them. And the doctors should follow one plan. – Nurse C4

Further, the healthcare professionals believed that a focused plan would save the patient time by keeping them involved in their treatments and prioritising T2DM treatment options. For example:

> This will be more beneficial for the patients. Because instead of the patients guessing where to go and who to see, they can just see the team. – Pharmacist C1

A focused management plan was believed to be a key aspect in the success of a multidisciplinary team that manages people using bariatric surgery as a treatment option for T2DM.

6.2.2.2 Avoidance of duplicate orders

Avoiding duplication of a physician's orders was a matter of concern reported by healthcare professionals when managing patients undergoing bariatric surgery as a management option for T2DM. Most of the investigation requests, such as blood investigations and X-rays, were requested by physicians. Due to poor communication between departments and the preference of each department to work separately, the potential for duplicate investigation requests was high. Nurses were often the healthcare professionals to implement these orders. The nurses believed that effective communication and collaboration within a multidisciplinary approach could prevent physicians from different departments requesting similar, or repeating the same, orders. The impact of duplicate orders were reported as resulting in confusion for the patients, for example:

> Also to avoid dual orders from different departments which can confuse the patient. – Nurse D5

One of my fieldnotes also supports this duplication as a cause of confusion.

Fieldnote: Patient's blood investigations and examinations requests at the medical clinic

The hospital used a paper-based format and blood test such as blood chemistry, or chest X-rays could have been requested twice and samples obtained twice. The following conversation occurred between a nurse and patient.

Nurse: Were these results seen by other departments or disciplines and were there any tests requested by them?

Patient: I don't remember the tests that were requested. I don't know the type of tests that I did. They just took blood from me, and I did an X-ray.

Avoiding duplication of orders were perceived by healthcare disciplines as a positive outcome for a successful multidisciplinary team approach.

6.2.2.3 Reduction in hospital visits

Frequent scheduled appointments were one of the issues that healthcare professionals believed that a multidisciplinary team approach could solve. Patients who were eligible for bariatric surgery as a treatment option for T2DM have multiple appointments with various departments for their planned surgery. However, these appointments were not coordinated due to poor communication between these departments. Having a multidisciplinary team could decrease the number of times these patients needed to visit the hospital for these appointments. The healthcare professionals believed that if the patients could see all the different healthcare professionals involved in their care on the same day, then there would be a reduction in the number of hospital visits, which would be more time efficient for the patient and improve patient satisfaction for their management. For example, nurses reported:

> One advantage is we can save the patient's time and reduce the number of hospital visits. – Nurse D5

> When this team is there [there is] no need for the patient to come again. They can finish all in the same day and it will be easy for them. – Nurse C2

While observing patients at the waiting area of the medical clinic, I noticed the following:

Fieldnote: Patient's waiting area at the medical clinic

Patients were waiting for their turn to see the medical doctor. Appointments were given by date but no specific time was allocated. Appointment spots were allocated according to who came first – first come first serve – so patients were waiting for their turn, which could take all day depending on the number of patients to be seen by the medical doctor on that day.

A reduction in the patients' visits to the hospital was one of the outcomes that would show the success of a multidisciplinary team approach for people attending the diabetes and bariatric clinics.

6.2.2.4 Delay in type 2 diabetes mellitus complications

A delay in the onset of complications from mis-managed patients with T2DM was a common theme among different healthcare disciplines despite their different roles. The healthcare professionals believed that delaying complications in patients with T2DM could be a benefit of using a multidisciplinary team approach. The delay in T2DM complications could lower risk factors associated with T2DM and obesity in patients. For example:

> Prevent diabetes complications for the patients, it will help delay the complication. – Pharmacist C1

> So it's good because we will cover the patient's need from every aspect … If we have a multidisciplinary team we can maybe guarantee, I'm not saying 100% but I can say like if we reach the 30% of those patients they can maintain weight, the lowering of the risk factors … it will be great. – Physician B6

Successful multidisciplinary team management was perceived by healthcare professionals to delay T2DM complications in people eligible for bariatric surgery attending the diabetes clinic.

6.2.2.5 Follow-up care

Follow-up patient care was viewed by healthcare professionals as requiring inclusion when providing patient-centred holistic care for patients with T2DM after having bariatric surgery as a treatment option for their T2DM. Although patients were managed by the surgical department, the healthcare professionals thought that their involvement in a multidisciplinary team of other healthcare professionals outside of the surgical department, such as dietitians and physiotherapists, would allow them to be more aware of the procedure undertaken. This could provide healthcare professionals at the surgical department with better understanding of the needs of patients following the procedure. In turn, the healthcare professionals believed that they could assist the patient with adjusting to their new lifestyle after bariatric surgery. For example:

> Even after the bariatric surgery also, if the patient does not take care of his food and eating habits he will come back to the old weight and same problem. So it is important to follow up with a dietitian, also follow up with a physiotherapist for proper exercise program. The patient needs to follow up with his GP or physician too … the treatment of patients is not solely for one department, each person should have hands in the treatment and improvement of patients. Patients need a regular follow-up by an MDT [multidisciplinary team]. – Physiotherapist B3

Further, a physician also commented on the importance of follow-up care by healthcare professionals such as themselves, stating that patients with T2DM were at risk of weight regain and returning to their diabetes medication post bariatric surgery if the patients were not managed efficiently:

> In the case of bariatric surgery as we see here now, most of the patients who go through bariatric [surgery] there is a percentage of them who fail after that because they were not able to be directed in the good way so they can maintain the weight loss, after the plateau of the weight loss for a long time they get back to their medication, or to their previous weight. – Physician B6

Another outcome that was perceived by healthcare professionals in the successful launch of a multidisciplinary team was the ability to provide patients with T2DM follow-up care post bariatric surgery to prolong weight loss and better manage their T2DM.

6.2.2.6 Lengthy appointments

The health professionals did not only see positive outcomes in having a multidisciplinary team approach, with lengthy appointments for patients using bariatric surgery as a treatment option for T2DM viewed as being a disadvantage. The healthcare professionals thought that patients would need to organise a significant amount of free time from their work or their day to attend the various appointments required for this surgical option. For example, one physician reported that a disadvantage of a multidisciplinary team approach was as follows:

> A lot of appointments, so it will be busy especially with the patient, very busy patients. Especially that this will need for the patient to sit for 30 minutes to 1 hour. This is very difficult for busy patients. – Physician B6

The success of a multidisciplinary team, as perceived by the healthcare professionals from different disciplines in managing patients with T2DM holistically, included them being able to contribute to the management plan of these patients while focusing on the individual needs of each patient. In addition, avoiding duplicated orders, a decrease in hospital visits and follow-up care were aspects viewed as a requirement for a successful multidisciplinary team management approach. By combining these aspects, healthcare professionals believed the benefits of a multidisciplinary team would delay the known complications associated with T2DM. However, lengthy visits and the additional costs of using a multidisciplinary team management approach were the two main concerns mentioned by the healthcare professionals about using a multidisciplinary team approach for managing patients with T2DM eligible for bariatric surgery.

The following section describes the third subtheme identified in Theme 3: the challenges of a multidisciplinary team.

6.2.3 Subtheme 3: Challenges of a multidisciplinary team

The third subtheme describes the perceived effects that could result from an unsuccessful multidisciplinary team management approach for people using bariatric surgery as a treatment option for T2DM. There were three aspects mentioned under this subtheme: conflict in patient management, lack of communication and lack of respect. These aspects are presented in the following sections.

6.2.3.1 Conflict in patient management

Conflict in the opinions of the healthcare professionals from different disciplines on the T2DM management plan for patients eligible for bariatric surgery was viewed as one of the potential outcomes of an unsuccessful multidisciplinary team approach. The healthcare professionals managing people with T2DM using bariatric surgery as a treatment option were from different disciplines where they had a different focus on the care plan, which could result in conflict between these disciplines. Some physicians' excerpts are presented below:

> Conflicts between the different specialisations. – Physician C5

> Everyone comes from different role, different way of management, and maybe it will be challenging to be all on the same page, in the same way of thinking to the patients. – Physician B6

Physicians reported that a conflict in decisions regarding T2DM management that included bariatric surgery as a treatment option could be challenging to healthcare professionals seeking to launch a multidisciplinary team in managing these patients.

6.2.3.2 Lack of communication

A challenge discussed by the healthcare professionals regarding using a multidisciplinary team management approach was the potential for the lack of communication between the different disciplines in a team, which could interfere with the management of patients

seeking bariatric surgery as a treatment option for their T2DM. Disciplines from different departments reported preferring to work independently rather than working with a team. The lack of a computerised system that could serve as the hospital network connecting all the hospitals departments also contributed to poor methods of communication between healthcare professionals. A physiotherapist reported:

> Could be poor communication. Communication is very important for the team to work effectively. – Physiotherapist B4

During my observation of the different departments of the hospital that were involved in T2DM management with the bariatric clinic included in this management, I noticed that healthcare professionals asked patients for their investigation results. Although computers were made available in every department, these computers did not operate as a network and were not linked between the different departments, such as medical records or the laboratory department. Below are my observations.

Fieldnote: Communication between healthcare professionals in different departments

One patient visiting the hospital was shuffling between two clinics, the medical and the diabetes clinic, because results that were needed to be seen by the physician in the medical department were not in the patient's file, which was in the diabetes clinic. Finally the nurse in the medical clinic intervened and called the diabetes clinic asking about this patient's investigation results.

The lack of communication was due to the absence of a computerised system, which negatively impacted on service delivery for T2DM management. Patients or healthcare professionals would follow up the patients' investigations either by phone or by going to the clinic physically.

6.2.3.3 Lack of respect

A lack of respect was a concern voiced by the healthcare professionals who viewed that this lack of respect could affect a team that has members from different disciplines working together for the management of a patient with T2DM. Physicians were considered to be

the healthcare professionals at the top of the hierarchical pyramid in the hospital. The physicians were reported by other disciplines to be disrespectful to healthcare professionals. This negative attitude was viewed as an aspect that could hinder the success of a multidisciplinary team approach when managing patients using bariatric surgery as a treatment option. For example, a nurse reported the following:

> Sometimes some doctors do not respect other health professionals and this will affect the team work. Respect of each other in work environment is very important. – Nurse C3

> They [physicians] interfere with our judgement and advice and also sometimes tell the patients that they know better than us. I don't think that has changed even now. – Pharmacist D3

Conflict in patient management, lack of communication and lack of respect were three specific challenges that healthcare professionals were concerned would impede successful implementation of a multidisciplinary team approach for managing patients using bariatric surgery as a treatment option for T2DM.

6.3 Summary

The launch of a multidisciplinary team was viewed to affect healthcare professionals in three ways: professional growth of healthcare professionals in their respected disciplines, successful multidisciplinary team management and challenges to a multidisciplinary team approach in managing people using bariatric surgery as a treatment option for T2DM.

Job satisfaction, shared knowledge and a focused role were reported by healthcare professionals as aspects they would gain from the launch of a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. The advantages of a multidisciplinary team when successfully operating would provide healthcare professionals with a focused management plan, prevent duplicate investigations and tests, achieve a decrease in the number of patients seen by healthcare professionals in a day, reduce the frequency of patients visiting the hospital, and delay

T2DM complications in patients. However, one of the perceived disadvantages of having a multidisciplinary team approach was that patients would have lengthy consultation sessions. The lack of communication and a lack of respect between healthcare professionals from various disciplines were also perceived as disadvantages and challenges of launching a multidisciplinary team for people with T2DM eligible for bariatric surgery.

6.4 Overall summary of findings chapters

Exploring the perceptions of healthcare professionals towards a multidisciplinary team approach managing people using bariatric surgery as a treatment option for T2DM generated three major themes: barriers to providing efficient T2DM management, expectations of a multidisciplinary team approach and launching a multidisciplinary team.

The first major theme generated two subthemes: barriers that were imposed by the organisation, and barriers among healthcare professionals that interfered with the provision of efficient T2DM management when using bariatric surgery as a treatment option for T2DM. The healthcare professionals reported several aspects that hindered them from delivering efficient T2DM management, such as the absence of guidelines and protocols, limited hospital staff, a dated hospital system, hierarchical power, role confusion and a lack of communication.

The second major theme generated two subthemes: expectations of healthcare professionals about the organisation; and expectations of healthcare professionals about other disciplines towards a multidisciplinary team approach when managing people with T2DM using bariatric surgery as a treatment option. The healthcare professionals reported their expectations of a successful multidisciplinary team included the establishment of a research department, which was currently missing, and comprehensive T2DM and bariatric care.

The third major theme generated three subthemes: professional growth, success of a multidisciplinary team and challenges facing a multidisciplinary team. The healthcare professionals reported the positive outcomes of launching a multidisciplinary team as including a feeling of job satisfaction, a focused management plan and a delay in T2DM complications. These healthcare professionals also viewed that a lack of respect and a lack of communication would be challenges to the implementation of a multidisciplinary team approach.

Among the various disciplines of the healthcare professionals, nurses lack a job description, which means that other disciplines tend to delegate irrelevant roles to them. These roles include scheduling appointments and filling out forms. Despite nurses being the link between the different disciplines and departments, they are still perceived as the discipline with the least to contribute in a multidisciplinary team approach for people with T2DM using bariatric surgery as a treatment option.

The following chapter, Chapter 7, provides the discussion framework utilised to present the discussion on the findings of this research project. Finally, Chapter 8 will present the implications and recommendations, the strengths, the limitations, new knowledge, and end with the conclusion of this thesis.

Chapter 7: Discussion of the Findings

7.1 Introduction

Chapters 4, 5 and 6 reported the findings from exploring healthcare professionals' perceptions towards a multidisciplinary team approach to managing people using bariatric surgery as a treatment option for T2DM. The data were collected before the first lockdown for the COVID19 pandemic, and during the COVID19 pandemic curfews and restrictions in Kuwait.

This chapter discusses the themes that were found from interviewing and observing healthcare professionals in a Kuwaiti Government hospital setting. These findings are compared and discussed against the findings from existing peer-reviewed literature. Braun and Clarke's (2006) six steps for qualitative data analysis were used to report and interpret the findings, as explained in detail in Chapter 3 (see Section 3.6.6.1). The findings chapters revealed three major themes: barriers to efficient T2DM management, expectations of healthcare professionals and the launch of a multidisciplinary team.

The research question was:

What are the attitudes, beliefs, and perceptions of healthcare professionals towards a multidisciplinary team approach for the management of people using bariatric surgery as a treatment option for T2DM?

Three sub-questions were formulated:

1. What is the meaning of 'providing a multidisciplinary team approach' for patients using bariatric surgery as a treatment option for T2DM as perceived by healthcare professionals in Kuwait?
2. What expectations do healthcare professionals in Kuwait have of other disciplines when managing people using bariatric surgery as a treatment option for T2DM?

3. What are the challenges that might face healthcare professionals when working in a multidisciplinary team in the management of people using bariatric surgery as a treatment option for T2DM?

These sub-questions were answered by reporting the attitudes and beliefs of different disciplines of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. The disciplines were physicians, nurses, dietitians, pharmacists and physiotherapists. Physicians included the diabetologist, two medical doctors, a bariatric physician and a surgeon. The following detailed discussion of the findings is guided by a framework specifically developed through integrating Lewin's planned change theory (Lewin, 1947) and the SEIPS model (Carayon et al., 2006). First though, justification for the use of this developed integrated framework is explained.

7.2 Integrated framework

An integrated framework was created using the three stages of Lewin's planned change theory (Lewin, 1947), and the five domains of the SEIPS model (Carayon et al., 2006) to guide the discussion of my research findings. This theory and model are elaborated on in the following sections, which explain why they were most suited for discussing the findings of this research project.

7.2.1 Lewin's planned change theory

Lewin's (1947) planned change theory is based on human relationships and changing human behaviour (Burnes, 2019). Kurt Lewin was a renowned child psychologist, who created force field analysis and combined it with action theory, which became the basis of the three stages of change theory (Shirey, 2013). Lewin's planned change theory is a three-stage theory, consisting of unfreezing, moving and refreezing (Lewin, 1951). These

stages are viewed as assisting in implementing the changes necessary for the development and improvement of an organisation. Levasseur (2001) reports that change needs the cooperation of participates for the change to successfully be implemented. According to Crosby (2020), Lewin's planned change theory is still best practice when it comes to the need for change in management and evaluating progress.

Lewin's (1947) planned change theory has been used as a framework to guide change in healthcare management for the past 20 years. For example, in 2003, Bozak (2003) utilised Lewin's change theory to help nurses transition to a computerised nursing information system for better workflow and information exchange between healthcare professionals working in a professional setting. Also, a literature review was conducted in 2010 on the utilisation of Lewin's planned change theory to structure an organisation in order to improve nursing education (Schriner et al., 2010). Another study in 2014 that included two American healthcare organisations in geriatric care, implemented Lewin's change theory to adopt evidence-based practice to enhance knowledge translation, continuous education and evaluation of these organisations (Manchester et al., 2014). A recent study conducted in Pakistan utilised Lewin's change theory to construct a model that would demonstrate a practical plan for an organisation to improve its service and facilities regarding patient care (Saleem, Sehar, Afzal, Jamil, & Gilani, 2019).

Lewin's (1947) planned change theory showed success in changing the management system of an organisation, and has also been deemed successful in providing organisational improvements. Therefore, it was found to be a suitable framework to guide the discussion of my research findings. According to my aims listed in Chapter 2 (see Section 2.7.3), Lewin's theory would assist in explaining and clarifying the steps that are needed to be followed for a feasible management plan that aims to implement change in management. However, further explanation for the different aspects in a work environment

was needed to clarify the position of the care and management delivered to patients with T2DM using bariatric surgery as a treatment option in a Kuwaiti setting. Lewin's theory provided successful examples in management change, but a second model was needed to present my research findings and illustrate a practical management change plan for potential organisational developments and improvements. Therefore, the SEIPS model (Carayon et al., 2006) was integrated into Lewin's theory to provide a clearer description and understanding of the gaps found in the literature (see Chapter 2, Section 2.7.2), and the aims that this research addressed (see Chapter 2, Section 2.7.3). Current challenges in the organisation were reported by the various disciplines of healthcare professionals, and a suggested approach that could result in the development and improvement of the care and management of diabetes and bariatrics is addressed in this chapter by providing a discussion of my research findings.

7.2.2 The Systems Engineering Initiative for Patient Safety model

Carayon et al. (2006) developed the SEIPS model from the Donabedian structure-process-outcome quality of care model, which focuses on clinical processes and care outcomes. The SEIPS model expanded on the Donabedian model by linking the process and outcomes to the healthcare professionals working in an organisation to help evaluate the healthcare work systems and the quality of service delivered to patients (Carayon et al., 2014). The SEIPS model also consists of three stages: the work system, the process and the outcome (Carayon et al., 2006). The first stage, the work system, includes five domains: person, organisation, environment, task and technology. These domains were created to describe the different factors that impact on patient safety and service delivery of patient care at an organisation. The second stage, the process, describes the care process, maintenance, cleaning and supplies of an organisation. The third stage, the

outcome, describes the link between patient outcomes, and the healthcare professionals and organisational outcomes.

The SEIPS model (Carayon et al., 2006) has been utilised in several studies. For example: Faye et al. (2010) used the SEIPS model to analyse the risk for medication administration and redesigned the medication management process for intensive care nurses. Another study that used the SEIPS model for assessing medication administration in a mental health setting identified improvements in methods of administration and possible distractions that could impact safe medication administration to patients (Steele, Talley, & Frith, 2018). Recently, Musuuza et al. (2020) utilised the SEIPS model as a framework for a systematic review of multidisciplinary teams and their effect on diabetic foot ulcerationa and amputations, with the review identifying that the consistency of a multidisciplinary team in diabetes management reduced major amputations in patients with diabetic foot ulcers. Kwan et al. (2021) also found that using the SEIPS model in planning the management of the COVID-19 pandemic in Hong Kong clarified the different roles that healthcare professionals, administration personnel and the organisation required in order to tackle the pandemic in a comprehensive and organised manner.

Therefore, Lewin's planned change theory (Lewin, 1947) and the SEIPS model (Carayon et al., 2006) have been integrated in a framework to comprehensively guide the discussion of my research project (illustrated in Figure 7.1). I use the five domains in the work system of the SEIPS model to present Stage 1: Unfreezing to discuss the barriers that interfered with efficient T2DM management by the healthcare professionals in the project. The next two stages utilise Lewin's planned change theory, with Stage 2: Moving discussing the nurse-led multidisciplinary team approach, and Stage 3: Refreezing, which is used to discuss the expectations that healthcare professionals have of a multidisciplinary team approach in managing people with T2DM eligible for bariatric surgery as an option.

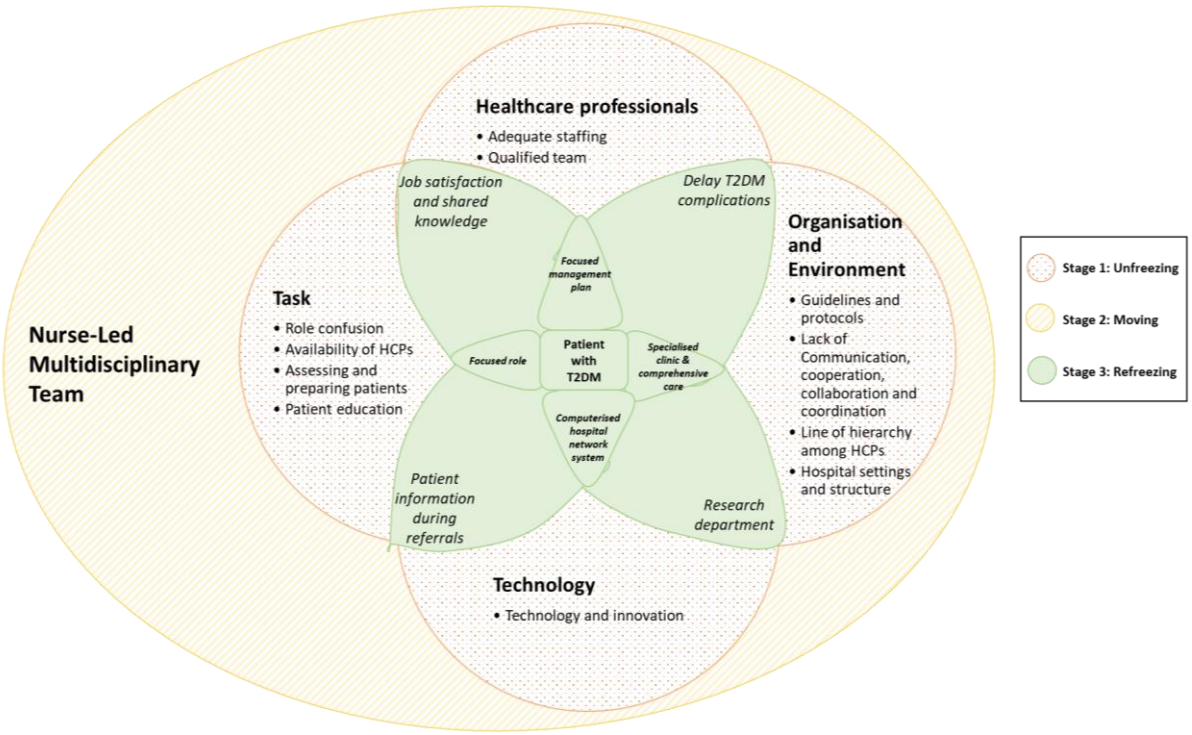

Figure 7.1: The integration of Lewin's Planned Change Theory with the Systems Engineering Initiative Patient Safety Model

Note: HCPs = healthcare professionals; T2DM = type 2 diabetes mellitus

7.3 Implementation of the integrated framework – Stage 1: Unfreezing

This research explored the attitudes, beliefs and perceptions that healthcare professionals had towards a multidisciplinary team managing people using bariatric surgery as a treatment option for T2DM. The first stage of the integrated framework was the unfreezing stage, shown as the dot-shaded part in Figure 7.2, which uses the SEIPS model's work system phase to describe and discuss T2DM management offered to people attending the hospital who were using bariatric surgery as a treatment option. Healthcare professionals' quotes, fieldnotes and observations were presented in the previous findings chapters (Chapters 4, 5 and 6) and were presented under the domains: person (healthcare professionals), organisation and environment, technology and task. This stage provided the description of the barriers and challenges that were found by the healthcare professionals for T2DM management in the hospital setting.

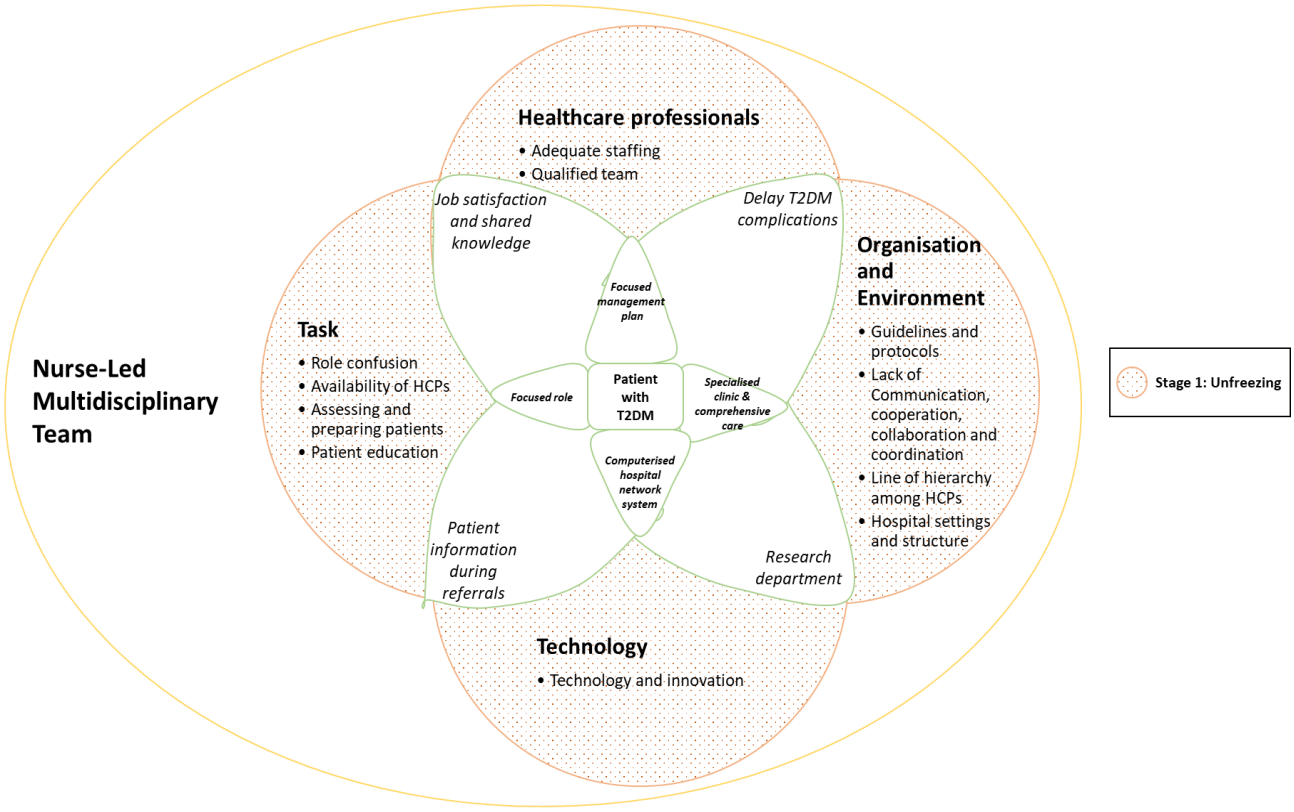

Figure 7.2: Stage 1: Unfreezing

Note: HCPs = healthcare professionals; T2DM = type 2 diabetes mellitus

7.3.1 Person (healthcare professionals)

Carayon et al. (2006) presents the 'person' as the first domain. In my research project the person is represented by the healthcare professionals working with patients using bariatric surgery as a treatment option for T2DM. This domain describes the education, knowledge, skills, physical and psychological characteristics, and motivation and needs that the person would require in a work system (Carayon et al., 2006). My research findings identified two elements included under this domain: adequate staffing and qualified team, discussed in detail in the following sections.

7.3.1.1 Adequate staffing

Adequate staffing was found to be one of the elements included in the person domain in the SEIPS' work system model. In my research project, healthcare professionals expressed that an inadequate number of staff was one of the barriers that prohibited them

from providing T2DM care and management efficiently. This finding is supported by a qualitative research conducted in Oman, where physicians, nurses and pharmacists in a diabetes team reported that the lack of staff in diabetes care caused them to provide inefficient diabetes management to their patients, and that this shortage also resulted in increasing the workload of some healthcare professionals over others (Al-Alawi et al., 2019). Similarly, a qualitative study was conducted in one of Cambodia's healthcare systems to investigate the delivery service for diabetes management (Nang et al., 2019). Their study showed that the shortage of staff was one of the concerns that healthcare professionals faced when providing diabetes care. Both these studies report similar findings to my research regarding the impact that adequate staffing has on the quality of service delivery. Inadequate healthcare professional staffing interferes with the ability of these healthcare professionals to provide efficient T2DM care and management.

Studies conducted in Kuwait show that healthcare professionals involved in diabetes management were effective in improving glycaemic levels. For example, nurse diabetes educators were effective in improving blood glucose levels and diabetes management in patients with T2DM (Alibrahim et al., 2021). A report from a Kuwaiti setting recommends that nutritionists should be included in bariatric care where they were found to contribute to the improvement of surgical outcomes and reduce fat-free mass and malnutrition (Garduno-Diaz, 2016). Also, pharmacists who engaged with patients in the management of T2DM positively affected patients' glycosylated haemoglobin levels (Alabkal, 2021).

My findings reported that there was inadequate staffing at the outpatient clinics, with physicians commonly cited as the main discipline affected by insufficient staff. Physicians reported needing more diabetologists and other specialised physicians to allow for the provision of more efficient T2DM care and management. In addition, while nurses reported that they had sufficient staffing levels, they said there was a lack of physicians in the

hospital who were specialised in diabetes and bariatrics. Therefore, it is recommended that there be adequate specialised healthcare professionals to manage the care provided to people with T2DM and offer these patients options for their T2DM management, which in turn could impact positively on their long-term health outcomes.

7.3.1.2 Qualified team

A qualified team was another element situated under the person domain. My research found that healthcare professionals thought that a team approach was ideal for the care and management that could be provided by healthcare professionals working at the outpatient clinics when it came to managing people with T2DM eligible for bariatric surgery. However, the healthcare professionals reported that they preferred the team members to be specialised in bariatrics and diabetes to provide patients with the most suitable care needed to address their T2DM. In my research, one physician stated that the management of people with T2DM eligible for bariatric surgery was compromised due to the absence of specialised healthcare professionals, such as a nurse, a pharmacist and a dietitian, in both diabetes and bariatrics. Szafran et al. (2019) found that healthcare professionals in Canada were satisfied and confident of their colleagues who were specialised in diabetes when referring them for diabetes management, which in turn improved patient care. One pharmacist in my research suggested that members in a team who manage people with T2DM should include a diabetes educator to help patients manage their T2DM, and provide these patients with the available options for their T2DM. Diabetes educators have been shown to have in-depth knowledge of their patient's conditions, diabetes medication and possible treatment options, which qualifies them as experts and consultants in diabetes (Bockwoldt et al., 2018).

Foster et al. (2017) report that in a USA setting, patients with T2DM were managed by a multidisciplinary team-based approach for obesity treatment. Each of the team members in

this multidisciplinary team offered an intervention plan according to their discipline, which resulted in creating an optimal intervention program for patients with T2DM. Although the team members in Foster and colleagues' study were not specialised in diabetes and obesity, these multidisciplinary team members in their respected disciplines were able to produce an effective program for the management and care of patients who were obese and diagnosed with T2DM.

The literature on the role of nurses in a multidisciplinary team when managing people with T2DM is limited. Most of the literature focuses on a multidisciplinary team approach and often highlights the benefit of this approach on the management of patients with T2DM and obesity despite the use of bariatric surgery as a treatment option, or illustrates the method of multidisciplinary team management for T2DM and obesity (Hamdy et al., 2018; Nimeri et al., 2017; Rebibo et al., 2017; Ritholz et al., 2011; Szafran et al., 2019).

Generally, the literature supports my findings on the benefits of diabetes and bariatric specialist healthcare professionals to efficiently manage people with T2DM. However, the literature suggests that healthcare professionals from different disciplines may collaborate to produce a management plan without the need for being specialised in either diabetes or bariatrics, but who are knowledgeable in managing comorbidities, such as T2DM and obesity. Nevertheless, when providing T2DM care and management by qualified healthcare professionals in T2DM, this care and management has been shown to be effective in reducing glycosylated haemoglobin levels and T2DM complications in patients attending specialised clinics (Berkowitz et al., 2018; Foster et al., 2017; Grace et al., 2017). Therefore, healthcare professionals working at diabetes and bariatrics clinics should be trained and qualified in managing patients who attend the clinic to be able to provide them with the most suitable care and management.

7.3.2 Organisation and environment

The second domain represents the organisation and environment that surrounds healthcare professionals working with people diagnosed with T2DM and eligible for bariatric surgery. This domain consists of two parts. First is the organisation, which includes the work relationships, collaboration and coordination between the healthcare professionals and the administration, and the managerial styles (Carayon et al., 2006). Second is the environment, which concerns the physical infrastructure and setting of the hospital, the design of the work areas, and temperature and lighting (Carayon et al., 2006). From my findings, several elements were included in this domain: guidelines and protocols; lack of communication, collaboration, cooperation and coordination; line of hierarchy among healthcare professionals; and hospital structure and settings.

7.3.2.1 Guidelines and protocols

The first element in the organisation and environment domain is the guidelines and protocols. This element belongs to the organisation part of the domain. Healthcare professionals included in my research reported discrepancies in the diabetes guidelines and protocols followed at the outpatient clinics. The different outpatient clinics had different guidelines and protocols that were managed and decided by the head of the department. According to the findings of my research, healthcare professionals reported that guidelines and protocols were either used within a single department, outdated, frequently changed or were absent.

The advantages of following guidelines and protocols are shown in several recent studies for their effectiveness on T2DM care and management (Alibrahim et al., 2021; Alotaibi et al., 2018; Marcial & Graves, 2019; van Dalem et al., 2021). My research findings found that some departments lacked a guideline for T2DM management. The absence of guidelines was also reported in an earlier study by pharmacists in Kuwait (Al Haqan et al.,

2017). Healthcare professionals in other departments in my research reported that they followed international guidelines when treating and managing their patients, such as those working in the bariatric, diabetes, dietetics and physiotherapy clinics. These departments found that having a guideline provided a standardised care plan to follow and ensured that the needed care was equally delivered by the healthcare professionals in that department. A recent qualitative study highlighted the need for guidelines and protocols to improve the quality of T2DM care provided by healthcare professionals in a Saudi hospital setting (Alotaibi et al., 2018). Also, in a USA setting in a primary health clinic with a high population density of Hispanic patients, guidelines in diabetes care and management were implemented to successfully improve diabetes care (Marcial & Graves, 2019). In Kuwait, the implementation of the diabetes self-management education program on T2DM care and management that was introduced into a primary health centre was found to improve diabetes outcomes by reducing T2DM complications and improving the quality of life for people with T2DM (Alibrahim et al., 2021).

In my study, following a guideline or protocol was not viewed positively by nurses. At one of the outpatient clinics the nurses reported that their guidelines frequently changed, and that this confused them and other healthcare professionals working in the same department. Although change is usually necessary for improvements to occur, frequent change could be disrupting. A cohort study based in Canada that implemented an updated version of the 2015 National Institute for Health and Care Excellence diabetes guideline suggests that it is necessary to further study and implement the suggestions made in the guideline before following it (van Dalem et al., 2021). This supports the issues about the impact on health care professionals of frequently changing guidelines and not allowing enough time for the healthcare professionals and patients to receive treatment as per the guidelines and to experience the outcomes found in my research.

Overall, my findings and the literature on the guidelines and protocols were found to be a key component to ensure that healthcare professionals provide comprehensive management with a patient-centred focus. Although the literature supports the effectiveness of following guidelines, a need to practice these guidelines before permanently changing or updating them is necessary to evaluate the outcomes of a guideline for both patients and healthcare professionals. Only by evaluating the outcomes of a practiced guideline will the healthcare professionals confirm its practicality and suitability for patients.

7.3.2.2 Line of hierarchy among healthcare professionals

The second element in the organisation and environment domain is the line of hierarchy among healthcare professionals. This element also belongs to the organisation part of the domain. My findings reported that healthcare professionals found several aspects that hindered their ability to provide efficient T2DM care and management. These healthcare professionals found that power, trust, knowledge and decision-making acted as barriers to efficient T2DM management for people using bariatric surgery as a treatment option.

Observing the hierarchal pyramid of management at the hospital where I conducted my research, the top managers were physicians and the middle managers were a combination of physicians and allied healthcare professionals (e.g. nurse, dietitian, pharmacist and physiotherapist) who at least held a master's degree in their respected discipline. As one of the aspects that inhibited the delivery of T2DM management efficiently, power was shown to be a major factor in my research findings.

Physicians have commonly been reported as the powerholders at healthcare organisations (Al-Alawi et al., 2019; Katoue, 2021; Rogers, De Brún, Birken, Davies, & McAuliffe, 2020), which supports the findings in my research where physicians were reported as having power over other healthcare professionals. These physicians were reported by other

participants as prohibiting other disciplines from carrying out their duties, such as nurses providing patient education, or dietitians providing dietary consultations, which might be due to the lack of confidence these healthcare professionals displayed in front of the physicians. This negative attitude towards other disciplines who were healthcare professionals could also be due to a conflict in the care or management that these healthcare professionals provided. Al-Alawi et al. (2019) report that Omani nurses were unable to provide nursing care because of the restrictions on the type of care nurses could provide, which was set by a higher authority (who were physicians). In Ireland, senior physicians were the healthcare professionals with the authority and power, and this power would automatically be transferred to the surgeons once presented in a team management situation (Rogers et al., 2020). Petrakaki, Klecun, and Cornford (2016) found that physicians gained power over other disciplines due to the history of medical recording and consultations that resides with doctors. In the 19th century, the constant need for development and improvement of protocols, work dynamics and fight for power occurred between healthcare professionals, which resulted in the shift of patient care from a physician-centred approach to a patient-centred approach (Petrakaki et al., 2016).

Healthcare professionals in my research ranged from those with an undergraduate certificate to a postgraduate degree in the various disciplines and specialisations included in T2DM management. This variation also meant a difference in the knowledge that each healthcare professional attained.

Trust was reported by healthcare professionals to be one aspect that interfered with efficient T2DM care and management. This was associated with the physicians' knowledge and assumptions about other disciplines in relation to T2DM and bariatric management and care. Physicians, being the discipline with power, doubted the capabilities and competency of other disciplines. Okpala (2020) reports that in an

American healthcare system, trust and respect of doctors were aspects that were influenced by their power over other disciplines. Okpala believes that this power causes imbalances in the workplace, which would eventually affect the quality of management provided by the various disciplines in a patient-centred management approach. Similar findings in Kuwaiti settings report doubt by physicians towards the care, management and capabilities of nurses (Al-Alawi et al., 2019) and pharmacists (Alsairafi et al., 2019). This doubt may be due to the physicians' lack of knowledge of other disciplines' roles, or the desire of these physicians to handle patients themselves as a means of power and control in their departments. Physicians were undermining the other disciplines and dismissive of the knowledge these disciplines had, which in return resulted in feelings of resentment, frustration and betrayal of the other disciplines that participated in my study.

Physicians in my research viewed themselves as belonging to the only discipline that could decide on the care and management that was most suitable for patients with T2DM eligible for bariatric surgery as a treatment option. This may have been because they believed that their management would be enough to provide efficient T2DM care and management. Other disciplines in my research reported that the reason behind the physicians being decision-makers was the power they had over healthcare professionals. Pharmacists who participated in my research thought doctors had enough knowledge about the different treatment options for T2DM, and that the restrictions imposed on them were due to the power that physicians held over them as a discipline. Participant nurses, on the other hand, were unauthorised to provide their opinions or suggestions on T2DM management without a physician's order, they therefore reported that, as healthcare professionals, they only followed orders and were not able to make decisions themselves. When the time came for deciding on surgery as a treatment option, the power of decision-making was then passed on from the medical doctor to the surgeons. This coincides with Rogers et al. (2020) regarding surgeons being the discipline with the highest authority in a

healthcare system. Another study by Okpala (2020) found that the power that comes with medical hierarchies are often not challenged by other healthcare professionals due to the lack of confidence, trust and respect that disciplines with power show the other disciplines, which plays a significant role in how other disciplines respond and react to those with power.

According to Bockwoldt et al. (2018), when non-pharmacists or healthcare professionals less competent in T2DM pharmaceutical therapies decide the management plan for people with T2DM, the decision could increase the risk of complications occurring and increase glycosylated haemoglobin levels. As a consequence, the management plan could impact on the financial cost to the healthcare system and reduce patient safety (Alabkal, 2021). The power-focused constraints that physicians, including surgeons, put on other disciplines, such as nurses, pharmacists and dietitians, impacted on these healthcare professionals' ability to provide T2DM and bariatric care and produced doubt about their knowledge and skills for managing people with T2DM eligible for bariatric surgery.

7.3.2.3 Lack of collaboration, communication, cooperation and coordination

The third element in the organisation and environment domain describes a lack of communication, collaboration, cooperation and coordination. My research found that healthcare professionals experienced a lack of communication between departments, a lack of cooperation between healthcare professionals in a single department, a lack of collaboration between disciplines, and a lack of coordination between healthcare professionals when managing people with T2DM eligible for bariatric surgery as a treatment option.

From my research findings, healthcare professionals agreed that there was a lack of communication between various departments. Unable to communicate with their colleagues from other departments made these healthcare professionals feel frustration

and anger, which resulted in poor and inconsistent T2DM care and management. Previous studies conducted internationally report similar findings, where barriers in communication between healthcare professionals impacted the efficiency and consistency of management of patients with T2DM and obesity (Alsairafi et al., 2019; Maneze et al., 2014; Menez et al., 2013; Ritholz et al., 2011).

Several healthcare professionals who participated in my research reported that disciplines in different departments preferred working independently, stating that it was more effective than working together. This independent approach impacted on the delivery of T2DM care and management for people using bariatric surgery as a treatment option. Several studies have found that the lack of collaboration between healthcare professionals when managing people with T2DM using bariatric surgery as a treatment option had a negative impact on the delivery of care provided to patients with T2DM and obesity (Al-Ghawi & Uauy, 2009; Szafran et al., 2019).

A lack of cooperativeness between healthcare disciplines during the implementation of T2DM management for patients using bariatric surgery as a treatment option was found in my research, where physicians and dietitians expressed the necessity of cooperation between disciplines for service delivery to be efficient. Although nurses in some departments reported a degree of collaboration between the different disciplines and departments, this collaborative effort lacked coordination, which resulted in inefficiency in T2DM management provision and poor patient outcomes. An Australian study showed similar patient outcomes when providing T2DM management without coordination between the various disciplines and departments (Maneze et al., 2014).

Overall, there was a lack of collaboration between departments, communication between healthcare professionals, cooperation between disciplines and coordination when

providing T2DM management, resulting in unsatisfactory care, management and service delivery for patients using bariatric surgery as a treatment option for T2DM.

7.3.2.4 Hospital structure and setting

The hospital structure and setting is represented by the organisation and environment domain under the environment part of the SEIPS model (Carayon et al., 2006). There were several related observations regarding the hospital design and layout of the outpatient clinics observed during my data collection. The outpatient clinics were located at opposite ends of the hospital building requiring a two to 10-minute walk from, and between, each clinic's department. Although most of the outpatient departments are located on the same side of the building, it takes two to seven minutes to reach other departments, such as the physiotherapy department. This is considered inconvenient for people with T2DM in Kuwait because of the sedentary lifestyle they lead (Alobaidly et al., 2020). People who are diagnosed with T2DM are usually overweight and have low physical activity (Al Slamah et al., 2017; Alobaidly et al., 2020). The location of the departments could feel like a burden for patients attending their follow-up appointments.

Another issue with the hospital structure that I observed, and participants in my research commented on, was the lack of space. Nurses and pharmacists expressed concern about the lack of adequate space and the need for their own rooms to allow them to provide patient education or consultations, with related privacy concerns, that affected their ability to deliver comprehensive care. Shared rooms with doctors contributed to the inability of the nurse to provide health education, and made it easy for the doctor to restrict nurses' tasks and control the environment to their suitability. Also mentioned in an Omani study, Al-Alawi and Al Mandhari (2020) found that patients' trust in physicians could also be the reason behind physicians' workload, and why other healthcare professionals took up

delegated tasks instead of carrying out their independent roles. This could also be the reason why nurses had shared rooms with physicians.

The lack of space was also reported by pharmacists involved in my research in providing patient education to the patients. Alsairafi et al. (2019) also report that pharmacists complained that the limited space in their department interfered with their ability to provide patient education. In my study, this lack of space forced pharmacists to delegate the role of patient education to nurses, giving the reason that nurses had more time and space on their hands to attend to patient needs. The fact that pharmacists believed that nurses had access to space suggests that there is poor communication between these disciplines. This lack of communication could have been the reason behind the poor glycaemic control in patients with T2DM, where the delegation of diabetes education has been perceived by these healthcare professional as being delivered without actually being carried out.

The issue of lack of space by pharmacists to provide efficient care has been reported in studies previously conducted in Kuwait (Al-Taweel et al., 2014; Alsairafi et al., 2019), and neighbouring countries such as the KSA (Sebiany, 2013). The literature shows that a lack of space and facilities impacts on work productivity and efficiency by the healthcare professionals. The allocation of a consultation room for healthcare professionals could greatly benefit patient care by allowing these healthcare professionals their freedom in managing patients with T2DM while maintaining patient privacy.

The literature also shows that patients prefer physicians over healthcare professionals for the care and management of their condition (Beogo, Darboe, Adesanya, & Rojas, 2018). Therefore, providing each healthcare professionals with a defined role and allowing them to carry out that role independently and in their own space could create an environment where patients view healthcare professionals as capable of managing them.

In general, the literature found that healthcare professionals need their separate space and defined roles for them to provide efficient T2DM and bariatric care and management. Boosting the confidence of healthcare professionals through collaborative work and improvement in communication would assist in reducing the workload on physicians when managing patients with T2DM using bariatric surgery as a treatment option.

7.3.3 Technology

The third domain in the SEIPS model is technology (Carayon et al., 2006), which discusses the technological advancements and equipment that healthcare professionals utilise when managing people, in this instance patients using bariatric surgery as a treatment option for T2DM. Examples of elements that belong to this domain are information technologies, electronic records, computerised providers, bar coding and medical devices. Technology has been a part of T2DM management for decades in the form of glucometers, pumps, educational materials, patient identification and patient laboratory investigations (Petrakaki et al., 2016; Subbe, Øvretveit, Quinn, & Wyatt, 2019). The type of technologies that my research findings identified were computers and the hospital network.

Healthcare professionals who participated in my research commonly mentioned the lack of a hospital system and network that connects the different departments of the hospital. These healthcare professionals expressed concern about their inability to review the type of care, management and investigations that were provided to the patient by other department disciplines. Dietitians reported the lack of computers in their department, and that patient information and records were paper-based and kept in individual files in the dietetics department or in the patient's hospital file that was available in the hospital's medical records department. Similar findings were reported by healthcare professionals at an Omani healthcare centre where the lack of computers and information technology

support systems interfered with the quality of diabetes management service delivered to Omani people with T2DM who attended the centre (Al-Alawi et al., 2019). Due to a shortage of computers, these healthcare professionals entered incomplete data, or lost patient records, which was a result of multiple users using the same computer concurrently (Al-Alawi et al., 2019). Kuwaiti pharmacists also expressed concern about the absence of computers and a network system in their hospital setting, reporting that this contributed to their inability to communicate with other disciplines and departments who were also involved in the management of T2DM and obesity (Buabbas, Alsaleh, Al-Shawaf, Abdullah, & Almajran, 2018; Katoue, Awad, Schwinghammer, & Kombian, 2014).

Another issue that healthcare professionals in my research encountered was the inability to access patient data unless the patient's file was requested, which could only be requested by a physician. This issue could relate back to the aspect of power, where the organisation has privileged physicians among other healthcare professionals (Okpala, 2020). Also, healthcare professional participants required a physician's name to be noted in the file request form for the patient's file to be released, which could be a physician's delegated task to other healthcare professionals and a reason behind why a physician's permission is needed when carrying out some tasks like examination requests, and requests for medical files and reports (Mirhoseiny et al., 2019).

Pharmacists also experienced the same issue when managing patients with T2DM who requested a change of medication or asked for advice regarding the administration of a particular medication. The inability of pharmacists to access the patient's records was due to the lack of a computerised system that could connect the medical files department to the rest of the hospital departments. This created a barrier for the healthcare professionals when needing to communicate their treatments and share their management plan with other disciplines. This issue was also reported by Buabbas et al. (2018) in a study they

conducted in Kuwait on the barriers that pharmacists faced when providing management to patients. Petrakaki et al. (2016) also explain that technology assists interprofessional healthcare collaboration with computerised systems being communication devices that allow different disciplines to access the care and management history a patient has received. The benefits that technology provides healthcare professionals in a hospital setting was also seen in a Saudi setting, in which the adoption of a computerised hospital system and transfer to electronic medical records improved the quality of care and patient safety, reduced medical errors, reduced expenses (paper-based recording), and increased patient outcomes and satisfaction from service delivery (Khalifa, 2017). Technological devices were found to improve the quality of care delivered and assisted in the communication process between the various departments when it came to patient care and management (Khalifa, 2017; Petrakaki et al., 2016).

Healthcare professionals could greatly benefit from a computerised system that connects different departments to provide comprehensive and collaborative care. Gaining access to patient information and management records would help healthcare professionals have a clearer picture of a patient's condition, treatment regimes, history of medication and progress of their chronic condition, T2DM, obesity and other comorbidities. Appropriate access of a computer system could contribute to the betterment of service delivery and patient safety.

7.3.4 Task

The final domain in the SEIPS work system model is the task domain (Carayon et al., 2006). This domain describes the variety of tasks that healthcare professionals perform, the challenges and skills these healthcare professionals experience, and the workload and time pressure that comes with their job description (Carayon et al., 2006). According to the findings of my research, healthcare professionals found that their tasks were the reasons

behind their inability to provide efficient T2DM management to people using bariatric surgery as a treatment option. Several elements in my research findings were found to represent the tasks domain, including role confusion, availability of healthcare professionals, assessing and preparing patients, and patient education.

7.3.4.1 Role confusion

Role confusion was the first element for the task domain. My findings showed that health professionals from each discipline had different ideas about the tasks they were appointed and the tasks that were included in their job description. Nurses were allocated the usual role of providing education. However, this role was restricted because they were only allowed to deliver education to patients following a physician's order. The reason for the restrictions could have been the lack of confidence and trust by the physicians about the level of knowledge and capabilities these diabetes and bariatric nurses possessed. This lack of confidence and trust, that is, role confusion by the physicians, resulted in the allocation of other tasks to the nurses, such as filing and scheduling of appointments. These tasks were originally the receptionist's responsibility but were delegated to the nurses. The uneven distribution of tasks and workload resulted in allocating receptionists less work, while putting additional work on the physicians, and leaving nurses with tasks and responsibilities that underutilised their capabilities and skills. Al-Alawi et al. (2019) report similar findings regarding the lack of confidence that physicians had towards nurses when providing diabetes care to their patients in a Kuwaiti setting. This differs from the findings of Sørensen et al. (2020) on the role of a diabetes nurse specialist in Norway, where physicians were confident in the nurses' capabilities and knowledge and delegated patients to these nurses, allowing a team approach in managing patients with T2DM.

Another area of role confusion in my study was illustrated by the physicians who were confused about the roles of physiotherapists and how they could contribute to patients with

T2DM. Aside from the participant physicians, other healthcare professionals, including one nurse and one dietitian, were unaware of the role of the physiotherapist, which might be the reason behind why patients were not being referred to the physiotherapy department. A bariatric physician was aware of the specialised roles that are needed, emphasising the necessity of a clinical pharmacist, bariatric nurse, diabetes nurse, dietitian specialised in both diabetes and bariatrics, and a sports nutritionist. These specialised healthcare professionals are able to provide the most suitable care for patients with T2DM using bariatric surgery as a treatment option. Such confusion was also seen in pharmacists in Kuwait where they were confused with the roles of the pharmacy technician, which was mostly dispensing and arranging medication due to the lack of a clear guideline that differentiated these roles (Alsairafi et al., 2019). According to Khan et al. (2016), having a team of specialised healthcare professionals is necessary when providing bariatric care for people who use surgery as a treatment option for T2DM. Therefore, having a team that comprises disciplines qualified in the management of diabetes and bariatrics would benefit the care and management provided to patients seeking their services.

7.3.4.2 Availability of healthcare professionals

The second element in this domain was the availability of healthcare professionals (Carayon et al., 2006), where two aspects emerged. These aspects were the inability to contact some healthcare professionals and the lack of acknowledgement of specialised disciplines in the hospital.

Nurses in my research raised their concerns regarding their inability to reach or contact the physicians, especially during the evening and night shifts when patients with T2DM were symptomatic and a doctor's written order for medication administration was required. The inability of physicians to delegate their responsibility due to hospital guidelines and protocols, and the possibility of them being busy with other patients, could have been

some of the reasons behind why the physicians were not reachable by phone. This action led to inefficiency of T2DM management by nurses and the limited care they were able to provide, which resulted in poor T2DM patient care and management.

The lack of communication between disciplines has been raised as one of the major factors to impact on the delivery of a healthcare service (Foronda, MacWilliams, & McArthur, 2016). Some healthcare disciplines in my research were unaware of the presence of other specialised disciplines in the hospital, such as a diabetes educator or diabetes nurses. These diabetes educators or nurses were unknown to pharmacists, physiotherapists and dietitians working at the same hospital. A bariatric physician and bariatric nurse were also unfamiliar to other healthcare professionals. The fact that most of the healthcare professionals were not aware of the specialised diabetes and bariatric healthcare professionals could have been due to the lack of communication between these specialised healthcare professionals. According to Foronda et al. (2016), nurses and physicians receive different training, which affects the way they approach a situation, handle a problem and communicate their management styles. This diversity between healthcare professionals might also be an issue between the various disciplines. El-Hanafy (2018) suggests that healthcare professionals should collaborate in conferences, research projects and seminars to narrow the gap between them and provide insight into the knowledge that each discipline holds. Only through communication and collaboration will specialised physicians and nurses in diabetes and bariatrics be known to their peers. These specialised healthcare professionals were not familiar to other disciplines who could have benefited from their expertise when managing people with T2DM eligible for bariatric surgery.

Overall, the presence of a single powerful discipline was seen as a major factor in the ability to provide T2DM efficiently. Although nurses and other healthcare professionals are

willing to provide appropriate and comprehensive T2DM care, this is often obstructed by imposed organisational restrictions and limitations in other healthcare disciplines' roles.

7.3.4.3 Assessing and preparing patients

Assessing and preparing patients is the third element under the tasks domain (Carayon et al., 2006). In my research findings, healthcare professionals who managed people with T2DM eligible for bariatric surgery expressed concern about the information that was included in referrals from physicians. For example, one dietitian expressed concern regarding the potential misdiagnosis of patients, which could affect the management plan for these patients. A nurse also claimed the psychological wellbeing of patients undergoing bariatric surgery should be assessed before surgery, which was also a concern of one of the physicians interviewed. The physician suggested that the best management for people with T2DM who were eligible for bariatric surgery was that the patient was to be seen by various disciplines where each discipline could contribute to this patient's management plan. According to Khan et al. (2016) and Nithin Shah (2016), the collaboration of various disciplines is the key to a comprehensive management plan for patients undergoing bariatric surgery. Ligita, Wicking, Harvey, and Mills (2018) report that one discipline was not enough to provide efficient T2DM management for patients with T2DM, and that a collaborative effort was needed to ensure comprehensive care was delivered to these patients.

Overall, most healthcare professionals had limited understanding of each disciplines' role in a multidisciplinary team. This lack of understanding appeared to hinder the ability of the healthcare professionals involved in this research study to rely on each other to provide a comprehensive management plan for people using bariatric surgery as a treatment option for T2DM. Members in a multidisciplinary team should be fully aware of each other's role to be able to manage people with T2DM using bariatric surgery as a treatment option,

which includes appropriate assessment and suitable preparation for comprehensive delivery of care.

7.3.4.4 Patient education

The final element found to belong to the task domain is patient education (Carayon et al., 2006). Findings from my research showed that healthcare professionals believed that patient education was necessary during the management of people with T2DM. However, several healthcare professionals reported that patient education was not always delivered to patients, while others stated that patient education was delivered to patients with T2DM, regardless of their eligibility for bariatric surgery. The lack of communication between healthcare professionals limited their knowledge on the service provided by disciplines in other departments to patients with T2DM eligible for bariatric surgery. This is supported by previous research where patients with T2DM in a Kuwaiti setting reported the absence of patient education for bariatric surgery (Alobaidly et al., 2020).

Some healthcare professionals believed that patient education was the responsibility of one discipline. Several studies have supported this concept that patient education is effective when provided by a specific discipline such as nurses (Alibrahim et al., 2021; Bockwoldt et al., 2018), physicians (Yazdani, Abazari, Haghani, & Iraj, 2021), pharmacists (Alabkal, 2021; Eshbair et al., 2021) and dietitians (Garduno-Diaz, 2016; Schiavo, Pilone, Rossetti, & Iannelli, 2019). Alibrahim et al. (2021) report that self-management programs in Kuwait when the education was provided by diabetes nurse educators for patients with T2DM are effective. However, Yazdani et al. (2021), in a study in Iran on patients' trust in nurses providing education, showed that most of the patients with T2DM preferred their education be provided by a physician, and that nurses were less competent and knowledgeable when it came to providing T2DM education. Recent studies in Kuwait have shown the lack of confidence in pharmacists when it comes to providing education due to

pharmacists being labelled as medicine dispensers by both patients and doctors (Alsairafi et al., 2019; Buabbas et al., 2018). Conversely, Alabkal (2021) found in Kuwait that patients with T2DM who received patient education and counselling from pharmacists had better T2DM management of their blood glucose levels.

Other healthcare professionals who have reported their significance as a discipline in patient education and management are dietitians. Garduno-Diaz (2016) reports that the presence of a dietitian or nutritionist for the care and management of patients undergoing bariatric surgery with or without T2DM would assist in better post-surgery outcomes. This finding is also supported by Schiavo et al. (2019) who state that the nutritionist's role has evolved from merely diet consultations to therapeutic management to avoid nutritional imbalances due to bariatric surgery. This argument qualifies them to be a significant member of a multidisciplinary team that manages people with T2DM using bariatric surgery as a treatment option (Schiavo et al., 2019).

Other disciplines have found that a team effort for managing patients with T2DM and providing patient education was managed more successfully when each discipline contributed to the delivery of education when working collaboratively. Szafran et al. (2019) presented their findings of a successful collaborative team effort when managing patients with T2DM in a setting in Canada. This quantitative study reports that collaborative management allowed physicians to delegate tasks, such as medication administration and education to pharmacists, and health education to nurses, resulting in improvements in patient care. Another study, a qualitative design using focus groups conducted in the USA, found that a coordinated and agreed upon patient care plan provided patients with T2DM a tailored management plan that addressed the patient's needs from different disciplines which included a physician, nurse, dietitian, physiotherapist and social worker to improve quality of T2DM care (Berkowitz et al., 2018).

Studies conducted in Kuwait and other countries have reported on the importance of providing patient education in improving T2DM and bariatric outcomes, regardless of it being delivered by a single healthcare professional or a team of various disciplines (Abdel-Latif, 2017; Al Haqan et al., 2017; Al Slamah et al., 2017; Alobaidly et al., 2020; Alsairafi, Smith, Taylor, Alsaleh, & Alattar, 2018; Alsairafi et al., 2016; Alshammari, 2018; Berkowitz et al., 2018; Buabbas et al., 2018; Ligita et al., 2018; Szafran et al., 2019). The significance of delivering patient education has also been highlighted by the findings of my research where different disciplines stressed the significance of empowering the patients with knowledge of their T2DM and the available treatment options, medical or surgical, to allow these patients to take control of their management that best suits their lifestyle.

The internet has become the easiest and most convenient method to access massive information in seconds (Bujnowska-Fedak, Waligóra, & Mastalerz-Migas, 2019). Studies have found that the internet is the main source of information for many people seeking information on disease condition and treatment, such as bariatric surgery (Edward et al., 2016), and T2DM (Waheedi, Jeragh-Alhaddad, et al., 2017). With the availability and easy access to information from the internet and experiences of people with T2DM that were shared online, healthcare professionals, in my research, raised their concerns about the source of information, such as friends and families of people with T2DM. These people advise their friends or family members with T2DM about their treatment options, which could harm these patients as they receive or reading false information or hear about complementary therapies that are not suitable for them. Al-Alawi et al. (2019) report similar findings on Omani people's T2DM information sources, finding that healthcare professionals were less trusting of nurses when it came to the knowledge delivered to these patients. The internet was also reported as the main source of patient information for women in Belgium seeking information following childbirth (Slomian, Bruyère, Reginster, &

Emonts, 2017), and for patients searching for information on plastic surgery in a Polish setting (Janik, Charytonowicz, Szczyt, & Miszczyk, 2019).

Despite the advantages of having easy access to information online (Bujnowska-Fedak et al., 2019), the harmful information that people with T2DM obtain from their non-healthcare professional sources largely lies in the beliefs these patients have about these non-medical remedies, while neglecting the advice of healthcare professionals who are more qualified in providing them with a suitable management plan for their condition. These dubious sources and the low acceptance of education by healthcare professionals could exacerbate the progression of their T2DM and hasten complications, thereby compromising their health outcomes.

7.4 Stage 2: Moving

The second stage of the integrated framework designed for this research project is the moving stage (Figure 7.3). This line-shaded section presents Stage 2 and defines the process in which the plan for change begins on the aspects that were previously identified in Stage 1, unfreezing. For my research that explored the attitudes, beliefs and perceptions of healthcare professionals towards a multidisciplinary team managing people with T2DM using bariatric surgery as a treatment option, one of the aims was the consideration of a nurse-led multidisciplinary team approach. Included in this section are the perceived advantages and disadvantages that healthcare professionals reported towards a multidisciplinary team approach, the belief healthcare professionals had about the role of a nurse in a multidisciplinary team and the proposal for a nurse-led multidisciplinary team for people with T2DM eligible for bariatric surgery. This process is further explained and discussed in the following sections.

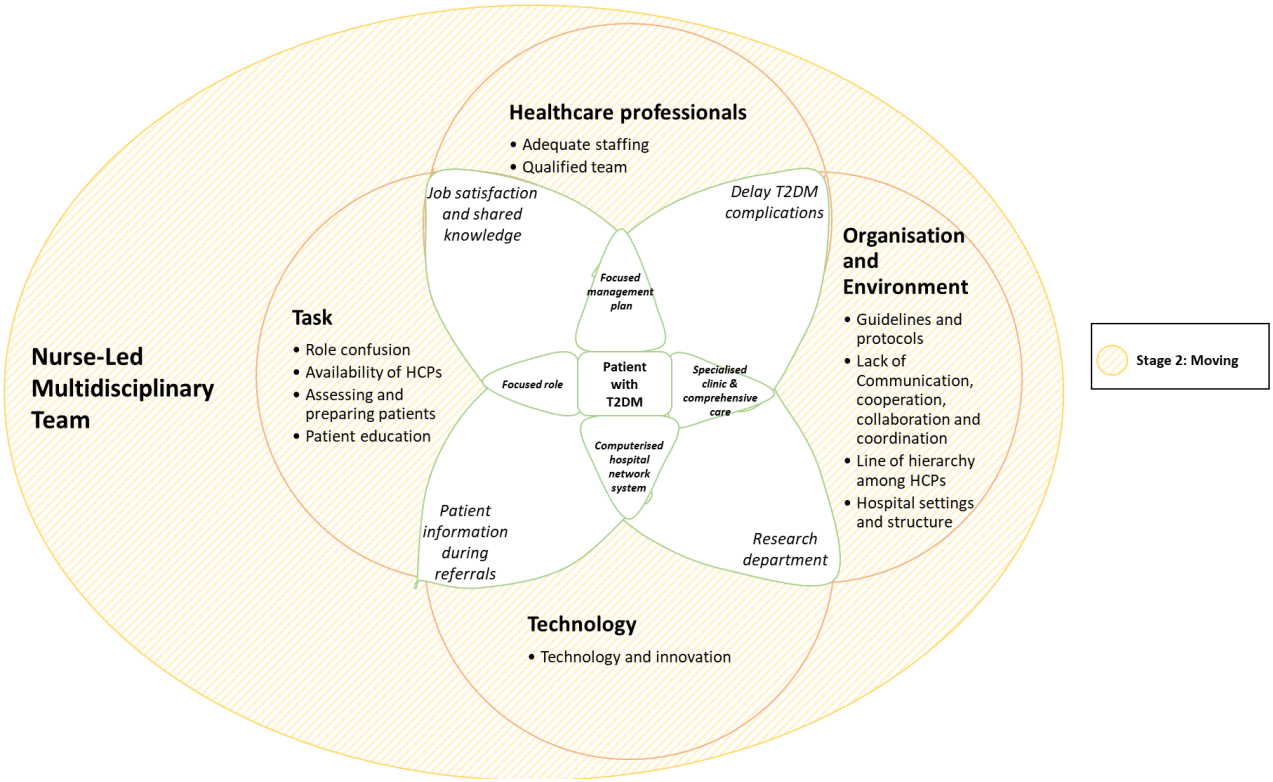

Figure 7.3: Stage 2: Moving

Note: HCPs = healthcare professionals; T2DM = type 2 diabetes mellitus

7.4.1 Multidisciplinary team approach

My research found that healthcare professionals had a similar understanding of a multidisciplinary team approach; they all agreed that such an approach consisted of different disciplines working together for the benefit of the patient. This understanding concurs with Bullen et al. (2019), who define a multidisciplinary team as a team of different specialities working together to provide the most suitable care for patients individually. However, agreeing that working together constitutes a multidisciplinary team does not imply that this was the preferred approach when managing people with T2DM. One physician in my research strongly believed that working independently was the best way to provide patients with T2DM care and management efficiently. Similarly, a survey study conducted in an American setting reported that physicians were more comfortable working as separate units instead of working in a collaborative team, and that referrals to other

departments would be enough to provide efficient T2DM management to patients attending the diabetes clinic (Szafran et al., 2019).

Before initiating a multidisciplinary team approach, healthcare professionals currently opposed to working in multidisciplinary teams related to T2DM and bariatric management could be approached with supporting evidence on the positive benefits for these patients. A discussion with them about their willingness to trial a nurse-led multidisciplinary team could follow. The discussion should also include the advantages and disadvantages of this nurse-led multidisciplinary team approach.

Participants from my research reported possible advantages and disadvantages from utilising a multidisciplinary team approach when managing patients with T2DM eligible for bariatric surgery. The advantages reported by healthcare professionals in my research included avoidance of duplication of routine investigations, reduction in hospital visits, and allocation of sufficient time for patient consultations and education. Similar findings of a retrospective observational study conducted in the UK reported that a multidisciplinary team panel was able to provide suggestions for inclusion in the management plan of people referred for bariatric surgery for the most suitable management plan for each of these referred individuals from the view point and expertise of each discipline in the panel (Bullen et al., 2019). In the USA, a multidisciplinary team care approach was implemented in multiple primary care practices for diabetes management, where healthcare professionals in a single practice would work together as a team when managing patients with T2DM to provide these patients with a management plan that best suited their needs (Berkowitz et al., 2018). This approach was shown to be very effective. Therefore, it is recommended that when initiating a multidisciplinary team, an assessment of the most appropriate approach is undertaken. In the case of the hospital that my research was conducted in, it may be more practical for the healthcare professionals to consider whether

the most appropriate approach may be a team of various disciplines that communicate and collaborate when managing patients with T2DM eligible for bariatric surgery, or a meeting with panel of experts from different disciplines that discuss these patients' eligibility for bariatric surgery.

Possible challenges could arise from initiating a multidisciplinary team approach for patients with T2DM using bariatric surgery as a treatment option. These challenges could include conflict in management and lack of respect. Al-Alawi et al. (2019), Alsairafi et al. (2019) and Yazdani et al. (2021) report that physicians, patients, or both, lacked confidence in healthcare professionals when it came to managing patients with T2DM. Nurses in my research also commented on the possibility of healthcare professionals being disrespected by physicians in their workplace. Similarly, in a Saudi setting it was reported by Alotaibi et al. (2018) that nurses were disrespected and their opinions on T2DM care and management were often dismissed.

Among the various healthcare professionals included in the management of patients with T2DM, physicians were primarily named as the discipline that was a necessary part of a T2DM management team. In contrast, nurses constituted one of the disciplines that were often not mentioned as being integral in T2DM management. Similarly, Al-Alawi et al. (2019) also report that physicians in an Omani setting viewed nurses as being less capable of managing patients with T2DM due to their low knowledge and interest in diabetes. These findings differ from several other studies where the nurse was an essential member of the team who was responsible for coordinating and organising the management plan and education the patient needed (Berkowitz et al., 2018; Cook, McIntyre, Recoche, & Lee, 2019; Walker & Wintergerst, 2015). These authors' findings support my research findings, where the unestablished role of nurses resulted in other

healthcare professionals' misunderstanding the nurses' roles and responsibilities, and underestimating their skills and capabilities.

Other disciplines aside from nurses who were perceived to be extraneous to a multidisciplinary team in my study were dietitians and psychologists. An Australian study found that dietitians and psychologists were not always included in a multidisciplinary team for bariatric care and management (Sharman et al., 2017), which supports the findings of my research where one nurse in my study believed that dietitians were not required in a team that manages patients with T2DM eligible for bariatric surgery as a treatment option. This contraindicates the findings of several other studies that were conducted in the last six years where dietitians were viewed as being as important as the physician in terms of their significance in a multidisciplinary team approach that manages T2DM using bariatric surgery as one of its treatment options (Frohock, 2021; Garduno-Diaz, 2016; Khan et al., 2016; Schiavo et al., 2019).

Although healthcare professionals in my research reported the absence of guidelines and protocols for T2DM management, none mentioned care models in their departments, which could be due to the absence of guidelines and protocols. Multidisciplinary team approach models have been utilised in different settings around the world (Berkowitz et al., 2018; Boissy & Rish, 2021; Parsons et al., 2021; Spencer, 2019), yet this was not discussed between my research participants who were healthcare professionals from the different departments involved in T2DM management, which included bariatric surgery as a treatment option. According to Boissy and Rish (2021), in a USA setting, the guided care model allowed healthcare professionals and patients build a rapport when it came to their management through a computerised network where the communication between physicians, nurses and patients was clear and roles were identified. However, this was achieved with the support of the organisation in providing the necessary technology, and

the cooperation of the healthcare professionals and patients (Boissy & Rish, 2021). The guided care model would be a possible option for this Kuwaiti setting, where nurses and physicians would coordinate to produce a suitable management plan for patients eligible for bariatric surgery as a treatment option for T2DM.

Another model that could be utilised for this Kuwaiti population would be the care coordination model, which was found to be cost-effective in a USA setting (Duru et al., 2020). It also reduced patient visits to the emergency department because patients did not have to wait until their conditions worsen to seek treatment.

In another USA setting, a nurse-led intervention with the help of volunteers for T2DM management using the care coordination model was found to be beneficial for patients who did not have insurance, thus making the cost minimal when receiving T2DM care (Spencer, 2019). This model involved healthcare professionals, the patients' relatives and families, and volunteers in the community to help with the management of people with T2DM in the community. This plan would encourage people in the community to actively participate in spreading the awareness and help in providing care and treatment to people who are less capable of paying for medical and health services.

Overall, a multidisciplinary team includes healthcare professionals from different disciplines who would be given the opportunity to manage patients with T2DM according to their disciplinary role. Allowing nurses and dietitians, who are appropriately trained, to manage and provide care to patients with T2DM and post bariatric surgery could assist in easing the workload of physicians. Multidisciplinary team models were found to benefit in communication and collaboration across disciplines.

In a multidisciplinary team, healthcare professionals from different disciplines should be given the opportunity to manage patients with T2DM according to their discipline's role. Allowing nurses and dietitians who are appropriately trained to manage and provide care

to patients with T2DM and post bariatric surgery could assist in easing the workload of physicians.

7.4.2 The role of nurses in a multidisciplinary team

My findings presented the perceptions of healthcare professionals on the role of nurses in a multidisciplinary team for T2DM management. Their role was unclear to other healthcare professionals, who often associated a nurse's role with education or patient records and file management. Part of the nurses' delegated tasks were patient education, scheduling and handling appointments, and following physician's orders unquestioningly. These findings are supported by Niu et al. (2021), who conducted a recent systematic literature review and meta-analysis on randomised trials conducted around nurse-led web-based interventions for people with T2DM. These authors found that the role of nurses in diabetes care was undefined, and that there were no guidelines that stated their responsibilities clearly (Niu et al., 2021). Cook et al. (2019) also report similar findings in the absence of protocols and guidelines when it came to the nurses' role in Australia and New Zealand. Even though this survey study was focused on a multidisciplinary team for patients in gynaecology and oncology, the concept is transferrable to T2DM management. These nurses had a significant role in educating, communicating and supporting patients throughout their management (Cook et al., 2019).

Successful programs where nurses were able to exercise their knowledge and skills in a multidisciplinary team approach for diabetes management in the USA (Bockwoldt et al., 2018; Herges, Ruehmann, Matulis, Hickox, & McCoy, 2020), in gynaecological oncology in Australia (Cook et al., 2019), and as a diabetes nurse specialist for diabetes care in Ireland (Riordan, McHugh, Murphy, Barrett, & Kearney, 2017) have been reported in the literature. The roles of nurses need to be explicitly identified and acknowledged by the organisation and between healthcare professionals due to their central role and cross-communication

between the various disciplines involved in complex conditions such as T2DM and bariatric surgery.

The absence of understanding of the nurses' roles in my research could have been the reason behind the reported heavy workloads for the nurses in my study, the underestimation of their skills and capabilities, and the delegation of tasks more rightfully belonging to other disciplines. Therefore, a clear guideline and description of the nurses' role in diabetes and bariatrics is needed. To complement this, other healthcare professionals need to be educated on the role nurses can play to ensure they are aware of their duties, knowledge, capabilities and responsibilities. This awareness would allow nurses to use their time more effectively and efficiently.

7.4.3 Nurse-led multidisciplinary team

Several studies have been conducted on the effect of nurse-led interventions or nurse-led teams on diabetes care and management (Hailu, Hjortdahl, & Moen, 2021; Beogo et al., 2018; Guo et al., 2021; Krederdt-Araujo et al., 2019; Manders et al., 2016; Ni et al., 2019; Odnoletkova et al., 2016; van Dijk-de Vries et al., 2016; Wang, Shen, Chen, Li, & Zhan, 2019). These studies were conducted in different countries including China, Ethiopia, Peru, Burkina Faso, the Netherlands and Belgium, and were mostly quantitative studies, with only one mixed method study that was conducted in the Netherlands by van Dijk-de Vries et al. (2016). This mixed method study found that patients appreciated nurses who provided independent T2DM management, and the patients were more open to discuss their psychosocial problems with these specialist nurses (van Dijk-de Vries et al., 2016). Some studies found that a nurse-led multidisciplinary team approach was effective in T2DM management (Ni et al., 2019; Wang et al., 2019). An earlier study on a nurse-led tele-coaching intervention conducted in Belgium showed improved levels of blood glucose, total cholesterol and body weight in patients with T2DM (Odnoletkova et al., 2016).

Conversely, one clinical trial conducted in Ethiopia on the impact of a nurse-led approach for T2DM management found that there were no significant changes in patient blood glucose levels (Hailu et al., 2021). Additionally, a systematic review on nurse-led web-based interventions for T2DM management found that a nurse-led intervention led to no significant changes on blood glucose levels in people with T2DM (Niu et al., 2021), which coincides with the findings of Hailu et al. (2021). However, a nurse-led approach that is provided face-to-face may result in better outcomes than a web-based intervention, where patients with T2DM may be more responsive to the management approach. This was reported by Salamanca-Balen, Seymour, Caswell, Whynes, and Tod (2018) who showed that a nurse-led approach reduced the cost of resources, in this instance, in palliative care. Kunikata, Yoshinaga, Yoshimura, and Furushima (2021) also support a nurse-led approach, stating it decreased the medical cost of care and management in a mental healthcare setting.

My research found that physicians represented the healthcare discipline with the most power over all the other healthcare disciplines, and therefore the physician was recognised as the leader in a multidisciplinary team that managed people using bariatric surgery as a treatment option for T2DM by default. This was also reported in a Norwegian study conducted by Sørensen et al. (2020), where physicians claimed that they operate as a team, with nurses and other healthcare professionals being delegated tasks by these physicians instead of working independently, under the guise of a team approach. However, a cohort study in the Netherlands conducted in 2016, showed that nurse-led T2DM care and management in the presence of a guideline was able to yield similar outcomes to those of a physician-led management team (Manders et al., 2016). This nurse-led approach is also recommended by Bockwoldt et al. (2018), whose study found that nurse diabetes educators in the USA were experts in diabetes-related issues, including medication, and that these nurses were more than capable of taking over

diabetes management of patients when physicians had insufficient time or were overburdened by work.

Griscti, Aston, Warner, Martin-Misener, and McLeod (2017) believe that when nurses are given the opportunity to lead, they often overpower the voice of the patient with T2DM when providing T2DM management. This overpowering by the nurses was supported by an organisational hierarchy where healthcare professionals were considered the experts and the patients' knowledge and experience were dismissed. This does not differ from other healthcare professionals' approaches, in which organisations believed that physicians were experts in the field, so they provided the care while disregarding patient's requests and needs (Alobaidly et al., 2020). Therefore, when preparing a nurse-led multidisciplinary team approach, and including patients in their management plan thereby allowing them to share their experiences and knowledge with the nurse-led multidisciplinary team, is recommended so that the patients feel empowered to improve their glycaemic levels and may adhere to their plan. In turn, this could result in improved long-term outcomes for the patients.

A survey study that was conducted in Burkina Faso, a country in the west of Africa, on T2DM management of a nurse-led versus doctor-led management format found that patients favoured physicians to nurses due to the lack of trust in nurses' knowledge (Beogo et al., 2018). This mistrust could be due to an unfounded historical belief that nurses have limited knowledge, having been viewed in the past only as doctors' helpers because they had low self-confidence, lacked authority and lacked unity (Ferguson & Anderson, 2021). An Omani study by Al-Alawi et al. (2019) showed that despite the capabilities of nurses for T2DM management, there was a need to convince patients and physicians of the nurses' ability and skills in T2DM care and management before a nurse-led approach could be initiated and implemented. However, the added responsibility for

the nurses and the amount of additional workload might have been discouraging for these nurse leaders, despite these additional responsibilities being a part of their job description and role in a multidisciplinary team approach (Herges et al., 2020).

In a recent study, a nurse-led approach was found to be more clinically effective in the management of T2DM than a physician-led approach (Crowe, Jones, Stone, & Coe, 2019). Empowerment, confidence and unity would shift the status of nurses from being underestimated to being leaders of a multidisciplinary team (Ferguson & Anderson, 2021). Nurses were found to be successful leaders, but the amount of responsibility and workload was reported as the reasons for the nurses' reluctance to lead a multidisciplinary team (Herges et al., 2020). Therefore, balancing the workload of healthcare professionals could improve and encourage nurses to take up leadership roles.

Overall, a multidisciplinary team approach was found to be beneficial in terms of providing every discipline the opportunity to exercise their role and be acknowledged as a discipline. However, the effectiveness of a multidisciplinary team as a collaborative team for bariatric surgery as a treatment option for T2DM needs to be further examined. Studies have shown the role of nurses as team members is vital, despite being regarded as dispensable in a multidisciplinary team approach for T2DM and bariatrics in my research population,. Therefore, the implementation of the nurses' role as the discipline that organises and networks between various departments, forging collaborative teamwork, is necessary so that comprehensive patient care is streamlined, efficient and effective.

7.5 Stage 3: Refreezing

The third stage of the integrated framework utilised in this research is the refreezing stage, represented by the green shaded part in Figure 7.4. This stage describes the possible outcomes following Stage 2: moving (Carayon et al., 2006). This third stage evaluates the change plan, and identifies the outcomes found from discussing the first and second

stages. This third stage (refreezing) can also be utilised to identify new barriers in healthcare, re-evaluate existing plans, or maintain successful plans for continuous development and improvement of the organisation (Carayon et al., 2006). For this refreezing stage, I discuss the expected outcomes for patients, healthcare professionals' and the organisation. Several aspects were found to belong under this stage, including having a focused management plan and focused role, specialised clinics and comprehensive care, and a computerised hospital network system. These aspects are further discussed in the following sections.

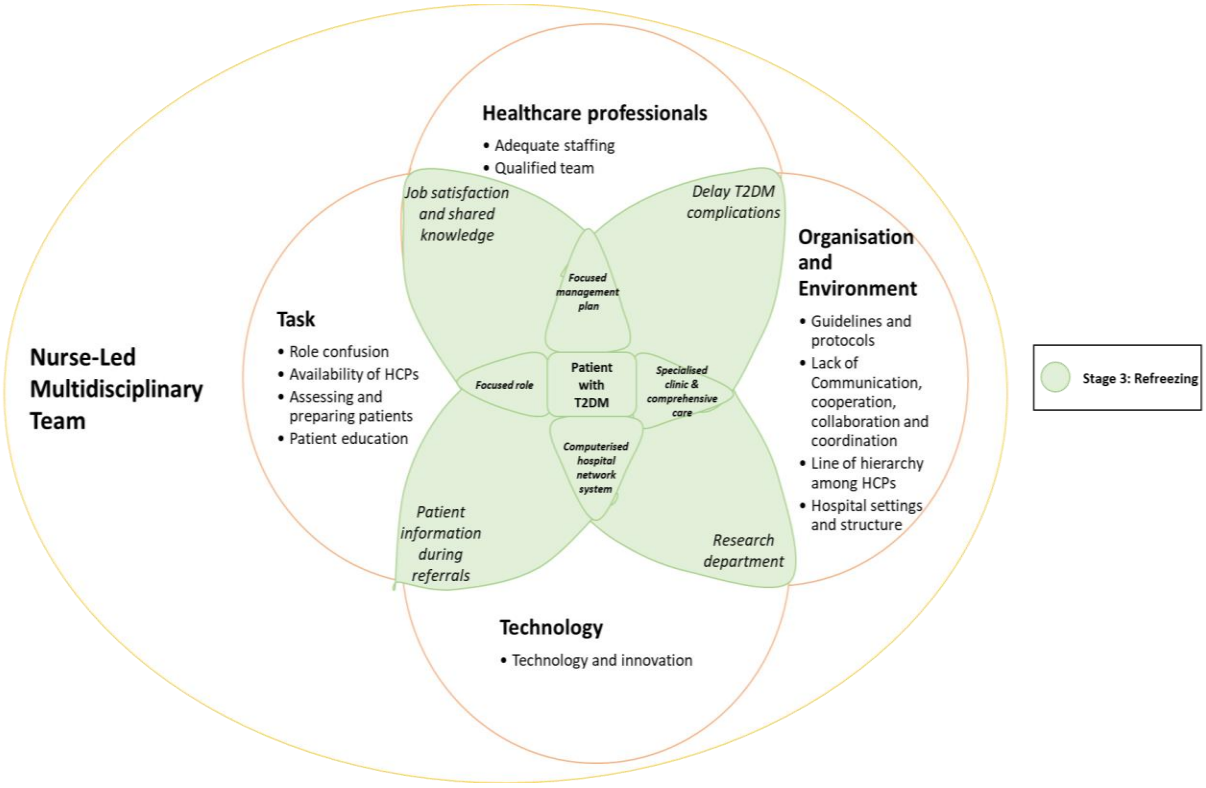

Figure 7.4: Stage 3: Refreezing

Note: HCPs = healthcare professionals; T2DM = type 2 diabetes mellitus

7.5.1 Focused management plan and focused role

The healthcare professionals in my research reported that the lack of guidelines and protocols, the inadequate number of staff and the unclear roles of disciplines in a multidisciplinary team hindered the quality of services delivered to patients with T2DM using, or eligible for, bariatric surgery as a treatment option. The implementation of a

nurse-led multidisciplinary team could assist in improving the service delivered to this population.

The healthcare professionals perceived that initiating and implementing a multidisciplinary team approach could solve one of the barriers to efficient T2DM management for people using bariatric surgery as a treatment option. From my research findings, an expected outcome is the development of a focused management plan for patients with T2DM eligible for bariatric surgery as a treatment option. According to Sørensen et al. (2020), a collaborative approach in the management of diabetes is more effective when healthcare professionals have defined roles and manage patients as a multidisciplinary team while also including the patient's knowledge and experience. Griscti et al. (2017) support this concept regarding the need to include the patient's input of their experiences with their T2DM in their management plan for better outcomes. As one of the barriers to efficient T2DM management, the inability of patients to adhere and commit to their schedules could be managed if healthcare professionals included them in their management plan (McGill et al., 2017). This was studied in a Kuwaiti setting by Alabkal (2021), who found that when the focus of the pharmacist shifted to include patients in their T2DM management plan instead of a healthcare professional focused plan, their glycaemic levels improved and patients were more willing to adhere to their T2DM management plan. These studies support my research findings, where the pharmacists viewed that having a focused management plan would help patients understand their plan, which in turn could help them adhere to it and improve their glycaemic levels. Moreover, nurses and physiotherapists considered that a focused management plan could provide them with a sense of job satisfaction where they would be able to contribute their knowledge and expertise in patient T2DM care and management. A focused management plan was considered by the physicians and pharmacists who participated in my research to delay T2DM complications in patients having difficulties in managing their T2DM. The benefit of a focused

management plan has been presented in several studies from different settings where a multidisciplinary diabetes management approach improved glycaemic levels in patients with T2DM (Alobaidly et al., 2018; Mirhoseiny et al., 2019; Szafran et al., 2019).

In the management of T2DM for patients using bariatric surgery as a treatment option, the availability of a focused management plan with defined discipline roles for each of the healthcare professionals involved in this management could therefore improve patients' glycaemic levels. The improvement in T2DM management could result in improvements in the quality of care and service delivery.

7.5.2 Specialised clinics and comprehensive care

My research found that the impractical layout design of the outpatient clinics, the limited technological devices, limited qualified healthcare professionals in diabetes and bariatrics, and the hierarchical restrictions created barriers that had a negative impact on patient care and management. For a multidisciplinary team approach to be successful, the healthcare professionals would need to be working in the same area while using the same network system, so that services could be streamlined between the different disciplines. Having a multidisciplinary team approach was perceived to develop and improve the situations leading to the barriers, whereby specialised clinics could be initiated to provide patients with comprehensive care through a collaborative effort delivered by various disciplines. A multidisciplinary collaborative approach was believed to impact positively on patient's overall care and management, which could delay T2DM complications in patients attending this comprehensive and specialised clinic. Riordan et al. (2017) found that for a nurse-led multidisciplinary team approach to succeed, specialised staff with identified roles for each discipline would assist in providing a comprehensive approach. This approach also considered the independence that each discipline would undertake in their management for people with T2DM (Riordan et al., 2017). Collaborative communication

between healthcare professionals would greatly assist in providing patients with T2DM the comprehensive care they need to manage their condition.

Other literature reports that utilising qualified staff for the treatment of T2DM was beneficial for a multidisciplinary team approach where the tasks were distributed according to the management focus, such as a diabetes nurse educator on hypo and hyperglycaemic management, pharmacists on medicine administration and compatibility, and dietitians on dietary consultations (Alabkal, 2021; Frohock, 2021; Mirhoseiny et al., 2019; Tahaineh et al., 2019; Wang et al., 2019). Allowing healthcare disciplines to independently manage their patients means that up-to-date knowledge regarding the roles of these disciplines is needed in T2DM. This knowledge could be obtained via searching for successful examples in relatively similar settings from online databases and journals and undergoing training in diabetes and bariatrics care and management.

An option for ensuring staff are up-to-date on current trends in health care is for hospitals to provide a research department within the facility. Such a research department could provide healthcare professionals with access to online resources, which could assist them in obtaining evidence-based successful management strategies and plans. According to Au-Yong-Oliveira, Pesqueira, Sousa, Dal Mas, and Soliman (2021), these types of departments would be needed in every organisation that seeks to develop, improve and create a successful work environment. Furthermore, this addition would allow healthcare professionals to have access to online information and international peer-reviewed articles on the most suitable and up-to-date management plan, guidelines and protocols for people using bariatric surgery as a treatment option for T2DM (Sharman et al., 2017). For example, van Dalem et al. (2021) conducted a retrospective cohort study where they evaluated a T2DM management plan and patient results following the release of the T2DM 2015 National Institute for Health and Care Excellence guideline to measure the

management process and its practicality, which supports the notion that guidelines need to be tested first before implementing a permanent change of the currently used guidelines. Also, Sharman et al. (2017) state that guidelines and protocols must be continuously updated for better post-surgical outcomes. The absence of a dedicated research department and the absence of guidelines in my research setting resulted in the inability of healthcare professionals to access reliable sources, such as peer-reviewed journal articles via online databases and internationally known medical associations' websites, such as the IDF (International Diabetes Federation, 2021), Obesity Surgery (International Federation for the Surgery of Obesity and metabolic disorders, 2021), and WHO (World Health Organisation, 2021c).

Participants in my research study assumed that the lack of awareness of stakeholders of the benefits that research can provide an organisation resulted in the absence of a research department. A recent quality improvement report in a UK setting found that when hospital administrations cooperate and get involved in trials for the improvement of quality of care delivered to patients, successful outcomes were apparent for both healthcare professionals and patients attending hospital during the night (Saqib et al., 2021). This example could also be used in the management of T2DM and bariatric surgery through welcoming innovative plans, communicating and collaborating with healthcare professionals, and providing the necessary support.

7.5.3 Computerised hospital network systems

The findings from my research on the computerised network system was presented and discussed under the technology domain (see Section 7.3.3) as one of the barriers to providing efficient T2DM care for people using bariatric surgery or eligible for the surgery as a treatment option. Healthcare professionals in my research expressed concern about their inability to communicate with each other or access a patient's records without a

physician's approval. This limited access that healthcare professionals experienced during their care delivery affected the time they were allocated for managing patients attending their clinics. According to Woodruff et al. (2020), nurses and dietitians are an integral part of a multidisciplinary team approach for people with eating disorders, but were seldomly recommended for management by physicians. This was seen among dietitians and physiotherapists in my research project, where patients were not referred for management, or were referred but with very limited patient history and information, which forced the dietitian to spend more time obtaining consent from both patients and physicians to retrieve a patient's documents. The absence of a computerised network system complicates the ability of healthcare professionals to access essential information such as blood investigations, examination reports, list of current medications and the patient's history to provide a tailored management plan for these patients. The inability of healthcare professionals to access patient files and records immediately costs these healthcare professionals time, which could be spent more efficiently managing the patients' conditions directly, continuing the management plan, or providing a new plan tailored to the patients' needs with considerations for other disciplines' management.

As previously discussed in Section 7.3.3 on technology, computerised systems were found to have a promising impact on service delivery where it could assist healthcare professionals with communication and tracking of their patient's management plan. However, healthcare professionals still find it challenging to get patients to keep their appointments and commitment when it comes to their follow-up appointments (Al-Alawi & Al Mandhari, 2020; Mc Sharry et al., 2019). Recent literature has found that mobile phone reminders in Ethiopia (Mekonnen, Gelaye, Were, & Tilahun, 2021), the USA (Mahmud et al., 2021) and Ireland (Moran, O'Loughlin, & Kelly, 2018) encourage patients to attend their follow-up appointments or allow them to reschedule to their convenience. In the USA, telephone call reminders were also found to have a positive effect on reminding patients of

their scheduled appointments, which in returned increased the number of patients adhering to their follow-up appointments (Lagman et al., 2020). This computerised strategy could be utilised as a method to reduce the number of patients who miss their follow-up appointments.

A computerised network system would mean improved communication between healthcare professionals, access to patient records and treatment history, and the ability to plan patient education independently while being aware of other disciplines' management plans. A connected hospital system could allow healthcare professionals to work in collaboration with other disciplines where their management plans could be streamlined and tailored to the individual patient's needs more efficiently. For patients, the benefits of a computerised system would include that those patients would no longer need to carry their blood and investigation results from one clinic to another, avoid losing their medical or hospital file and enable them to schedule multiple appointments without having conflictions between departments.

7.6 Summary

This chapter discussed the perceptions of healthcare professionals towards a multidisciplinary team approach in managing people with T2DM who are using, or are eligible for, bariatric surgery as a treatment option. An integrated framework using Lewin's planned change theory (Lewin, 1947) and the SEIPS model (Carayon et al., 2006) was presented and discussed.

The first stage, unfreezing, discussed the barriers to efficient T2DM management in a work system at a government hospital in Kuwait. The domains included healthcare professionals (qualified staff), organisation and environment (guidelines and hospital structure), technology (computerised system), and task (role confusion). The sections presenting these domains discussed that in a work system, healthcare professionals'

capabilities are underestimated, and their knowledge and skills doubted, while the organisation grants physicians full advantage of their position as healthcare professionals and managerial roles. These barriers were discussed in detail, explaining the impact that a single discipline had on non-efficient delivery of T2DM care and management.

The second stage, moving, introduced and discussed the proposed intervention for a nurse-led multidisciplinary team. Although studies conducted in several countries found the importance of a nurse's role in a multidisciplinary team, other disciplines need to accept with confidence the skills and knowledge nurses possess in the management of patients with T2DM. The capability of nurses to lead a multidisciplinary team given a structured guideline and good communication with other disciplines could allow patients to place more trust in nurses as experts in their field. This approach, if successful, could provide nurses with the professional discipline role that had been dismissed by medical hierarchies of the organisation's managerial positions. Other healthcare professionals, such as physicians, could have more time with patients during their consultation sessions to provide them with the most suitable T2DM management, which could include bariatric surgery as a treatment option. Pharmacists, dietitians and physiotherapists could provide comprehensive care and management according to their defined roles to people seeking their services.

The third stage, refreezing, discussed how a multidisciplinary team approach could improve the management of diabetes and bariatrics for people using, or eligible for, bariatric surgery as a treatment option for T2DM. A focused management plan with defined discipline roles, specialised clinics with comprehensive care and technological advancements are possible outcomes of a successful multidisciplinary team approach. Patients, organisational and healthcare professional advantages are expected outcomes of this intervention.

The next chapter (Chapter 8) is the final chapter of this thesis, and presents the implications, recommendations, strengths and limitations of my study findings, as well as new knowledge. A conclusion completes the thesis.

Chapter 8: Conclusion

8.1 Introduction

This research explored the attitudes, beliefs and perceptions of healthcare professionals towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. An interpretive description methodology was utilised to answer the research question:

What are the attitudes, beliefs and perceptions of healthcare professionals towards a multidisciplinary team approach in the management of people using bariatric surgery as a treatment option for T2DM?

The research question was answered by describing, exploring, explaining and interpreting the various disciplines that are involved in T2DM management with bariatric surgery as a treatment option. Using interpretive description allowed the perceptions of these healthcare professionals to be explored and understood, while uncovering their understanding of a multidisciplinary team approach, and the role each discipline plays when managing people with T2DM using bariatric surgery as a treatment option in a Kuwaiti setting.

This chapter covers the implications and recommendations from my research findings for healthcare practice, nurse education, policymakers and stakeholders, and possible future research. The strengths and limitations then follow. This chapter ends by presenting the new knowledge discovered from conducting this research and the conclusion to this thesis.

8.2 Implications of this research project

The study findings revealed factors and outcomes of healthcare professionals' perceptions in Kuwait towards a multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. The discussion of the findings in Chapter 7 illustrated

implications for the healthcare system, healthcare professionals, nursing practice, research, nursing education, patient education and policymakers in healthcare settings in Kuwait and neighbouring countries with similar challenges. The implications could positively impact on the implementation of a nurse-led multidisciplinary team approach for people using bariatric surgery as a treatment option for T2DM. The recommendations arising from these implications are discussed in the following section. A summary is provided at the end of the recommendations, in Table 8.1.

8.3 Implications and recommendations for healthcare systems in Kuwait

The study findings identified the lack of organisational involvement in the care and management of T2DM and the use of bariatric surgery, which impacted on the service delivery as a result of healthcare professionals not communicating efficiently. Therefore, the service delivered to these patients was limited and inefficient.

The lack of organisational support included the absence of guidelines and protocols for both healthcare professionals and patients attending the diabetes and bariatric clinics, limited specialised healthcare disciplines in diabetes and bariatrics, and the absence of a research department. Having clearly established guidelines and protocols could benefit the healthcare system by allowing healthcare professionals to perform their roles efficiently and provide T2DM patients with the required care and management (Al-Alawi et al., 2019; Alibrahim et al., 2021; Alotaibi et al., 2018; Guo et al., 2021; Marcial & Graves, 2019; Mc Sharry et al., 2019). However, piloting any change in guidelines is required before actually implementing the change to assess its practicality and suitability for the local setting (Alibrahim et al., 2021; van Dalem et al., 2021). Therefore, it is recommended that healthcare systems in Kuwait provide guidelines and protocols for healthcare professionals managing people with T2DM using bariatric surgery as a treatment option.

In order to provide comprehensive T2DM management using bariatric surgery as a treatment option, a sufficient number of qualified and specialised staff for both diabetes and bariatrics is needed (Alabkal, 2021; Alibrahim et al., 2021; Bockwoldt et al., 2018; Garduno-Diaz, 2016; Szafran et al., 2019). Insufficient staffing should be addressed by the organisation with the aim of delivering the best and most suitable care for patients attending the hospital seeking T2DM management and the different available options they are offered (Alabkal, 2021; Frohock, 2021; Mirhoseiny et al., 2019; Riordan et al., 2017; Tahaineh et al., 2019; Wang et al., 2019). Therefore, this research recommends that healthcare organisations employ a sufficient number of healthcare professionals trained to improve T2DM care and management that includes bariatric surgery as a treatment option.

My research examined how the diversity in the availability of guidelines impacted on the service delivered to patients eligible for bariatric surgery as a treatment option for T2DM. The absence of guidelines in some departments made it difficult for other departments that did have guidelines to continue patient management efficiently, which led to repetitive tests and some examinations being requested and others neglected. The presence of a research department would allow healthcare professionals to search and obtain reliable information regarding the best practice and most recent findings on diabetes and bariatric care and management available. According to Au-Yong-Oliveira et al. (2021) and Sharman et al. (2017), only through conducting research will an organisation be able to improve their services for the benefit of their patients and the healthcare professionals actively working in the organisation. Alabkal (2021), Alibrahim et al. (2021), Saqib et al. (2021) and van Dalem et al. (2021) provide recent examples on the positive outcomes that research can produce when implemented or piloted in an organisation. Therefore, it is recommended that internationally developed guidelines should be reviewed and assessed for their feasibility on a Kuwaiti population. It is also recommended that a functional research department supplied with online resources be established in the healthcare

organisation to assist with providing up-to-date information and effective management in T2DM and bariatrics.

Improvements in service delivery and communication methods between healthcare professionals needs to occur. Meetings, conferences, seminars and case reports would allow different disciplines to communicate and discuss their views on patient care and management, which might encourage this collaboration. A computerised network system makes communicating between the departments easier, which could also assist in organising patients' management between them. It is therefore recommended that all healthcare facilities establish up-to-date computerised systems throughout the organisation to allow for efficient streamlining of healthcare service delivery.

8.4 Implications and recommendations for healthcare professionals

While a multidisciplinary team approach has been used worldwide for many years, this concept has yet to be applied in Kuwait. However, the willingness of physicians to hand over prominent leading roles to healthcare professionals might be challenging. Patients in Australia (Cook et al., 2019), the USA (Bockwoldt et al., 2018; Herges et al., 2020) and Ireland (Riordan et al., 2017) view nurses as one of the most trusted disciplines, but nurses' reliability and skills are still questioned in Kuwait. This mistrust and lack of confidence can only be corrected through a joint effort between physicians as the powerful discipline and the organisation in providing nurses with a clear and defined role independent of the physician and other disciplines. Therefore, it is recommended that the healthcare organisation, in collaboration with physicians, prepare a clear and defined role statement for nurses that is independent of physicians and other disciplines. During this process, it is envisaged that healthcare professionals would be encouraged to actively share their knowledge to help collaboration and communication between physicians and healthcare professionals.

8.4.1 Implications and recommendations for nursing practice

As stated in the previous section, nurses should have a defined and clear role in their departments, which would be known to other disciplines. This would avoid nurses simply accepting tasks delegated to them and allow them to instead contribute with their specialised nursing skills and knowledge (Bockwoldt et al., 2018; Herges et al., 2020). In addition, nurses with a defined role would benefit other disciplines by being included in a multidisciplinary team thus reducing the workload that was delegated to other disciplines. Registered Nurses are highly skilled in writing, coordinating, and organising the management plan inclusive of all disciplines, and communicating the management plan to their patients (Cook et al., 2019; Riordan et al., 2017). This would encourage nurses to be independent, utilise their full capability and have responsibility for the patients' management strategy. However, it is also recommended that the organisation provides each healthcare professional an independent role statement for managing patients with T2DM using bariatric surgery to improve service delivery and job satisfaction.

Registered nurses should be actively involved in T2DM management by delivering patient education and undertaking leadership roles, as studies have found nurses to be efficient in optimising and improving delivery of service (Boissy & Rish, 2021; Parsons et al., 2021). It is therefore recommended that the healthcare organisation, with input from all disciplines, construct an all-inclusive and structured patient-education program, giving nurses in particular the opportunity to coordinate management and care in diabetes and bariatric clinics.

According to El-Hanafy (2018), encouraging healthcare professionals to present at seminars, conferences and case reports would boost their confidence and allow them to engage with different disciplines through transferring their knowledge and experience.

Therefore, it is recommended that hospital management encourage and support nurses to be actively involved in such professional development.

8.4.2 Implications and recommendations for type 2 diabetes mellitus and bariatric surgery patient education

Findings from my research identified barriers in T2DM management for patients using bariatric surgery as a treatment option. This included a lack of communication, which led to inefficient delivery of patient education, or its absence due to delegation of healthcare professionals' tasks and miscommunication of discipline roles. The previous recommendation was for an all-inclusive and structured T2DM patient education program that includes the different disciplines. Further, it is recommended that a discipline-focused guideline for a comprehensive T2DM management strategy be developed to facilitate improved communication between healthcare professionals. This guideline should be tested for practicality and clarity between the various disciplines involved in T2DM care and management that includes bariatric surgery as a treatment option.

The findings of this research could also serve as a basis for knowledge when initiating a multidisciplinary team management structure for T2DM patients using bariatric surgery as a treatment option. The expectations of healthcare professionals reported in the findings could help in constructing a strategy for a collaborative management plan for patients with T2DM eligible bariatric surgery as a treatment option. Therefore, it is recommended that healthcare professionals are made aware of the tasks and responsibilities of other disciplines when providing T2DM care and management for patients eligible for bariatric surgery as a treatment option for T2DM. This awareness could also assist these healthcare professionals plan their patients' management and referrals to other departments.

8.4.3 Implications for research

This research has raised questions that need further exploration. Further research could investigate Kuwaiti healthcare professionals' views in hospitals from both government and private sectors. This may provide greater understanding of how patients manage their T2DM with the presence of a surgical option. This could be conducted using a questionnaire for quantitative data, or interviews for qualitative data. This could also be designed as a mixed methods study to provide rich information on the perceptions of healthcare professionals in Kuwait.

Future research could also include more specialised disciplines such as bariatric surgeons, plastic surgeons, podiatrists, psychologists and psychiatrists. Surveys could be conducted with these healthcare professionals to investigate how these disciplines perceive bariatric surgery as a treatment option for T2DM, and their inclusion in the management of people with T2DM. Following the survey, interviews could also be conducted with these healthcare professionals to obtain greater depth of information regarding their attitudes and beliefs around their role in T2DM management.

A pre-test post-test research design could also be undertaken to evaluate the effectiveness of T2DM management without a multidisciplinary team approach, in which assessment of the quality of service delivered to people attending the hospital for T2DM management could occur. Another similar research project could be undertaken following the initiation of a multidisciplinary team approach for people with T2DM using bariatric surgery as a treatment option. This multidisciplinary team could be nurse-led or dietitian-led and include different disciplines working as a team. A randomised controlled trial with a control and intervention site, a cohort study, or an action research design could be used for this investigation.

Conducting research using a survey about the willingness of physicians and other healthcare professionals for a nurse-led or any other healthcare professional-led multidisciplinary team, is necessary before implementing a significant management change activity. Trying out an intervention before implementing the change was the strategy utilised in several studies, such as in Canada (van Dalem et al., 2021) and in the UK (Saqib et al., 2021). This would assist in identifying any barriers and challenges that may arise that would contribute to the failure of a multidisciplinary team approach before executing the change. Therefore, it is recommended that a survey be conducted with physicians and other healthcare professionals about healthcare professional led multidisciplinary teams.

The cost of a multidisciplinary team arose in several studies (Niu et al., 2021; Odnoletkova et al., 2016; Wang et al., 2019). However, a nurse-led intervention for T2DM management, which uses clear guidelines and protocols to be successful, could be cost-effective and needs further investigation. This concept needs to be studied in a Kuwaiti setting where nurses are often underestimated and have limited roles when it comes to the management of people with T2DM and bariatric surgery. This also means that the acceptance of patients with T2DM to be seen by nurses who are given a more prominent role in regard to these patients' management need to also be assessed to prepare for any challenges that might arise. Studies have also found that involving patients in their management plan would assist in improving glycaemic levels and their adherence to their management plan, which would delay T2DM complications (Griscti et al., 2017). A cohort study design could be used to evaluate the effectiveness of patient's involvement in their management plan on their glycaemic levels in a Kuwaiti population.

There is a lack of multidisciplinary team models being implemented in healthcare settings, including in the management of T2DM and bariatric patients. Therefore, studying the

effectiveness of multidisciplinary team models such as the guided care model and care coordination models would identify their feasibility in a Kuwaiti healthcare system and population.

Patients are often found to be difficult when providing diabetes education and management, which impacts the service delivery of healthcare professionals managing patients with T2DM. Examining healthcare professionals' belief towards patients receiving diabetes education and management would provide a clearer pathway into the education provided to these people and help them cope with difficult diabetes management in their daily routine.

8.5 Implications and recommendations for nursing education

Nursing education has progressed with the evolution of medicine and medical education. The profession of nursing has evolved and developed over many years to now have different specialisations that benefit the community. My current research found that nurses' knowledge and skills were not highly regarded in the Kuwaiti research setting. It is recommended that public campaigns be organised to educate the community to instil confidence in care provided by nurses.

Higher levels of nurse education are also required to ensure that nurses wishing to specialise their skills have options available to them in Kuwait. It is recommended that nursing colleges deliver different nursing courses according to the needs of the community, such as community health nursing programs, diabetes nursing specialisation, health educator program, and programs that would help nurses to develop the collaboration skills to be able to work in a multidisciplinary team. It is also recommended that nurses avail themselves of continuing education programs to update their skills. This

program should include different communication skills and strategies to assist with providing diabetes educational programs suited to a Kuwaiti culture.

Table 8.1 provides a summary of the recommendations outlined.

Table 8.1: Summary of recommendations for the establishment of a multidisciplinary team for people using bariatric surgery as a treatment option for type 2 diabetes mellitus

Recommendation	Body responsible	Comment
Provide guidelines and protocols for healthcare professionals in Kuwait	Healthcare systems	Pilot any changes prior to implementation
Employ a sufficient number of trained staff	Healthcare organisation	Expected to improve service delivery
Establish a research department	Healthcare organisation	Ensure sufficient online resources are available to provide up-to-date information
Establish a computerised network system	Healthcare facilities within the organisation	Designed to facilitate improved communication between healthcare professionals
Provide nurses with a clear and defined role independent of physicians and other disciplines	Healthcare organisation in collaboration with physicians	Aimed to correct mistrust and lack of confidence with respect to nurses
Provide independent role statements for all healthcare professionals	Healthcare organisation	Aimed to improve the independence of nurses
Construct an all-inclusive and structured patient education program	Healthcare organisation with involvement of all disciplines	Expected to provide nurses with the opportunity to coordinate management and care of patients in diabetes and bariatric clinics
Encourage and support nurses to be actively involved in professional development	Hospital management	Such professional development to include attendance at seminars and conferences, and presenting case reports
Construct a discipline-focused guideline for a comprehensive management strategy	Healthcare organisation with involvement of all disciplines	Test the guideline for practicality and clarity between disciplines prior to implementation
Raise awareness of health professionals about the tasks of other disciplines	Healthcare organisation with involvement of all disciplines	Aimed to assist planning for patient management and referrals between departments
Survey physicians and other healthcare professionals about healthcare professional-led multidisciplinary teams	Healthcare organisation	Essential prior to the establishment of a multidisciplinary team

Recommendation	Body responsible	Comment
Organise public campaigns to educate the community about the knowledge and skills of nurses	Healthcare organisation	Encourage people to trust the capability of nurses when providing T2DM and obesity care and management
Increase the level of nursing education	Nursing colleges	Include community health programs, diabetes specialisation, health educator program, and programs to help nurses develop collaboration skills for working in a multidisciplinary team
Undertake continuing education programs	Nurses	Courses to include communication skills and strategies to assist in providing diabetes education programs suited to Kuwaiti culture should be encouraged

8.6 Limitations of this research project

There were a number of limitations identified in this research project. These limitations were mainly related to the healthcare professionals, transcript validation and data analysis, as discussed in the following paragraphs.

The first limitation was the sample size, where only 18 healthcare professionals participated in the research. However, these healthcare professionals were from different disciplines (physicians, nurses, pharmacists, dietitians and physiotherapists). The majority of the participants were nurses, hence other disciplines were under-represented. Also, the majority of the participants were Kuwaiti nationals, which could have been overrepresented, while there were under-represented disciplines from other nationalities. However, most of the healthcare professionals had worked for at least 10 years at the hospital and had adapted to the Kuwaiti culture.

The other limitation was that data collection commenced before the Covid19 pandemic lockdown and was paused until restrictions were eased. This impacted on the number of

participants; some of the participants who showed interest in the research initially later retracted their interest. Interviews were conducted face-to-face, which then changed to telephone interviewing, in which body language and the possibility of seeing participants' reactions in response to the questions were not available. Observation sessions were also limited to less than 10 minutes instead of the usual 15 to 20 minutes, and were only for prescription renewals, urgent cases and the first follow-up after bariatric surgery.

The population sample was collected from a single government hospital, which does not represent the practice in other healthcare organisations. This research, however, represented a sample of the different departments and disciplines available in other healthcare organisations with a diabetes and bariatric department.

Additionally, exercise science database (e.g. SPORTDiscus) was not included in the literature review, which could have provided perceptions from the physiotherapist and physical activity in patients with T2DM or bariatric surgery. However, databases that are nursing focused and contain a large number of scientific and medical articles were included, such as (CINAHL, SCOPUS, OVID, etc).

8.7 Strengths of this research project

The strength of this research lies in its methodological approach – interpretive description – which allowed the researcher to delve into the delivery of management services and question the organisational structure and management. This provided rich information of the barriers and challenges that interfere with efficient T2DM and bariatrics management.

Another strength was that the views of different disciplines were collected. These disciplines varied in their educational degrees, level of knowledge and years of experience, which provided views from different perceptions and from different hierarchical levels. Although the participants were from different backgrounds, they shared the same

culture – the hospital culture. This was found to be similar between the different healthcare professionals.

8.8 New knowledge

This interpretive description research addresses the gaps found in the literature regarding the attitudes, beliefs and perceptions of healthcare professionals towards a multidisciplinary team approach in managing people using bariatric surgery as a treatment option for T2DM in Kuwait. New knowledge includes the perceptions of healthcare professionals from different disciplines that were involved in T2DM and bariatrics management at a government hospital in Kuwait. Although the healthcare professionals differed in their disciplinary background, they all agreed that a multidisciplinary team approach would be the ideal management strategy for patients using, or eligible for, bariatric surgery as a treatment option. Nurses were the main focus of this research, and they were reported to be unnecessary in a multidisciplinary team for T2DM management. This idea was against what the nurses believed and they reported that the reason behind their minimal involvement was due to organisational restrictions. Hierarchical power was also seen as a major factor to the nurses' limited role and inefficient T2DM management. Physicians were given the authority to manage patients without any restrictions on how to manage, whereas other disciplines needed physicians' orders to obtain patient files and change their management plan.

New knowledge discovered from my research was that other barriers that interfered with T2DM care and management were a lack of guidelines and protocols in diabetes, a lack of qualified healthcare professionals in diabetes and bariatrics, role confusion, and a lack of communication and collaboration between healthcare professionals from different disciplines and departments.

This research further found that the absence of a research department, and the inability to access medical and scientific journals online were lacking in this healthcare organisation. The absence of facilities and resources affected the quality of service delivery, and the efficiency of patient care and management for people attending this healthcare organisation, which was reported on for the first time.

Overall, reporting the inadequacies and inefficiency in a healthcare organisation would assist in highlighting the problem areas that needed improvements for the betterment of the establishment and its patients. The lack of facilities and resources, the lack of communication between healthcare professionals, and the absence of protocols and guidelines that are unique to a healthcare organisation have become the basis for inefficient T2DM management for both people and healthcare professionals attending this healthcare organisation.

8.9 Conclusion of this thesis

This ethically approved interpretive descriptive research project aimed to explore and understand the perceptions of various healthcare disciplines towards the implementation of a multidisciplinary team approach for people with T2DM using bariatric surgery as a treatment option in Kuwait. Research on the experiences of people with T2DM post bariatric surgery showed a lack of bariatric patient education, inefficient T2DM patient education, and a lack of multidisciplinary team management for diabetes and bariatrics in a Kuwaiti setting. As a nurse with experience in the care and management of people with T2DM in Kuwait, this led me to my research question *What are the attitudes, beliefs and perceptions of healthcare professionals towards a multidisciplinary team approach in managing people using bariatric surgery as a treatment option for T2DM?* Additionally, I was eager to understand what healthcare professionals perceived were the roles of other disciplines if they were to be part of a multidisciplinary team approach. This interest came

from being a part of a family with a medical background discussing our experiences on the difficulty of managing people with T2DM and the excess workload of a few disciplines.

Previous literature relevant to the topic of interest was reviewed to obtain insights on the perceptions of healthcare professionals working as a multidisciplinary team managing people with T2DM using bariatric surgery as a treatment option in Kuwait and neighbouring countries. Limited literature was found around a multidisciplinary team approach for T2DM management. However, studies that investigated the perceptions of healthcare professionals and people with T2DM having had bariatric surgery have suggested the necessity of providing a multidisciplinary team approach for this population. Moreover, the literature in a Kuwaiti setting is mostly quantitative in nature, focusing on physicians over other disciplines. Very few studies have explored pharmacists, dietitians and nurses' perceptions. No studies were found regarding the perceptions of physiotherapists. Despite the active role of these healthcare professional disciplines in the care and management of T2DM and bariatric surgery, the literature around them was limited, which is not fully representative of healthcare professionals' perceptions but rather physicians' roles. Also, the literature mostly assesses the effectiveness of a multidisciplinary team and their importance, yet healthcare professionals in Kuwait found it challenging in initiating one. Therefore, this research project sought to explore the reason behind these challenges by investigating healthcare professionals' perceptions of the role of a multidisciplinary team, their perceptions on the different roles of the disciplines included in this team, and their willingness to be part of a multidisciplinary team.

An interpretive description approach was the chosen methodology to explore the perceptions of healthcare professionals towards a multidisciplinary team approach in managing people using bariatric surgery as a treatment option for T2DM. This approach allowed understanding of what healthcare professionals from different disciplines viewed

as a multidisciplinary team approach for these patients and what it would entail. This approach allowed for understanding about what each discipline knew about the role of other disciplines managing this population, and identified the challenges they faced as healthcare professionals when managing patients with T2DM using bariatric surgery as a treatment option in the outpatient clinics at a Kuwait Government hospital.

Eighteen healthcare professionals voiced their beliefs and perceptions on a multidisciplinary team approach. These healthcare professionals were from various disciplines: nurses, physicians, pharmacists, dietitians and physiotherapists, working at the outpatient diabetes and bariatric clinics in Kuwait. Three main themes and seven subthemes were generated from the interviews and observations that were conducted through an inductive thematic analysis process. These findings were interpreted with consideration to the evaluation criteria for interpretive description. An integration of Lewin's planned change theory (Lewin 1947) and the SEIPS model (Carayon et al., 2006) was developed to frame the findings discussion.

Barriers to efficient T2DM management were imposed by the organisation and healthcare professionals themselves. These barriers were in the form of the lack of guidelines and protocols, the shortage of qualified staff, and the outdated facilities in the management of patients with T2DM using bariatric surgery as a treatment option. Healthcare professionals also played a role in providing inefficient T2DM management through hierarchical power that was the domain of the physicians, the lack of communication and collaboration between disciplines, and the lack of understanding of each discipline's role in a multidisciplinary team approach for patients using bariatric surgery as a treatment option for T2DM. Among the various disciplines that participated in this research, the nurse's role was the most misunderstood and undefined. Most of the healthcare disciplines delegated

their roles to nurses thinking that they assisted other disciplines instead of having their own significant role in T2DM care and management.

A nurse-led multidisciplinary team approach was suggested as a plan for change at the diabetes and bariatric outpatient clinics to address the reported barriers. The literature found that there was no difference between a nurse-led or physician-led multidisciplinary team approach at a diabetes clinic. However, the lack of confidence of other healthcare professionals in nurses, the underestimation of other disciplines in the nurses' knowledge and skills, and undefined roles, were challenges that need to be addressed before initiating a nurse-led multidisciplinary team for people using bariatric surgery as a treatment option for T2DM.

Patient outcomes, such as comprehensive care with a focused management plan that could help in delaying T2DM complications, were expected for patients being managed by a multidisciplinary team for T2DM using bariatric surgery as a treatment option. Healthcare professionals and organisational outcomes need to include focused discipline roles, specialised clinics for diabetes and bariatric care, a computerised hospital network, research department, and the ability to work as a team each within their disciplinary capabilities.

In summary, in a multidisciplinary team approach for the management of T2DM using bariatric surgery as a treatment option found physicians to be the preferred leaders of the team in the Kuwaiti setting. However, recent studies support that for a multidisciplinary team approach, nurses, pharmacists and diabetes educators would also yield similar results where roles, guidelines and protocols are defined. The potential of having a successful multidisciplinary team approach could benefit patients, healthcare professionals and the organisation by providing comprehensive individualised care for people with T2DM eligible for bariatric surgery as a treatment option. Advantages that include technology,

research, and a defined role for evenly distributed tasks, could result in the improvement and development of T2DM and bariatric service care and management delivery for patients in Kuwait.

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Appendices

Appendix 1: Johns Hopkins Nursing Evidence-based research evidence appraisal tool

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Available online from:

[https://www.hopkinsmedicine.org/institute_nursing/models_tools/guided_care_nursing.html]

Appendix 2: Johns Hopkins Nursing Evidence-based Practice evidence level and quality guide

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Available online from:

[https://www.hopkinsmedicine.org/institute_nursing/models_tools/guided_care_nursing.html]

Appendix 3: Summary of included articles

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Al-Alawi et. al (2019) (Oman)	To explore challenges faced in diabetes management clinics	Qualitative Semi-structure interviews and observations Research and Ethical Review and Approval Committee at the Ministry of Health in Oman Four care providers were only observed 18 care providers were interviewed only, Nine care providers were observed and then interviewed. (31 in total? – not clearly stated) Data collection was from January to March 2016	The shortage in staff, lack of space and lack of computers interfered with diabetes management. Physicians view nurses as incapable of providing diabetes care due to their lack of knowledge and training in diabetes Nurses claimed that their job description inhibits them from actively managing patients for diabetes Physicians claim that due to the nurses' incompetence, they do not trust nurses in providing diabetes care Lack of space inhibits patients to confidently manage their diabetes due to the ratio of staff to patient in one room Dietitians and health educators were more confident than nurses of their skills, which could be due to the lack of identified role nurses have in comparison to other healthcare providers Lack of pharmaceutical options in diabetes which affects the efficiency of diabetes management **Recommendations:** Empowering patients could assist in improving patient compliance and adherence to their diabetes treatment	This study included physicians, nurses, dieticians, health educators, pharmacists, an assistant pharmacist, a psychologist, and a medical orderly Rich data were collected from 5 Diabetes clinics via interviews and observations	Number of total participants was not clearly stated. Uneven number between participant disciplines.	HCPs perception in diabetes manage-ment	III - A/B

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Al-Haqan et al. (2017) (Kuwait)	To measure pharmacists' attitudes towards the management of diabetes To identify current levels of pharmacy service provided to patients with diabetes To identify barriers for further provision of diabetes-related services	Quantitative Descriptive cross-sectional study (survey) from February to April 2015 Pharmacists in Hawalli region 84.8% completed the questionnaire Ethics approval by Dasman Diabetes Institute, Kuwait	Pharmacists had a generally positive attitude towards diabetes management "the need for special training in patient education" (p. 277). Physicians and patients perceived pharmacists as dispensers only Pharmacists who graduated from Kuwait University were more positive towards the need for special training, more aware of the severity of T2DM, and thought it was necessary to have tight control compared to pharmacists who graduated from other universities Pharmacists only advice patients on medication administration but not hypoglycaemia and comorbid disease management Lack of local guidelines on the roles of pharmacists	Attitudes of pharmacists in managing people with T2DM Identified barriers in T2DM service delivery	Cross-sectional study does not identify changes in attitudes or practice Only covered 1 out of 5 health regions in Kuwait Reponses were taken at face value without verification	HCP perception on MDT	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Ali et al. (2009) (UAE)	To explore perspectives of health professionals on factors influencing weight management behaviours of Emirati women To identify lifestyle-related strategies that can facilitate their weight management efforts	Qualitative Grounded theory 24 face-to-face individual (45−60-minute interviews) conducted from January to August 2007 A group interview with six Emirati PHC family physicians The study was approved by the Al Ain Medical District Human Research Ethics Committee	High-calorie foods consumption due to easy access to fast food and unhealthy foods served in schools and universities, frequent family gatherings (overeating) Low physical activity due to several factors such as taking on multiple responsibilities (work and childcare), medical conditions (joint pain), and easy access to housemaids and cars, lack of ladies' gyms Limited availability of dietitians in the PHC and lack of educational materials **Recommendations:** Increase social support; health awareness and education at personal, health care system, and community level; change health care systems; introduce and implement supportive policies at community level; and MDT approach are suggestions to improve weight-loss management The need to understand and take into consideration the relevant sociocultural and environmental factors to achieve successful weight management interventions	First study to explore HCPs' perspective on factors influencing weight management in Emirati women, provides a framework for understanding barriers and formulating solutions Demonstrates the important role of PHC professionals to the development of community-based health promotion interventions	HCPs were only PHC physicians Interviews were not audio-recorded which could have contributed to inaccurate information	HCP perception on weight management	III-A/B

Al-Najjar et al. (2012) (Kuwait)	To reveal knowledge, attitude and practice of PHC physicians towards overweight and obesity management	Quantitative Cross-sectional descriptive survey from March to April 2012 352 physicians from all PHC centres in Kuwait The Ethical Committee of the Kuwaiti Ministry of Health approved the research	Most physicians did not receive any obesity specialised courses or training but had attended presentations or lectures and had an interest in obesity management Most physicians thought they had limited knowledge about obesity management, surgical treatment and were not aware of obesity guidelines Limited number of physicians were confident is treating people with obesity but were ok to deal with overweight and obese children Most physicians agreed that they needed further training in counselling about nutrition, physiotherapy and drug treatment Physicians' sources of information were internet, continuing medical education, obesity guidelines, and medical journals Most physicians had limited knowledge on bariatric surgery and about half on approved medication. Only some physicians believed that obesity is a health problem in Kuwait and believed they have limited role in obesity control Physicians mostly used dietary advice or physical activity or both. Some physicians used behavioural counselling or referrals to dietician. Physicians' major limitation is short consultation time and work overload The majority of physicians believe that obesity is due to the lack of patients' motivation, inadequate training for obese patients, and the lack of obesity clinic **Recommendations:** the need for other HCPs such as physiotherapist, pharmacist and nutritionist	Included all doctors in PHC in all 6 health regions in Kuwait Included BS as an option Included physicians' referral to other HCPs	No limitations mentioned Cross-sectional study does not identify changes in the attitudes or practice Only mentioned dietitians from other HCPs	HCP perceptions on obesity and its management	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Alotaibi et al. (2018) (KSA)	To identify and explore the factors nurses perceive as influencing their knowledge acquisition in relation to diabetes care and its management in Saudi Arabia.	Qualitative Exploratory descriptive 16 nurses from different hospital areas	Nurses' roles were poorly defined which sometimes overlapped with other disciplines Nurses lack of knowledge in diabetes care and management Nurses to be included in patient education Other HCPs were reluctant for nurses to take over patient's management due to the lack of nurses' knowledge in diabetes **Recommendations**: The need for an MDT approach to address patient needs The need to update and encourage nursing education	Nurses' perceptions Other HCPs perception of nurses in diabetes management	Single centre	HCP perception of diabetes manage-ment	III–A/B
Auspitz et al. (2016) (Canada)	To identify Ontario family physicians' knowledge and perception of BS	Quantitative Survey design Self-administered questionnaire developed and validated using a focus group of seven PHC physicians 165 surveys completed The study was approved by the institutional Research Ethics Board	Most physicians initiate conversations about bariatric surgery with morbidly obese patients, but hardly referred them surgery Physicians have limited understanding of the benefits and risks associated with different bariatric procedures Lack of patient education and follow-up care Lack of public awareness in surgery as obesity management **Recommendations:** Improve patient education, provide physician with education in bariatric surgeries	Identified potential barriers to BS referral among GPs in a public healthcare setting	Cross-sectional study does not identify changes in the attitudes or practice Self-selection bias due to the voluntary nature of the survey and incentives offered Recall bias due to self-reporting by clinicians	HCP perception on BS	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Al-Ghawi & Uauy (2009) (Bahrain)	To describe the opinions of physicians in Bahrain regarding their role in obesity control, including their capabilities and limitations To evaluate their knowledge, attitudes and practices towards obesity prevention and management in PHC	Quantitative Cross-sectional survey Conducted in April 2006 97/107 physicians participated (ethics not mentioned)	Low level of effectiveness in weight-loss practices Negative views regarding the success of obese and overweight patients to lose and maintain weight Pharmacotherapy was used less often even if clinically indicated due to the high cost, its safety, possible ineffectiveness or unavailability of anti-obesity drugs in governmental clinics Physicians are less aware of the potential benefits surgical of surgical treatment and fearful of possible risks Physicians lacked the availability of qualified surgeons Absence of clinical guidelines for obesity management **Recommendations:** Importance of collaboration with other health professionals, especially dietitians, is well recognised, but heavily under-resourced	Relatively large sample of physicians in Bahrain Identified barriers such as underutilisation of weight-loss surgery and anti-obesity drugs to manage people with obesity Physicians have negative views regarding obesity and its management	Cross-sectional study does not identify changes in attitudes or practice Cluster sampling might underestimate the actual variance. Participants within the same health centre are more likely to share similar experiences Lack of resources to collaborate with other HCPs Limited scope of information that could be gathered due to short questionnaire Self-reporting bias could provide overreporting	HCP perception on obesity manage-ment	III-A

Alsairafi et al. (2019) (Kuwait)	To elicit the views and experiences of patients and PHC physicians concerning the pharmacist's role in improving medication adherence, particularly in T2DM	Qualitative Cross-sectional semi-structured interviews conducted with 40 adults with T2DM and 21 physicians Interviews comprised open questions, leading questions were avoided The patients' topic guide included 8 questions on medications administration during daily life. Patients' views and experiences on the role of pharmacists in the management of T2DM, especially on the use of medications and the support needed from pharmacists to improve medication adherence The physicians' topic guide included 5 questions focusing on how physicians perceive the role of pharmacists in the management of T2DM and the support needed from them to address non-adherence of patients The study was approved by the Standing Committee for Coordination of Health and Medical Research, MOH, Kuwait	Physicians and nurses are the main sources of information about T2DM and its medication Physicians were dissatisfied with the role of pharmacists All participants emphasised the importance of promoting pharmacists' educational role through counselling Physicians lacked confidence in pharmacists and perceived them as medication suppliers with limited knowledge of medications Pharmacists advise patients on medication administration but do not provide patient education such as diabetes complications. Physicians found lack of time prevented pharmacists from providing patient education Physicians thought that pharmacists could reduce the workload and improve patient outcomes if pharmacists were more involved in patients' management Physicians reported that pharmacists were uncooperative and avoided such discussions where they had informed patients about errors without notifying the physicians first Pharmacists reported that some physicians are open to discussion, while others rarely contact them regarding medication information **Recommendations**: delegating dispensing to technicians, freeing up pharmacists to deliver patient education efficiently Pharmacists need special training in behavioural and communication skills to improve their confidence in discussing pharmaceutical care issues with physicians and providing diabetes-related services to patients	Provided data from both primary and secondary healthcare levels The main 5 health regions in Kuwait ensured generalisability of the results with data from varying sociocultural backgrounds and geographical areas (e.g. rural and urban), ensuring coverage of different perspectives and experiences Identified the confusion between the role of the pharmacist and the pharmacist technician	Focused only on pharmacist's role and impact on medication adherence of patients with T2DM Qualitative study as a cross-sectional methodology	HCP perception on T2DM manage-ment MDT	III-A/B

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Al-Taweel et al. (2014) (Kuwait)	To identify pharmacists' potential contributions to the delivery of pharmaceutical care to patients with T2DM in Kuwait To identify and explore barriers that were preventing them from providing care to this specific group	Mixed methods between February and April 2011 Questionnaires distributed via an online survey (Kwik Survey [14]) 50 pharmacists in primary and secondary care centres in Kuwait responded (20%) (n = 50) Focus group (n = 7 pharmacists) Approval from the Medical Research Ethics Committee of the Ministry of Health and the Human Ethical Committee, Health Sciences Centre, Kuwait	Pharmacists were uncomfortable discussing medication-related matters with physicians Pharmacists were willing to working with physicians who were in the same age group and were acquaintances Increasing clinical therapeutic skills would increase confidence in approaching and discussing pharmaceutical care issues with physicians Pharmacists were viewed by some doctors as dispensers with no clinical skills Lack of guideline for pharmacists to provide clinical consultations Pharmacists reported their lack of access to patients' medical records, lack of facilities and lack of time and staff impacted efficiency of care **Recommendations:** improve the relationship between pharmacists and physicians to expand the diabetes care team to offer mutually beneficial partnerships in which both share responsibility for patient care	Mixed research methodology provides better understanding, a fuller picture and better description Provides useful information for pharmacists' contributions and barriers to the delivery of pharmaceutical care to patients with T2DM in Kuwait	Low response rate despite the use of online method to distribute the questionnaire Cross-sectional nature of the data represented one point in time and do not reflect any changes in respondents' beliefs over time	HCP perception of T2DM manage-ment MDT	

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Bullen et al. (2019) (UK)	To evaluate the decision-making process of a single-day bariatric MDT clinic To evaluate whether these MDT decisions were implemented	Quantitative (case control study) Retrospective observational study analysing MDT treatment decisions from February 2012 to June 2013 using an MDT proforma	All MDT meetings were attended by at least one surgeon, anaesthetist and dietitian Investigations (gastroscopy & lung test) performed only when indicated for individual patients The MDT approach was effective in providing the most suitable care for patients seeking bariatric surgery The information and education delivered to patients during the MDT process influenced patient decision for undergoing surgery The MDT resulted in delays to treatment leading to further investigations, assessment or interventions, which in the case of BS may improve outcomes rather than the opposite	This study showed the importance of MDT meetings important in deciding the most suitable care for patients seeking bariatric surgery	Retrospective data, not able to have control group or observe single day of MDT management	MDT care	III-A
Claridge, et al. (2014) (New Zealand)	To explore GP opinion of weight management interventions in one region of New Zealand	Qualitative study design to explore the viewpoints of GPs in the Wellington region on weight management in PHC. 12 GPs from 11 practices were interviewed (30–60 min) The study was approved by the Otago University Human Ethics Committee (Health) (Ref. D12/403)	GPs act as educators to influence and encourage obese patients GPs decides on the weight-loss intervention according to the 'perceived effectiveness' of the intervention GPs rarely referred to the available guidelines and did not find interventions beneficial GPs were negative about weight-loss intervention and lack evidence about the long-term effects and outcomes, but were believed in the stories of patients who had undergone BS. Physicians linked negative outcomes with psychological difficulties **Recommendations**: the need for clearer clinical criteria for intervention	Barriers for obesity management included a society where overweight is seen as normal; complex situations in which weight management is rooted in personal issues; stigma associated with overweight and its management; lack of efficacious interventions; and low resource availability	Small sample	HCP perception on weight manage-ment + BS	III-A/B

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Conaty, et al. (2019) (USA)	To elucidate self-reported major referral barriers, the degree to which attitudes about BS are held among providers, the degree of comfort with bariatric referral and care, and the impact of patient BMI and comorbidity on referral	Quantitative Cross-sectional 150/533 (28%) physicians responded between March and June of 2018	Physicians have positive attitudes about BS as a treatment option for obesity Physicians frequently exclude or overlook obese patients with a lower BMI, despite the presence of obesity-related comorbidities Physicians are reluctant to refer for BS due to their concerns over surgical complications and side effects and ineffective weight loss following BS	PHC physicians report significant barriers to confidently referring their own patients BS overlooked in a large group of patients with BMIs between 35 and 40 Identified primary barrier for referrals	Low response rate Questionnaire wasn't validated Questions were constructed using clinical knowledge and literature review therefore might be biased by the investigator PCP in the same hospital system and can't reflect other communities Inability to directly compare referral rates with nationwide rates	HCP perception of BS	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Dixon et al. (2008) US (25); UK (8); Europe (3); Israel (1); Australia (2); Asia (2)	To gain an understand-ing about physician attitudes, beliefs, knowledge and barriers towards adult patients who are overweight and obese	Literature review Up to July 2007 43 empirical articles (2 Australian) published between 1987 and 2007 regarding beliefs and attitudes towards the management and treatment of overweight and obese adults	Physicians reported being confident when treating obesity but only few reported its success or effectiveness Physicians knew the benefit of weight loss on co-morbidities (e.g. diabetes), but lack of knowledge regarding treatment options Physicians have inadequate training and knowledge and were pessimistic about available treatments Physicians mostly refer patients to a dietitian and prescribe a behaviour modification program Most physicians reported the ineffectiveness of pharmacotherapy Physicians do not include very low-calorie diets and BS do not appear to be included despite the recommendations of the National Health and Medical Research Council Physicians believe that patients are obese due to the lack of compliance and motivation weight loss **Recommendations:** There is a need to support a broad range of therapies for obesity management A 5−10% weight loss should be considered a success for health benefits, but a physicians' failure for patients' body image or self-esteem		Over 10 years ago	HCP perception on obesity manage-ment	V

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Eshbair et al. (2021) (UAE)	To evaluate services delivered by pharmacists including education, To identify counselling barriers in pharmaceutical care provided to patients with diabetes	Cross-sectional survey using self-administered questionnaire (68 question with 20 closed and 48 open ended questions) 300 participants (60% response rate) Data collection commenced from July to September 2018 Al Ain University Ethical Review Committee approved the study	Pharmacists were seen as medical dispensers than HCPs capable of providing counselling to patients with T2DM Pharmacists did not collaborate with physicians when providing diabetes management Lack of time, inadequate reimbursement, and lack of patients' confidence in pharmacists were barriers to pharmacists providing diabetes counselling **Recommendations:** Add diabetes training programs to pharmacist's educational curriculum Collaboration between pharmacists and physicians to improve diabetes care	Pharmacists' perception of diabetes management Acceptable response rate	Data included perceptions of pharmacists from one region (Abu Dhabi)	HCP perception of diabetes manage-ment	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Grace et al. (2017) (USA)	To address the need for comprehen-sive, coordinated care of geographic-ally dispersed veterans Seeking BS at a single VA medical centre	Literature review Retrospective review of a prospective database of patients who underwent BS at a single VA medical centre in 2009 Review of the electronic health record to establish rates of follow-up in patients who had surgery before and after the establishment of a collaborative, integrated, multidisciplinary bariatric clinic Patients in both groups instructed to follow-up at 2 weeks, 2 months, 6 months, and 12 months in the first year after surgery The clinic evaluates, educates, treats, and monitors patients referred for BS locally and from distant facilities. The bariatric team is composed of a bariatrician, dietitian, psychologist, physical therapist and surgeon	Of 221 patients who underwent BS, most were male (78%) with a mean age of 53 years 97 patients (44%) had surgery before institution of the bariatric clinic, and 124 (56%) had surgery and were subsequently followed by the dedicated, integrated, multidisciplinary clinic Improved bariatric clinic follow-up rates after institution of an integrated, multidisciplinary clinic at a single VA medical centre Sporadic consultation to specialists, such as a psychologist and/or nutritionist, but not a comprehensive evaluation by a team of practitioners with a specific interest and expertise in obesity The level of involvement of each healthcare provider member of the team is highly variable, absent dedicated personnel Partial or complete remission of hypertension and T2DM were similar in both groups, which may be a reflection of the beneficial metabolic effect of the operation itself, along with the effective PHC network in the VA, rather than the MDT Significant increase in the rates of follow-up after implementation of a specialty clinic, despite this representing a cohort with a greater proportion of patients who travelled >100 miles (corresponding to 2–3 h of travel time to the bariatric centre)	-	-	MDT care	V

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Hamdy et al. (2018)	To describe the components of a practical and effective multidisciplinary approach to weight management for patients with T2DM and obesity in real-world clinical practice	Literature review	A multidisciplinary weight management program was shown to result in long-term weight reduction for 5 years in real world clinical practice	-	-	MDT care	V

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Hirpara et al. (2016) (Canada)	To assess Canadian general surgeons' knowledge and awareness of BS and the perceived availability of resources to manage BS patients, with the ultimate goal of identifying areas for improvement in training, continuing medical education and resource development	Quantitative Survey Practicing surgeons, fellows and residents from 2 large surgical conferences were invited to join a survey from September to December 2012 167 questionnaires via Survey Monkey were completed, representing an estimated 10% response rate based on society membership Ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration	Most of non-bariatric general surgeons had referred a patient for BS in the prior year Most surgeons agreed BS results in prolonged weight loss Half of the participants felt confident explaining the procedure Approximately half of the participant surgeons initiate conversations about BS with eligible patients More than half of these surgeons were not confident to manage bariatric surgery complications Less than half of the participants reported having adequate resources and equipment to manage morbidly obese patients Most of the surgeons reported the need to train surgeons during their residency for the management of BS patients	BS may not be offered to many patients who may benefit from it Many non-bariatric surgeons may feel uncomfortable providing care to bariatric patients and experience a relative lack of resources and funding to adequately treat this patient population	Self-selection bias, owing to the voluntary nature of the study sample may undermine generalisability of study results, which may not apply to all general surgeons practicing in Canada Recall bias since the results represent self-reporting by surgeons Findings may not be representative of surgeons working at community, rural or non-academic sites due to the majority of the participants working in urban area Small number of bariatric surgeons, limiting interpretation of the comparative analysis	HCP perception of BS	III-A/B

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Jumbe & Meyrick (2018) (UK)	To explore patients and health practitioners' views around the nature of psychological support	Qualitative Face-to-face interview 18 Participants (10 patients & 8 obesity surgery practitioners) This study received UK National Research Ethics and local R&D approvals before starting recruitment in a regional National Health Service Bariatric Service	Practitioners reported limited provision of standardised post-operative psychological care Practitioners focused on acute delivery of obesity intervention and neglected long-term issues **Recommendations:** The need for psychological care when managing obesity to explain that the surgery is not about attaining an ideal weight but addressing disordered eating behaviour 'Degree of disordered eating' and 'psychological distress' are more appropriate outcome measures for patients seeking obesity management	The first qualitative study to explore patients and practitioners' post-bariatric experiences and perspectives Qualitative methodology captured rich and detailed experiential information	The patient sample only included one man, potentially limiting the male perspective of the post-bariatric patient experience Participants are from one regional bariatric service	Patient perception vs HCP perception on BS	III-A/B
Jung et al. (2016) (Germ-any)	To examine the effect of stigma and knowledge on recommend-dation of WLS and referral to a surgeon by GPs and internists	Quantitative, survey design 201 GPs and internists Approval from the Ethics Committee of the University of Leipzig was obtained	Physicians did not recommend WLS because they believed it was an easy management for weight loss Physicians believe that diet and exercise could reduce weight, and that obesity is patients' fault Practitioners who are less knowledgeable of bariatric surgery are reluctant to refer patients for surgery	Identified the presence of stigma in physicians	Small response rate Study design	HCP perception on BS	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Fan et al. (2020) (China)	To study Chinese nurses' knowledge of obesity and metabolic disorders, and attitudes towards BS, and to improve their capability of work in this new discipline	Quantitative Cross-sectional 5/5,311 responded to the survey in April 2018 A questionnaire was designed to investigate nurses' demographic, knowledge and attitude towards obesity, weight loss, and BS The study was approved by the institutional review boards of the hospital	Nurses lacked knowledge about the specific classifications of BMI Nurses had limited knowledge of the impact of obesity on other health aspects such as carcinoma, gastroesophageal reflux diseases and psychological disorders Most nurses believed weight loss can be achieved through exercise and diet Minority of nurses knew that surgery can be an option for weight loss, and less than half of participant nurses had heard of gastric bypass and sleeve gastrectomy Nurses' main concerns about bariatric surgery are postoperative complications and side effects Less than half of participant nurses would recommend BS to their family or friends due to their lack of confidence in the surgical outcome. But most of the nurses would recommend BS to patients Surgical nurses are more optimistic towards BS	First of its kind to explore the knowledge and attitudes of Chinese nurses towards obesity and BS in China Large sample size that could be generalised High response rate (91%)	Survey design Self-reported data	HCP perception on BS	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Maneze et al. (2014) (Aust-ralia)	To explore diabetic patients' experience of multidiscip-linary care, in particular their perceptions, perceived barriers and facilitators	Qualitative 13 patients asked what they thought of their diabetes care, the barriers and enhancers, and the coordination and communication between the patient and health professionals and among their healthcare team members Patients completed a brief demographic questionnaire assisted by the researcher. Interviews completed between February and August 2010 The study was approved by the Sydney South West Area Health Service and University of New South Wales Human Research Ethics Committees	Multidisciplinary care was poorly coordinated with poor communication among the members of the team Different health professionals were inefficient in scheduling various appointments and finding time Team members had conflicting information, and often received too much information Health professionals focus on their own area of expertise instead of working as a multidisciplinary team There was limited communication and coordination between HCPs and was mostly via referral letters	Barriers in providing T2DM were identified	Low sample size Homogeneous sample of socioeconomically disadvantaged population Single centre	MDT care	III-A/B

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Marshall et al. (2020)	To evaluate the effect of preoperative and/or post-operative support for adults who elect bariatric surgery delivered by an MDT on post-operative body composition, mental health, co-morbidities, quality of life, and side effects	Systematic review and meta-analysis 18 studies included	MDT approach was effective on cardiac health, depression, anxiety, quality of life but not on lipids and glycaemic levels **Recommendations:** The need to provide preoperative and/or post-operative lifestyle, nutrition, or psychology counselling and/or physical activity for improved mental and physical health	How data were analysed	-	MDT approach	I-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Martini et al. (2018) (France)	To provide a picture of the actual knowledge of GPs about BS	Quantitative-survey design conducted in 2017 288 GPs (12.9% response rate)	The majority of GPs already take care of BS patients in their current practice Almost half of respondents had never received specific training in obesity management GPs lack knowledge of the benefits and risks of the different bariatric surgeries. GPs do not refer patient for BS due to the lack confidence in educating patients and the lack of appropriate follow-up care GPs are willing to receive more education on BS GPs overestimate morbidity and mortality rates of BS and underestimate its benefits on weight loss and comorbidities Only few GPs knew about the effectiveness of BS on T2DM	First survey to address the topic of the involvement of GPs in the management of BS patients in France	Study design Low response rate Self-selection bias	HCP perception on BS	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Menez et al. (2013) (USA)	To determine and compare the perspectives of the general public and HCPs on obesity and its treatment in rural WV and Baltimore	Quantitative Survey from June 2010 to September 2010 Respondents from the general public (WV: n = 200; Baltimore: n = 171) and HCPs (WV: n = 25; Baltimore: n = 15) The study was approved by the Johns Hopkins School of Medicine Institutional Review Board The survey was sent to medical professionals in a number of different fields (nurses, nurse practitioners, and physician assistants), but all HCPs who responded were physicians	HCPs believe that obesity treatments depend on the place you live in rural or urban Less education may result in less insight into the scope or severity of the problem of obesity Physicians were more serious in treating patients who wanted to discuss weight loss HCPs were less optimistic about patients following proper diet and exercise in rural areas **Recommendations:** In more rural areas, HCPs should emphasise proper diet and exercise for both patients and patients' relatives, with the understanding that patients in rural areas are aware that obesity is a problem in their families In more urban areas, HCPs may have greater success in managing obesity with their patients by focusing on healthy eating and balancing one's diet, given the survey results showing an emphasis on the importance of access to healthy foods for obesity management Effective patient–physician communication is needed to make an impact on patients' perception and their ability to deal with their obesity	The comparison between rural and urban setting showed that the priority in obesity management depended on the population being treated	Cross-sectional survey design Survey was more accessible in terms of location and to physicians than other HCPs	HCP perception on obesity manage-ment	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Petrin et al. (2017) (USA)	To assess beliefs, practice, and knowledge regarding obesity management of family physicians, internists, OB/GYN physicians, and nurse practitioners	Quantitative Web-based survey DocStyles 2015 (131 questions) 77% response rate with a total of 1,501 providers participating STRATA software ANOVA test	The majority of PCPs, OB/GYNs and NPs believed that obesity counselling is a shared responsibility between themselves and the patient, with no significant differences between provider types NPs more likely than their colleagues to report a need for additional training, more tools and advice about ethnic group differences when managing patients with obesity The language used by HCPs encourage or discourage patients with obesity to return to the clinic	Large number of response rate	Survey design Lack of HCPs such as dietitians, psychologists among the participants	HCP perception of obesity manage-ment	III-A
Nimeri et al. (2017) (Middle East Region)	To present the current peri-operative practice of BS in the Middle East region	Quantitative A questionnaire was designed to study trends of peri-operative care in BS. It was sent to members of the PASMBS The survey was loaded on Survey Monkey and a link sent to complete the survey on the PASMBS Telegram group The survey was sent to all the members of the PASMBS Telegram group in 2015 (93/105 surgeons)	An MDT requires a team of dietitians, psychologists, bariatric coordinators, and bariatric physicians to help evaluate and follow BS patients in the long term after surgery MDT approach is costly and requires a committed effort from the bariatric surgeon and hospital administration Lack of an MDT would make long-term follow-up visit unsuccessful. Most surgeons did not refer patients for psychological assessment or screened for obstructive sleep apnoea **Recommendations:** Educate surgeons about the importance of following international guidelines regarding the MDT for BS programs to be able to deliver the best peri-operative care to patients	Included countries in the Middle East Region and identified the absence of a regional guideline and the necessity of developing one to optimise bariatric peri-operative care	Small sample size (not generalisable) Study design (snapshot)	MDT care	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Rebibo et al. (2017) (France)	To describe MDT meetings and assess their possible impact on the post-operative course	Literature review A retrospective review of a prospective database of patients wishing to undergo BS From April 2009 to March 2013, 49 MDT meetings were held representing 1,099 case files (816 patients) The local institutional review board (Comitéde Protection des Personnes Nord Ouest II) approved this study	All patients needed to undergo preoperative assessments including psychological assessment, endocrine status, carbohydrate tolerance, 6 months of nutritional support, gastroscopic screening, systematic lung assessment MDT meetings included specialist bariatric surgeon, a psychiatrist, an endocrinologist, and a nutritionist. Some meetings required an anaesthesiologist, a gastroenterologist, or a cardiologist. These guidelines recommended the establishment of MDT meetings attended by obesity specialists to validate or refuse BS, define preoperative management, and check the eligibility of patients for surgical treatment of obesity	-	-	MDT care	V
Ritholz et al. (2011) (USA)	To explore physicians' perceptions of the MDT T2DM treatment team	Qualitative Semi-structured interviews In-depth interviews with endocrinologists and PHC physicians who treat patients with T2DM 19 physicians (74% endocrinologist and 26% PHC physicians)	Physicians and diabetes educators in an MDT spent more time with patients for assessment and treatment purposes An MDT team also included specialists for patients with mental health concerns or diabetes complications Physical space, providers' schedules, and inconsistent team membership are organisational factors that hinder team communication and effectiveness **Recommendations:** The need for the MDT approach to improve A1C and LDL cholesterol results, adhere to medical guidelines, patients' satisfaction, and health outcomes	Understanding physicians' views on MDT approach Sample size	Obtaining ethics approval not mentioned Homogeneous sample white non-Hispanic physicians from a single centre Perceptions of other team members in the MDT were not explored Bias in answers due to social desirability	MDT care	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Sarwar et al. (2012) (USA)	To investigate physicians' attitudes about referring pati ents with T2DM for BS	Quantitative Survey 93 respondents, 42 (59.2%) were PHC physicians (internists or family practitioners) and 20 (28.2%) were endocrinologists (Ethics not mentioned)	Few physicians were unaware of BS complications Physicians lack knowledge about the different surgical interventions Some physicians believed they did not have adequate resources to provide good quality long-term bariatric care Few physicians believed they were competent to address the medical complications of BS	Respondents reflect physicians who care for patients with diabetes (92.9%)	Study design Low response rate (27.4%) Respondents might have been biased towards favourable views of BS compared with the non-respondents Included only physicians who manage people with diabetes	HCP perception on T2DM for BS	III-A
Sebiany (2013) (KSA)	To determine the level of knowledge of PHC physicians and the barriers perceived in the management of overweight and obesity in the Eastern Province of Saudi Arabia	Quantitative A cross-sectional study 149 physicians surveyed Ethical considerations were considered by obtaining approval to conduct the study and assuring all participants of confidentiality	Minority of participants received training in obesity management Few participants used medical journals for information, which meant the lack of the proper use of literature in managing overweight and obesity resulting in poor training and the lack of proper resources Most of physicians were knowledgeable on obesity measures Inability of physicians to give weight reduction medication to their patients despite the inefficiency of weight-loss programs Majority of physicians aware of the factors that contribute to obesity such as genetic, hormonal abnormalities, and psychological status	Barriers identified by PHC providers against the management of obesity were related to a lack of PHC administrative support and poor healthcare system, lack of training, high failure rate in weight reduction, lack of facilities, and lack of dietitians, time constraints, and poor patient adherence to management plans	Cross-sectional design Self-administered questionnaire Limited to the population of PHC physicians in Dammam and Al-Khobar cities	HCP perception on obesity manageme nt	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Simon & Lahiri (2018) (USA)	To identify provider recommendations and barriers in obesity management in a multicentre academic health system with extensive weight-loss management resources	Quantitative Online survey (26-questions) utilising Survey Monkey in May 2017 via email to 430 identified providers, only 111 (26%) responded The study was approved by the health system's Institutional Review Board	Less than half of the healthcare providers discuss weight-loss options Family medicine and endocrinologist were more likely to address weight-loss options Lack of time was the most common reason for not addressing obesity Minority reported that weight-loss advice would not change patient behaviour Only few respondents reported that insufficient knowledge was a barrier in obesity management Majority of respondents attended formal lectures on obesity Lack of knowledge on weight-loss medication discouraged providers to prescribe it as a treatment option Lack of knowledge of providers on the safety of bariatric surgeries for morbidly obese patients. Endocrinologist were the most specialist that referred patients for obesity management	Findings included adverse effects, comorbidities, and cost considerations for the patient	Small sample size and low response rate. The questionnaire was not validated	HCP perception on obesity manage-ment	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Szafran et al. (2019) (Canada)	To examine the extent to which family physicians routinely collaborate with other health professionals in the care of patients with T2DM, comparing those who are part of an inter-professional PCN to those who are not (non-PCN)	Quantitative Cross-sectional study 170 (34%) family physicians responded to the survey; 127 were PCN physicians and 41 non-PCN physicians (2 not recorded) Initial mail-out conducted in September 2013, responses received until January 2014 The study was approved by Research Ethics Board 2, University of Alberta	While there is opportunity to increase interprofessional team collaboration in the care of patients with T2DM, other health professionals and a willingness to overcome traditional professional roles is needed Physicians perceive that an interprofessional team would allow them to delegate patient education to nurses and diabetes educators, and the monitoring and adjustment of diabetic medications to pharmacists Physicians trust specialists but do not have confidence in other health professionals with medication management of patients with T2DM	Physicians' perceptions of interprofessional collaboration in T2DM care	Study design Small response rate Selection bias	MDT care	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Tork et al. (2015) (USA)	To evaluate perceptions of PHC physicians of the role of BS in the management of obese patients and to identify possible barriers to treatment	Quantitative Survey (10-item) 57 physicians completed the survey (response rate 35.4%) The study was approved by the Institutional Review Board of The Good Samaritan TriHealth Hospital	Physicians were reluctant to refer patients for bariatric surgery due to the surgery's high cost and patients' insufficient insurance coverage Physicians were unaware of the follow-up services offered by the centre which included dietitian, exercise therapists, psychologist & support groups Physicians lack confidence in treating and managing obese patient due to their lack of knowledge about BS, fears of complication and possible death **Recommendations:** The need for a multidisciplinary approach in the management of bariatric patients for better outcomes and to improve quality of life	Limited knowledge of physicians on follow-up care after BS	Small sample size Low response rate Study design	HCP percep-tion on BS	III-A
Waheedi et al. (2017) (Kuwait)	The aim of this study was to explore the views of PHC physicians on medication non-adherence among T2DM patients	Qualitative A descriptive qualitative study performed using one-on-one semi-structured interviews of 21 PHC physicians Ethical approval obtained from the research ethics committee of the Ministry of Health, State of Kuwait	Physicians think that patients' non-adherence to medication is due to insufficient patient knowledge about diabetes as a disease, and their lack of knowledge on medications and its side effects Physicians also believe that patients' nonadherence to their medication is due to the incorrect information provided by family members and friends **Recommendations:** Giving more education in the clinic was the most frequent intervention suggested by participants in order to provide a solution for the lack of understanding and low awareness among patients	Sample size of 21 physicians Semi-structured face-to-face interviews Demographic diversity in physicians	Reporting bias	HCP perception of patients' T2DM manage-ment	III-A

Authors (country)	Aim	Method & Participants	Findings	Strengths	Weaknesses	Link to Study	Level*
Zacharoulis et al. (2017) (Greece)	To assess doctors' knowledge, current conceptions, and clinical practice regarding obesity and BS	Quantitative A self-administered 24-item survey was written based on the expertise of bariatric surgeons at an academic centre which included self-reported knowledge regarding BS, awareness of existing bariatric centres, and referral patterns 300 doctors with varying medical specialties in public and private practice in the Thessaly region of Greece participated The protocol was approved by the Institutional Review Board of the University of Thessaly, where the survey was created	Minority of physicians were knowledgeable about BS and its existence in their healthcare facility Reasons behind physicians not referring patients for bariatric surgery were patients' lack of interest in BS, patients' refusal, increased operative fees, lack of doctors' confidence in BS, and lack of bariatric centres Physicians who were least interested in referring patients for bariatric surgery were orthopaedics endocrinologists, gastroenterologists, pulmonologists, gynaecologists, physicians, and cardiologists	Identified barriers for referrals to BS 60% response rate	Survey design Self-reporting questionnaire Population of doctors in Thessaly only	HCP perception on BS	III-A

Note: * Level refers to JHNEBP research evidence appraisal tool (see Appendix 1) and the evidence level and quality guide (see Appendix 2)
T2DM = type 2 diabetes mellitus; HCP = healthcare professional; MDT = multidisciplinary team; PHC = primary health care; UAE = United Arab Emirates; BMI = body mass index; BS = bariatric surgery; UK = United Kingdom; GP = general practitioner; VA = veterans affairs; WLS = weight-loss surgery; WV = West Virginia; NP = nurse practitioner; PASMBS = Pan Arab Society for Metabolic and Bariatric Surgery; OB/GYN = obstetrician-gynaecologists; PCN = primary care network

Appendix 4: Interview questions

'Health Care Professionals included: physicians, endocrinologists, surgeons, nurses, dietitians, pharmacists, physiotherapists, psychologists'

1. **How do you as a (discipline) approach the management of people with type 2 diabetes?**

- Would this include bariatric surgery (If not suggested)?
- When is bariatric surgery introduced as a treatment option in people with type 2 diabetes?
- What were the options offered for obesity management?
- When do patients seek bariatric surgery?
- Who do people with type 2 diabetes wanting to have bariatric surgery go to?

2. **What do you expect from other health care professionals when dealing with people with type 2 diabetes (or bariatric surgery)? (i.e. referrals, investigations, appointments, plan…etc)**

Are they met?

- If yes,
  - which disciplines do you communicate with?
  - what would you like to see added or included when communicating with other health care professionals?
- If no,
  - What would be a barrier?
  - What would you propose to overcome this barrier?

3. **Could you tell me what you understand a multidisciplinary team to be?**

- Who do you think are key members in a multidisciplinary team?
- What would they contribute to the team?
  - Is there any (education/ medicine/ advice/ treatment) offered to your patients as a (discipline)?
  - What about the role of a (discipline not mentioned) in a multidisciplinary team?
- Is there a multidisciplinary team in this hospital?
  - If yes (who do they manage?)
  - If no (what do you think are the barriers to having a multidisciplinary team?)

4. **What do you think of working in a multidisciplinary team for managing people with T2DM and bariatric surgery?**

- What would be the disadvantages of having a multidisciplinary team for type 2 diabetes (or bariatric surgery)?
- What would be the advantages of having a multidisciplinary team for type 2 diabetes (or bariatric surgery)?

Appendix 5: Flinders University Social and Behavioural Research Human Ethics Committee Approval

8523 ETHICS approval notice (12 February 2020)

Human Research Ethics <human.researchethics@flinders.edu.au>
Wed 12/02/2020 9:55 AM

To: Alanoud Alobaidly <alob0025@flinders.edu.au>; Wendy Abigail <wendy.abigail@flinders.edu.au>; Pauline Hill <pauline.hill@flinders.edu.au>; Rebecca Feo <rebecca.feo@flinders.edu.au>

Dear Alanoud,

Your conditional approval response for project 8523 was reviewed by the Deputy Chair of the Social and Behavioural Research Ethics Committee (SBREC) and was **approved.** The ethics approval notice can be found below.

APPROVAL NOTICE

Project No.:	**8523**
Project Title:	What perceptions and beliefs do health care professionals in Kuwait have of multidisciplinary teams in the management of people with type 2 diabetes mellitus including bariatric surgery?
Principal Researcher:	Mrs Alanoud Alobaidly
Email:	alob0025@flinders.edu.au
Approval Date:	12 February 2020
Ethics Approval Expiry Date:	**31 August 2022**

The above proposed project has been **approved** on the basis of the information contained in the application, its attachments and the information subsequently provided.

Appendix 6: Approval to conduct research in the hospital in Kuwait

وبه نستعين

محظور

رئاسة الأركان العامة للجيش

هيئة الخدمات الطبية

مكتب رئيس الهيئة

الرقم : /

التاريخ : /2020

From: Abdullah M. M. Alsabah
Address: Medical Services Authority, Ministry of Defence, Kuwait
Email: a.m.alsabah29@kuwaitarmy.gov.kw

Date: 21 January 2020

Dear Flinders Social and Behavioural Research Ethics Committee,

The purpose of this letter is to grant Alanoud Alobaidly, at Flinders University South Australia, Australia permission to conduct research at Jaber Alahmed Armed Forces Hospital, Medical Services Authority, Kuwait. The project titled, "The perceptions and beliefs of Health care professionals of multidisciplinary teams in the management of people with type 2 diabetes mellitus including bariatric surgery".

I support this effort and I am ready to provide the necessary assistance for the completion of her project.

Sincerely,

Abdullah Alsabah

Chief of Medical Services Authority
Ministry of Defence

وبه نستعين

كويت جديدة
NEWKUWAIT

STATE OF KUWAIT
MINISTRY OF DEFENCE

دولـــــة الكـويـت
وزارة الـــدفـــــاع

Ministry of Defence
GHQ Armed Forces
Medical Services Authority
Jaber Al Ahmed Armed Forces Hospital

1st Lieutenant. KHALID AL ROUMI
Director of Nursing Department
Jaber Al Ahmed Armed Forces Hospital
Ministry of Defence
State of Kuwait

Dear Flinders University Social and Behavioural Research Ethics Committee

It is my understanding that Al Anoud Al Obaidly will be conducting her PhD research project at Jaber Al Ahmed Armed Forces Hospital on "The Perceptions and Beliefs of Health Care Professionals of Multidisciplinary Teams in the Management of People with Type 2 Diabetes Mellitus Including Bariatric Surgery". Mrs. Al Anoud has informed me of the design of the study as well as the targeted population.

I support this effort and I am ready to provide any assistance necessary for the successful implementation of her project. If you have any questions, please do not hesitate to call. I can be reached at (+965 24921177).

Sincerely,

1st Lieutenant. KHALID AL ROUMI
Director of Nursing Department
Jaber Al Ahmed Armed Forces Hospital

Appendix 7: Information Sheet

Dr Wendy Abigail

College of Nursing and Health Sciences
GPO Box 2100
Adelaide 5001
Australia
Email: wendy.abigail@flinders.edu.au

CRICOS Provider No. 00114A

Flinders UNIVERSITY

INFORMATION SHEET

(for Participants – Health care professionals)

Title: 'The Perceptions and Beliefs of Health Care Professionals of Multidisciplinary Teams in the Management of People with Type 2 Diabetes Mellitus including Bariatric Surgery'

Researcher:
Mrs Alanoud Alobaidly
College of Nursing and Health Sciences
Flinders University
Email: alob0025@flinders.edu.au

Supervisors:
Dr Wendy Abigail
College of Nursing and Health Sciences
Flinders University
Email: wendy.abigail@flinders.edu.au

Dr Pauline Hill
College Nursing and Health Sciences
Flinders University
Email: pauline.hill@flinders.edu.au

Dr Rebecca Feo
College of Nursing and Health Sciences
Flinders University
Email: rebecca.feo@flinders.edu.au

Description of the study:
This project is entitled *'The Perceptions and Beliefs of Health Care Professionals of Multidisciplinary Teams in the Management of People with Type 2 Diabetes Mellitus including Bariatric Surgery*. This project will investigate the perceptions and beliefs of health care professionals of multidisciplinary teams in managing people with type 2 diabetes mellitus including bariatric surgery. This project is supported by the Flinders University College of Nursing and Health Sciences.

Purpose of the study:
This project aims to:

- Understand the meaning of a multidisciplinary team approach as perceived by the health care professionals at the Jaber Alahmed Armed Forces Hospital
- Investigate the expectations of health care professionals at Jaber Alahmed Armed Forces Hospital from each other when managing people with type 2 diabetes mellitus including bariatric surgery.
- Explore how health care professionals at Jaber Alahmed Armed Forces Hospital provide management to people with type 2 diabetes mellitus including bariatric surgery.

What will I be asked to do?
You are invited to attend:

1. Face to face, telephone or Skype interview with a researcher who will ask you some questions regarding your views about multidisciplinary teams in managing people with type 2 diabetes mellitus including bariatric surgery. The participant is free to choose of how they want to be interviewed.

Participation is entirely voluntary. The interview will take about 30-60 minutes. The interview will be audio recorded using a digital voice recorder to help with reviewing the results. Once recorded, the interview will be transcribed (typed-up) and stored as a computer file accessible by the researcher only.

and/or

2. Observation of your professional activity at 2-3 of your clinic sessions.

Participation is entirely voluntary. I will be asking permission from the patient whose clinic session I will be sitting on in and obtain their consent before their session starts. If the patient does not consent, then the researcher will not sit in their clinic session. This will not have any effect or consequence on the patients' care or service provided to them.

What benefit will I gain from being involved in this study?
There will be no direct benefit to you. However, sharing your views might assist with the improvement of patient care and the planning and delivery of future patient education programs.

Will I be identifiable by being involved in this study?
Anonymity cannot be guaranteed, only the researcher will know who has participated. However, any identifying information (e.g., your name) will be removed from written transcripts or replaced with a pseudonym. The typed-up file will be stored on a password protected computer that only the researcher will have access to. Your comments will not be linked directly to you. No information that identifies you will be published or made public by the researcher.

Are there any risks or discomforts if I am involved?
The researcher anticipates few risks from your involvement in this study; however given the nature of the project some participants could experience emotional discomfort. If any emotional discomfort is experienced, please contact the social worker available on the ground floor for support and counselling, whom are available daily from 7am to 2pm; or your GP for a referral outside the hospital. If you have any concerns regarding anticipated or actual risks or discomforts, please raise them with the researcher.

How do I agree to participate?
To participate, you will need to be: over 18 years old, a physician, surgeon, endocrinologist, nurse, pharmacist, dietitian, psychologist or physiotherapist working at Jaber Alahmed Armed Forces Hospital.

Participation is voluntary. You may answer 'no comment' or refuse to answer any questions, and you are free to withdraw from the interview at any time without effect or consequences. A consent form will be provided for you to sign before starting the interview.

If you agree to participate, please contact me on **(phone number)** to agree on a location and time for the interview. I will also be available at the Staff Development Unit (**from Date to Date) Sunday to Thursday**, **8am to 2pm**.

How will I receive feedback?
Feedback about the outcomes of the project will be published at a peer-reviewed journal, conference or local forum or seminar which will be shared with the Staff Development Unit once it becomes available.

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number 8523). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

Dr Wendy Abigail

College of Nursing and Health Sciences
GPO Box 2100
Adelaide 5001
Australia
Email: wendy.abigail@flinders.edu.au

CRICOS Provider No. 00114A

INFORMATION SHEET

(for Patients and those Attending)

Title: 'The Perceptions and Beliefs of Health Care Professionals of Multidisciplinary Teams in the Management of People with Type 2 Diabetes Mellitus including Bariatric Surgery'

Researcher:
Mrs Alanoud Alobaidly
College of Nursing and Health Sciences
Flinders University
Email: alob0025@flinders.edu.au

Supervisors:
Dr Wendy Abigail
College of Nursing and Health Sciences
Flinders University
Email: wendy.abigail@flinders.edu.au

Dr Pauline Hill
College Nursing and Health Sciences
Flinders University
Email: pauline.hill@flinders.edu.au

Dr Rebecca Feo
College of Nursing and Health Sciences
Flinders University
Email: rebecca.feo@flinders.edu.au

Description of the study:
This project is entitled *'The Perceptions and Beliefs of Health Care Professionals of Multidisciplinary Teams in the Management of People with Type 2 Diabetes Mellitus including Bariatric Surgery*. This project will investigate the perceptions and beliefs of health care professionals of multidisciplinary teams in managing people with type 2 diabetes mellitus including bariatric surgery. This project is supported by the Flinders University College of Nursing and Health Sciences.

Purpose of the study:
This project aims to:

- Understand the meaning of a multidisciplinary team approach as perceived by the health care professionals at the Jaber Alahmed Armed Forces Hospital.
- Investigate the expectations of health care professionals at Jaber Alahmed Armed Forces Hospital from each other when managing people with type 2 diabetes mellitus including bariatric surgery.
- Explore how health care professionals at Jaber Alahmed Armed Forces Hospital provide management to people with type 2 diabetes mellitus including bariatric surgery.

What will I be asked to do?
You will be asked to provide permission for me to observe your health care professionals during your consultation. Participation is entirely voluntary. If you agree, I will sit in on your consultation. If do not agree, then I will leave the room. This will not have any effect or consequence on your care or service provided to you.

What benefit will I gain from being involved in this study?
There will be no direct benefit to you. However, allowing me to observe the health care professional might assist with the improvement of patient care and the planning and delivery of future patient education programs.

Will I be identifiable by being involved in this study?
No. This study is about the health care professionals.

Are there any risks or discomforts if I am involved?
The researcher does not anticipate any risks from your involvement in this study.

How do I agree to participate?
To participate, you will need to be 18 years and above; a patient of a physician, surgeon, endocrinologist, nurse, pharmacist, dietitian, psychologist or physiotherapist at Jaber Alahmed Armed Forces Hospital.

Participation is voluntary. You are free to ask me to leave at any time without effect or consequences. A consent form will be provided for you to sign before your consultation starts.

How will I receive feedback?
Feedback about the outcomes of the project will be published at a peer-reviewed journal, conference or local forum or seminar which will be shared with the Staff Development Unit once it becomes available.

Thank you for taking the time to read this information sheet and we hope that you will accept our invitation to be involved.

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee (Project number 8523). For more information regarding ethical approval of the project the Executive Officer of the Committee can be contacted by telephone on 8201 3116, by fax on 8201 2035 or by email human.researchethics@flinders.edu.au

الدكتور ويندي أبيغيل

كلية التمريض والعلوم الصحية
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ورقة المعلومات
(للمرضى والحاضرين)

العنوان: "تصورات ومعتقدات العاملين في مجال الرعاية الصحية للفرق متعددة التخصصات في إدارة الأشخاص المصابين بداء السكري من النوع 2 بما في ذلك جراحة السمنة"

الباحث:
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وصف الدراسة:
هذا المشروع بعنوان "تصورات ومعتقدات العاملين في مجال الرعاية الصحية للفرق متعددة التخصصات في إدارة الأشخاص المصابين بداء السكري من النوع 2 بما في ذلك جراحة السمنة. سوف يبحث هذا المشروع في تصورات ومعتقدات العاملين في مجال الرعاية الصحية لفرق متعددة التخصصات في إدارة الأشخاص المصابين بداء السكري من النوع 2 بما في ذلك جراحة لعلاج البدانة. يتم دعم هذا المشروع من قبل كلية التمريض والعلوم الصحية بجامعة فلندرز.

الغرض من الدراسة:
يهدف هذا المشروع إلى:

- فهم معنى نهج فريق متعدد التخصصات كما يراها اختصاصيو الرعاية الصحية في مستشفى جابر الأحمد للقوات المسلحة.
- ابحث عن توقعات أخصائي الرعاية الصحية في مستشفى جابر الأحمد للقوات المسلحة من بعضهم البعض عند إدارة المصابين بداء السكري من النوع 2 بما في ذلك جراحة لعلاج البدانة.
- استكشف كيف يوفر اختصاصيو الرعاية الصحية في مستشفى جابر الأحمد للقوات المسلحة الإدارة للأشخاص الذين يعانون من داء السكري من النوع 2 بما في ذلك جراحة لعلاج البدانة.

ماذا سوف يطلب مني القيام به؟
سيتم طلب إذنك لمراقبة النشاط المهني لأخصائي الرعاية الصحية في جلسات عيادتك. المشاركة طوعية تماما. أطلب الإذن للجلوس في جلسة التشاور الخاصة بك. سأطلب موافقتك قبل بدء الجلسة إذا وافقت. إذا لم يتم الحصول على موافقتك، فسوف أترك المجال. لن يكون لهذا أي تأثير أو نتيجة على رعايتك أو الخدمة المقدمة لك.

ما الفائدة التي سأربحها من المشاركة في هذه الدراسة؟
لن تكون هناك فائدة مباشرة لك. ومع ذلك، فإن السماح بمراقبة أخصائي الرعاية الصحية قد يساعد في تحسين رعاية المرضى وتخطيط وتنفيذ برامج تثقيف المرضى في المستقبل.

هل يمكنني التعرف عليها من خلال المشاركة في هذه الدراسة؟
قد يتم التعرف عليك بسبب الدراسة التي تجرى أثناء استشارتك. ومع ذلك، فإن هذه الدراسة تدور حول تصورات ومعتقدات مهني الرعاية الصحية وأي معلومات تعريف (مثل اسمك) ستتم إزالتها من النصوص المكتوبة أو استبدالها بأسماء مستعارة. سيتم تخزين ملف الطباعة على جهاز كمبيوتر محمي بكلمة مرور والذي لن يتمكن من الوصول إليه إلا للباحث. لن تكون تعليقاتك مرتبطة مباشرة بك. لن يتم نشر أو نشر أي معلومات تحدد هويتك من قبل الباحث.

هل هناك أي مخاطر أو إزعاج إذا كنت مشتركًا؟
يتوقع الباحث مخاطر قليلة من مشاركتك في هذه الدراسة؛ ولكن بالنظر إلى طبيعة المشروع، يمكن لبعض المشاركين تجربة الانزعاج العاطفي. إذا واجهت أي إزعاج عاطفي، فيرجى الاتصال بالعامل الاجتماعي الموجود في الطابق الأرضي للحصول على الدعم والمشورة، والمتوفر يوميًا من 7 صباحًا إلى 2 مساءً؛ أو طبيبك للحصول على إحالة خارج المستشفى. إذا كان لديك أي مخاوف بشأن المخاطر أو المضايقات المتوقعة أو الفعلية، فيرجى رفعها مع الباحث.

كيف أوافق على المشاركة؟
للمشاركة، ستحتاج إلى 18 عامًا فما فوق؛ مريض طبيب أو جراح أو أخصائي غدد صماء أو ممرض أو صيدلي أو أخصائي تغذية أو أخصائي نفسي أو أخصائي علاج طبيعي يعمل في مستشفى جابر الأحمد للقوات المسلحة.

المشاركة طوعية. أنت حر في الانسحاب من المقابلة في أي وقت دون تأثير أو عواقب. سيتم تقديم نموذج موافقة لتوقيعك قبل بدء المقابلة.

كيف سوف أتلقى ردود الفعل؟
سيتم نشر التعليقات حول نتائج المشروع في مجلة أو مؤتمر أو ندوة أو منتدى محلي يتم استعراضه من قبل الأقران وسيتم مشاركته مع وحدة تنمية قدرات الموظفين بمجرد توفره.

تمت الموافقة على هذا المشروع البحثي من قبل لجنة أخلاقيات البحوث الاجتماعية والسلوكية بجامعة فلندرز في جنوب أستراليا (رقم المشروع 8523). للاستفسارات المتعلقة بالموافقة الأخلاقية لهذا المشروع ، يرجى الاتصال بالمسؤول التنفيذي للجنة عبر الهاتف على +61882013116 أو البريد الإلكتروني human.researchethics@flinders.edu.au

Appendix 8: Consent Forms

CONSENT FORM FOR PARTICIPATION IN RESEARCH

(Interview with Health care professionals)

The perceptions and beliefs of health care professionals of multidisciplinary teams in the management of people with type 2 diabetes mellitus including bariatric surgery

I .....being over the age of 18 years hereby consent to participate as requested in the semi-structured interview for the research project with the title listed above.

1. I have read the information provided.
2. Details of procedures and any risks have been explained to my satisfaction.
3. I agree to audio recording of my information and participation.
4. I am aware that I should retain a copy of the Information Sheet and Consent Form for future reference.
5. I understand that:
   - I may not directly benefit from taking part in this research.
   - Participation is entirely voluntary, and I am free to withdraw from the project at any time; and can decline to answer particular questions.
   - While the information gained in this study will be confidential and published as explained, on the basis that the interview will be undertaken in my place of employment, anonymity cannot be guaranteed.
   - I may ask that the audio recording be stopped at any time, and that I may withdraw at any time from the session or the research without disadvantage.
   - Even though information provided will be treated with the strictest confidence, disclosure of illegal activities will not be safe from legal search and seizure and may need to be reported to authorities.
6. I understand that only the researchers on this project will have access to my research data and raw results; unless I explicitly provide consent for it to be shared with other parties. If the need to seek your consent to share your research data with other parties does arise, I will be contacted by the researchers via mail.
7. I have had the opportunity to discuss taking part in this research with a family member or friend.

Participant's name.....

Participant's signature.....**Date**.....

I certify that I have explained the study to the volunteer and consider that she/he understands what is involved and freely consents to participation.

Researcher's name.....

Researcher's signature.....**Date**.....

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee in South Australia (Project number 8523). For queries regarding the ethics approval of this project please contact the Executive Officer of the Committee via telephone on +61 8 8201 3116 or email human.researchethics@flinders.edu.au

CONSENT FORM
(Observation of Professional Activity)
for Health Care Professionals

The perceptions and beliefs of health care professionals of multidisciplinary teams in the management of people with type 2 diabetes mellitus including bariatric surgery.

I hereby give my consent to **Alanoud Alobaidly**, a research student in the Faculty of Nursing at Flinders University, South Australia whose signature appears below, to record my work activities as part of a study of my professional activities and role.

I give permission for the use of these data, and other information which I have agreed may be obtained or requested, in the writing up of the study, subject to the following conditions:

My participation in this study is voluntary, and I understand that I may withdraw from the study at any time.

SIGNATURES

Participant.....**Date**.....

Researcher.....**Date**.....

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee in South Australia (Project number 8523). For queries regarding the ethics approval of this project, or to discuss any concerns or complaints, please contact the Executive Officer of the committee via telephone on +61 8 8201 3116 or email human.researchethics@flinders.edu.au

CONSENT FORM
(Observation of Professional Activity)
for Patients and those Attending

The perceptions and beliefs of health care professionals of multidisciplinary teams in the management of people with type 2 diabetes mellitus including bariatric surgery.

I hereby give my consent to **Alanoud Alobaidly**, a research student in the Faculty of Nursing at Flinders University, South Australia whose signature appears below, to record my consultation session as part of a study of my health care provider's professional activities and role.

I give permission for the use of these data, and other information which I have agreed may be obtained or requested, in the writing up of the study, subject to the following conditions:

My participation in this study is voluntary, and I understand that I may withdraw from the study at any time.

SIGNATURES

Participant.....**Date**.....

Attending.....**Date**.....

Attending.....**Date**.....

Attending.....**Date**.....

Researcher.....**Date**.....

This research project has been approved by the Flinders University Social and Behavioural Research Ethics Committee in South Australia (Project number 8523). For queries regarding the ethics approval of this project, or to discuss any concerns or complaints, please contact the Executive Officer of the committee via telephone on +61 8 8201 3116 or email human.researchethics@flinders.edu.au

نموذج الموافقة
(مراقبة النشاط المهني)
للمرضى والحاضرين

تصورات ومعتقدات العاملين في مجال الرعاية الصحية لفرق متعددة التخصصات في إدارة الأشخاص المصابين بداء السكري من النوع 2 بما في ذلك جراحة لعلاج البدانة.

أقر بموجبه العنود العبيدلي، طالب بحث في كلية التمريض بجامعة فلندرز بجنوب أستراليا، والذي يظهر توقيعه أدناه، لتسجيل جلسة التشاور الخاصة بي كجزء من دراسة الأنشطة المهنية لمقدمي الرعاية الصحية ودورها.

أعطي الإذن لاستخدام هذه البيانات، والمعلومات الأخرى التي وافقت عليها قد يتم الحصول عليها أو طلبها، عند إعداد الدراسة، مع مراعاة الشروط التالية:

مشاركتي في هذه الدراسة تطوعية، وأنا أفهم أنه يجوز لي الانسحاب من الدراسة في أي وقت.

التوقيعات

مريض ..... تاريخ... .....

حضور ..... تاريخ.....

حضور.. ..... تاريخ.....

حضور ..... تاريخ.....

باحث ..... تاريخ.....

تمت الموافقة على هذا المشروع البحثي من قبل لجنة أخلاقيات البحوث الاجتماعية والسلوكية بجامعة فلندرز في جنوب أستراليا (رقم المشروع 8523). للاستفسارات المتعلقة بالموافقة الأخلاقية لهذا المشروع ، يرجى الاتصال بالمسؤول التنفيذي للجنة عبر الهاتف على 61882013116+ أو البريد الإلكترونيhuman.researchethics@flinders.edu.au

Appendix 9: Translation certificate

Flinders UNIVERSITY

Flinders University and
SOCIAL AND BEHAVIOURAL RESEARCH ETHICS COMMITTEE

IMPORTANT – this form should only be completed for translations submitted after an ethics application has been submitted and reviewed by the committee; as the committee may request changes to the information and documents to be provided to prospective participants requiring translation.

TRANSLATION ACCURACY CERTIFICATION
Participant Documentation

PROJECT NO.	**8523**
Principal Researcher	Alanoud Alobaidly
Supervisor Name (student projects only)	Dr Wendy Abigail, Dr Pauline Hill and Dr Rebecca Feo
Project Title	The perceptions and beliefs of health care professionals of multidisciplinary teams in the management of people with type 2 diabetes mellitus including bariatric surgery.

Does your proposed research require documentation to be translated into another language?	X	Yes
		No

Place the letter 'X' in the relevant box

If NO, please note that this form does not need to be completed.

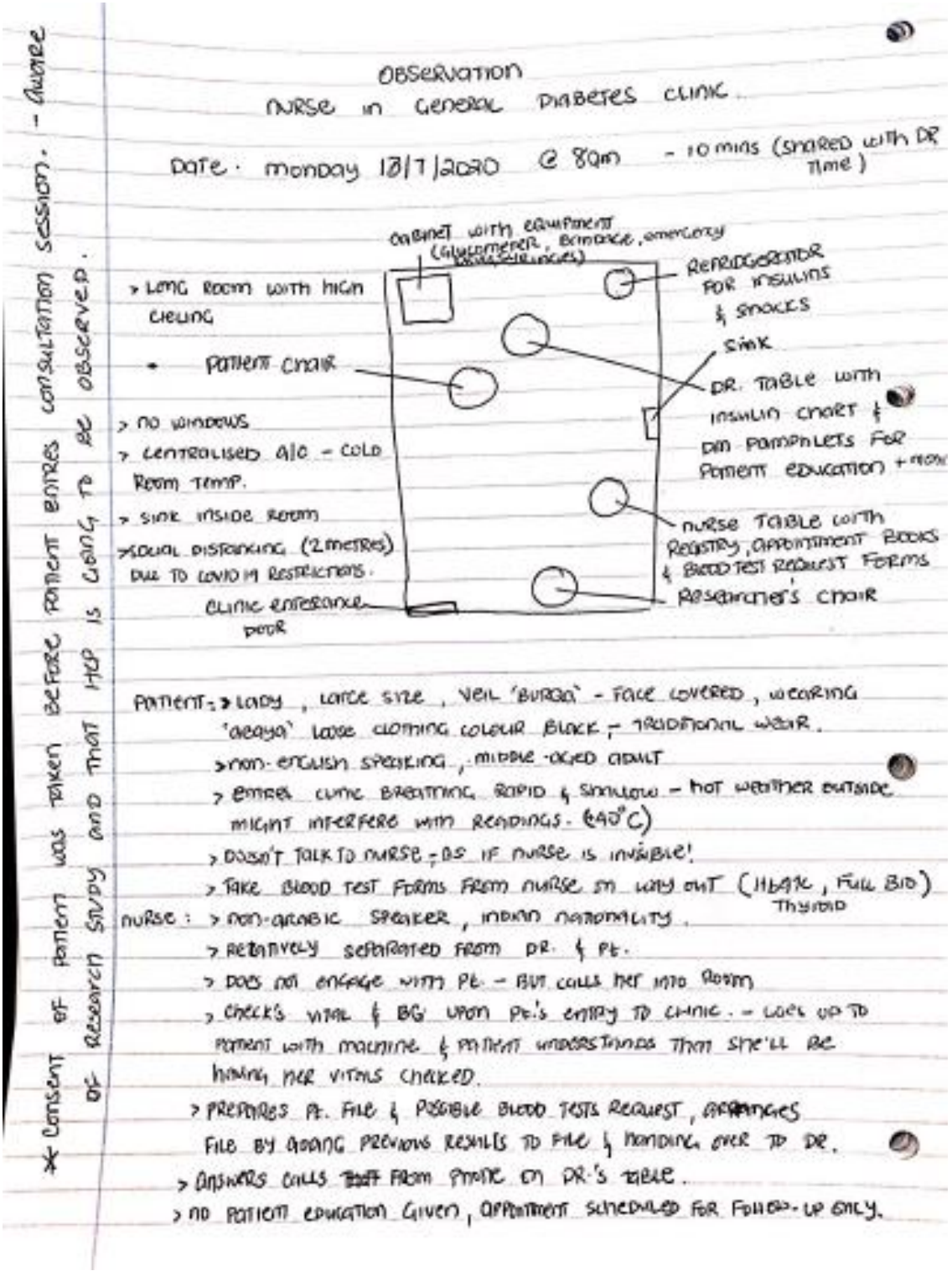
If YES, please complete the sections below.

		YES	Individuals Name or Company Name
HOW will information and documentation to be distributed to prospective participants be translated?	By the student researcher?	X	Alanoud Alobaidly
	By the students supervisor?		
	By one of the staff researchers?		
	By an employed research assistant?		
	By a professional translation company?		

Translations undertaken by a Third Party	**Principal Researcher / Supervisor Signature**
If information and/or documentation to be provided to prospective participants will be translated by a third party (i.e, research assistant / translation company etc), the committee asks that the principal researcher (or supervisor if a student project) please sign to the right to certify that accurate translations have been provided to the best of his/her knowledge.	**Date:**

Translations undertaken by Researcher	**Signature**
If information and/or documentation to be provided to prospective participants will be translated by one of the student or staff / supervisor researchers, please sign to the right to certify that the translations represent an accurate translation of the English versions provided to the committee.	**Date:** 14 November 2019

Appendix 10: Sample of observation note



OBSERVATION

NURSE IN GENERAL DIABETES CLINIC.

DATE: MONDAY 18/1/2020 @ 8AM - 10 MINS (SHARED WITH DR TIME)

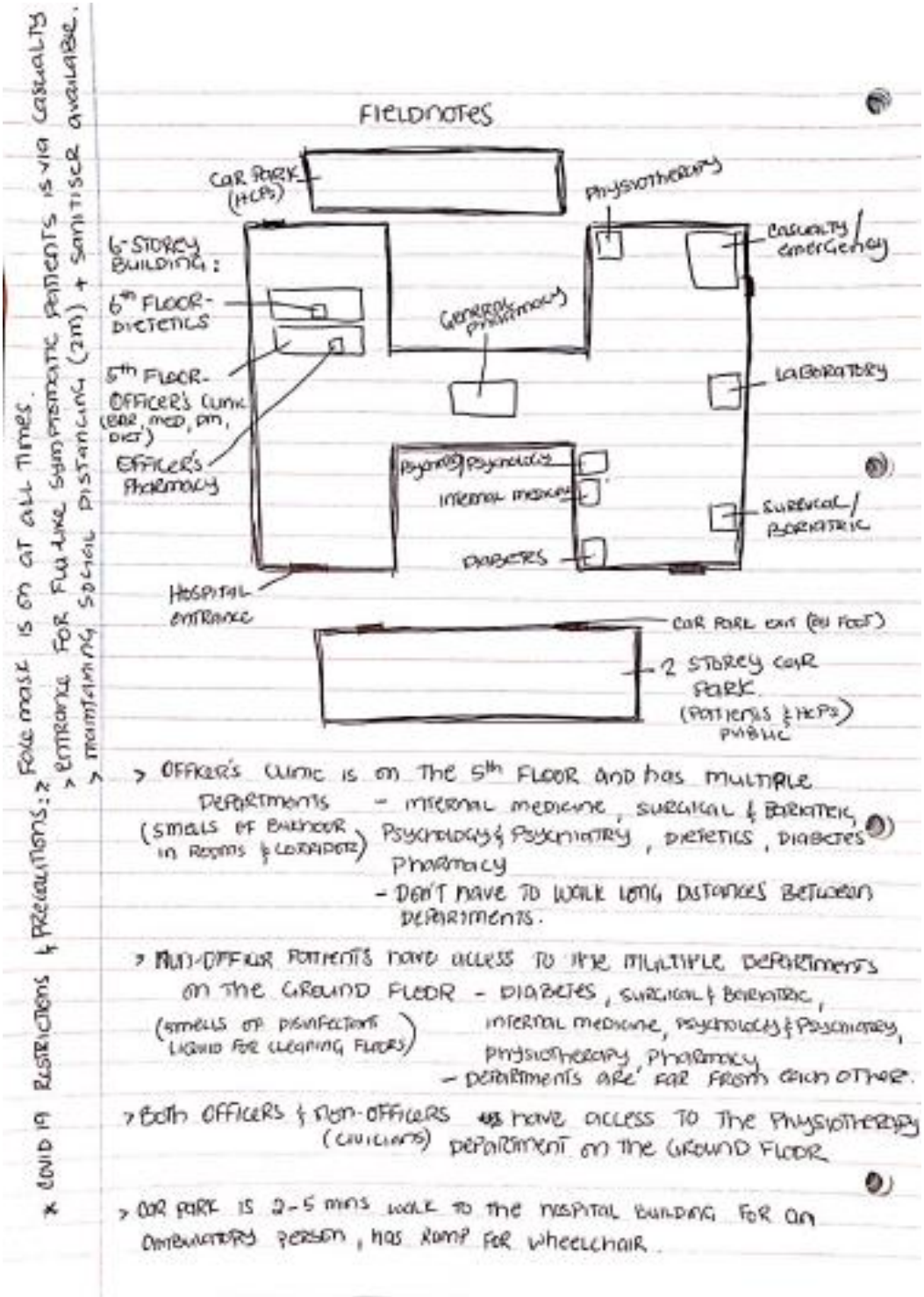
- CONSENT OF PATIENT WAS TAKEN BEFORE PATIENT ENTRES CONSULTATION SESSION. - AWARE OF RESEARCH STUDY AND THAT HCP IS GOING TO BE OBSERVED.

- > LONG ROOM WITH HIGH CIELING
- > NO WINDOWS
- > CENTRALISED A/C - COLD ROOM TEMP.
- > SINK INSIDE ROOM
- > SOCIAL DISTANCING (2 METRES) DUE TO COVID 19 RESTRICTIONS.

PATIENT: > LADY, LARGE SIZE, VEIL 'BURQA' - FACE COVERED, WEARING 'ABAYA' LOOSE CLOTHING COLOUR BLACK - TRADITIONAL WEAR.
> NON-ENGLISH SPEAKING, MIDDLE-AGED ADULT
> ENTERS CLINIC BREATHING RAPID & SHALLOW - HOT WEATHER OUTSIDE MIGHT INTERFERE WITH READINGS. (40°C)
> DOESN'T TALK TO NURSE - DO IF NURSE IS INVISIBLE!
> TAKE BLOOD TEST FORMS FROM NURSE ON WAY OUT (HbA1c, FULL BIO) THYROID

NURSE: > NON-ARABIC SPEAKER, INDIAN NATIONALITY.
> RELATIVELY SEPARATED FROM DR & PT.
> DOES NOT ENGAGE WITH PT. - BUT CALLS HER INTO ROOM
> CHECKS VITAL & BG UPON PT.'S ENTRY TO CLINIC. - LOOKS UP TO PATIENT WITH MACHINE & PATIENT UNDERSTANDS THAT SHE'LL BE HAVING HER VITALS CHECKED.
> PREPARES PT. FILE & POSSIBLE BLOOD TESTS REQUEST, ARRANGES FILE BY ADDING PREVIOUS RESULTS TO FILE & HANDING OVER TO DR.
> ANSWERS CALLS FROM PHONE ON DR.'S TABLE.
> NO PATIENT EDUCATION GIVEN, APPOINTMENT SCHEDULED FOR FOLLOW-UP ONLY.

Appendix 11: Sample of fieldnote



FIELDNOTES

CAR PARK (HCPs)

PHYSIOTHERAPY

CASUALTY / EMERGENCY

6-STOREY BUILDING:

6TH FLOOR - DIETETICS

GENERAL PHARMACY

5TH FLOOR - OFFICER'S CLINIC (EAR, MED, PM, DIET)

LABORATORY

OFFICER'S PHARMACY

PSYCH/PSYCHIATRY

INTERNAL MEDICINE

SURGICAL / BARIATRIC

DIABETES

HOSPITAL ENTRANCE

CAR PARK EXIT (BY FOOT)

2 STOREY CAR PARK. (PATIENTS & HCPs) PUBLIC

> OFFICER'S CLINIC IS ON THE 5TH FLOOR AND HAS MULTIPLE DEPARTMENTS - INTERNAL MEDICINE, SURGICAL & BARIATRIC, PSYCHOLOGY & PSYCHIATRY, DIETETICS, DIABETES (SMELLS OF BATHROOM IN ROOMS & CORRIDOR) PHARMACY
- DON'T HAVE TO WALK LONG DISTANCES BETWEEN DEPARTMENTS.

> NON-OFFICER PATIENTS HAVE ACCESS TO THE MULTIPLE DEPARTMENTS ON THE GROUND FLOOR - DIABETES, SURGICAL & BARIATRIC, INTERNAL MEDICINE, PSYCHOLOGY & PSYCHIATRY, PHYSIOTHERAPY, PHARMACY (SMELLS OF DISINFECTANT LIQUID FOR CLEANING FLOOR)
- DEPARTMENTS ARE FAR FROM EACH OTHER.

> BOTH OFFICERS & NON-OFFICERS (CLINICIANS) HAVE ACCESS TO THE PHYSIOTHERAPY DEPARTMENT ON THE GROUND FLOOR

> CAR PARK IS 2-5 MINS WALK TO THE HOSPITAL BUILDING FOR AN AMBULATORY PERSON, HAS RAMP FOR WHEELCHAIR.

* COVID 19 RESTRICTIONS & PRECAUTIONS: > FACE MASK IS ON AT ALL TIMES. > ENTRANCE FOR FLU-LIKE SYMPTOMATIC PATIENTS IS VIA CASUALTY > MAINTAINING SOCIAL DISTANCING (2M) + SANITISER AVAILABLE.

Appendix 12: Data analysis process

Code	Category	Subtheme	Theme
• The absence of guidelines • Department protocol • Outdated guidelines • Frequent change in protocol	• Guidelines and protocols	1.1: Barriers imposed by the organisation	1: Barriers to efficient T2DM management
• Lack of knowledge of healthcare professionals on obesity management • Lack of pharmaceutical options for weight loss • Limited knowledge on obesity management via pharmaceutical therapy	• Alternative obesity management options		
• Lack of specialised healthcare professionals in diabetes • Lack of specialised healthcare professionals in bariatric care • Shortage of staff	• Hospital staffing		
• Outdated hospital system • Lack of computers • Lack of network system	• Innovation and technology		
• No space for healthcare professional to provide patient education • Long distance walk between different departments • Shared space between healthcare professionals from different disciplines	• Hospital setting and structure		

Code	Category	Subtheme	Theme
• Knowledge • Power • Trust	• Line of hierarchy	1.2: Barriers among the healthcare professionals	
• Taking the role of other discipline • Lack of knowledge of healthcare professional's role	• Role confusion		
• Insufficient patient information • Patient is unaware of their medical condition	• Patient information for referral		
• No communication between healthcare professionals • Lack of cooperation • no coordination between departments • Lack of collaborations	• Lack of communication, collaboration, cooperation, and coordination		
• Discrepancies in the meaning in multidisciplinary team among healthcare professionals • Key members of a multidisciplinary team	• Multidisciplinary team approach		
• Absence of T2DM specialised clinic • Lack of specialised clinic for T2DM management	• Specialised clinics	2.1: Expectations of healthcare professionals of the organisation	2: Expectations towards a multidisciplinary team for T2DM management
• Lack of research • Lack of resources for research • Lack of facility for research	• Research department		
• More staff • Can't do multiple tasks (read investigations, prescribe meds, adjust doses)	• Adequate staffing		

Code	Category	Subtheme	Theme
• Absence of patient education • Responsibility of patient education • Source of information of patients with T2DM • HCP is not available all the time • Can't contact HCPs • HCPs are not answering calls • Sufficient referral information • Patient unaware of their condition • Managed by specialised HCPs • Qualified HCPs in diabetes and bariatric surgery	• Patient education • Availability of healthcare professionals • Assessing and preparing patients • Qualified team	2.2: Expectations of healthcare professionals of other disciplines	
• Happy with my team • Working together • Ask for opinion • Share our knowledge • Learn from each other • Share our experience • Do their responsibility • Exact role for HCPs	• Job satisfaction • Exchange of Knowledge and sharing experiences • Focused role	3.1: Professional growth	3: Launch of a multidisciplinary team for T2DM management

Code	Category	Subtheme	Theme
• T2DM complication delay • Slow T2DM development	• Delay in T2DM progression	3.2: Success of a multidisciplinary team	
• Need for follow-up • Follow patient after surgery • Give patient care after discharge	• Follow-up care		
• Repeat of doctor order • Same order twice • Different doctor request same order as other HCPs	• Duplication of order		
• Less times to come to hospital • Less patients for each doctor • More time to see each patient	• Reduction in patient's hospital visit		
• Agree to one patient plan • HCPs be on the same page to treat patient • HCPs for a patient target	• Focused management plan		
• Lots of appointments and long time	• Lengthy appointments	3.3: Challenges of a multidisciplinary team	
• Conflict • Different background, different management	• Conflict in management		
• Poor communication between HCPs • No hospital network system	• Lack of communication		
• No respect • They tell patients they are better than us	• Lack of respect		

Note: HCPs = healthcare professionals; T2DM = type 2 diabetes mellitus