

**THE SELF-MANAGEMENT STRATEGIES FOR DIABETIC PATIENTS UNDER
TREATMENT IN THE PRIMARY HEALTH CARE FACILITIES OF THE
SEKHUKHUNE DISTRICT OF THE ELIAS MOTSWALEDI MUNICIPALITY IN THE
LIMPOPO PROVINCE, SOUTH AFRICA**

by

MAKOFANE PD



DISSERTATION

**submitted in fulfilment of the requirements for the Degree of Master in Nursing
Science**

FACULTY OF HEALTH SCIENCES

(School of Health Care Sciences)

at

UNIVERSITY OF LIMPOPO

SUPERVISOR: PROF TM MOTHIBA

CO-SUPERVISOR: MRS MA BOPAPE

YEAR 2019

DECLARATION

I, Makofane Pheladi Doreen, declare that the full-dissertation hereby submitted to the University of Limpopo for the degree of Master of Nursing (MNurs) has not been previously submitted by me for a degree at any other university, that it is my work in design and in execution, and that all the material contained herein has been duly acknowledged

Signature: **Date:**

DEDICATION

The study is dedicated to my mother, Sabinah Makofane, all my siblings and my daughter, Tseebo.

ACKNOWLEDGEMENTS

I acknowledge the following people, without their love, support and patience; I would not have been able to complete this study:

- My supervisor, Professor TM Mothiba, for her guidance, encouragement, support, patience and being my mentor throughout my study which I appreciate.
- My co-supervisor, Mrs MA Bopape, for being available whenever I needed her assistance. Thank you.
- The Limpopo Department of Health for allowing me to collect data in its Health Facilities.
- I thank all the patients who willingly participated in the study and shared their information.
- Thanks to My Operational Manager at Hlogotlou Clinic for supporting me and allowing me to attend the research presentations whenever I needed to. God bless you.
- My family for motivation, encouragement and the continuous support that they showed me in all circumstances.

ABSTRACT

Background: Non-attendance of diabetic patients at primary health care facilities for scheduled appointments has been identified as one of the most pressing issues in chronic illness, including diabetes mellitus, management and results into uncontrolled illnesses. Diabetes mellitus has an increased mortality and morbidity rate, thus has been identified as the second most frequent killer disease in South Africa.

Aim of the study: The purpose of the study is to determine self-management strategies to maintain a healthy life for diabetic patients under treatment in primary health care facilities in the Sekhukhune District.

Methods: A qualitative, phenomenological, explorative and descriptive study design was conducted in 5 clinics of the Sekhukhune District in the Elias Motswaledi Municipality in Limpopo Province. Data were collected through one-to-one interviews using semi-structured guide. A non-probability purposive sampling method was used to select participants until data saturation was reached. Data were analysed using Tech's coding qualitative data analysis approach.

Results: The findings of this research reveal that diabetic patients know the importance of adherence to diet. However, they also elaborated on the challenges they face, like inability to afford proper diet and their stress levels. They are aware of predisposing factors and recommend support structures like food parcels as well as adhering to the prescribed treatment.

Conclusion and recommendations: Diabetic patients lack self-management strategies to maintain their quality of life when diagnosed with diabetes. Furthermore, the study concludes that diabetics lack encouragement and empowerment from health care workers and their families. The study recommends that diabetic patients adhere to a prescribed diet and treatment and that they could be offered food parcels and taught how to avoid factors that could trigger stress. Additionally, it is recommended that support structures be developed to assist diabetic patients about self-management strategies that they could use in order to maintain a good quality of

life. It is also recommended that the Department of Health employ Home-Based Carers in the facilities to assist diabetic patients with their day-to-day care.

Keywords: Diabetes mellitus, self-management, strategies, lifestyle modification and medication.

DEFINITION OF CONCEPTS

Diabetes mellitus

A chronic disease which occurs when a person cannot fully use or store the glucose obtained from food, caused by either a total lack of insulin in the body or an inability to utilise the insulin effectively (Health System Development Unit, 2010). In this study, diabetes mellitus refers to the condition of patients, characterised by elevated blood glucose, which gave rise to the researcher's probing them for more information about their self-care.

Health

Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity (World Health Organisation, 2011). In this study, health refers to the state of a diabetic patient who is under treatment and whose blood glucose is controlled and between the normal ranges.

Self- management

Self-management is an individual's ability to take care of him or herself, to manage symptoms, physical and psychosocial consequences of treatment and lifestyle changes inherent in living with a chronic condition (Ugalde, Haynes, Boltong, White & Livingston, 2016). In this study, self-management refers to a diabetic patient's ability to take care of him or herself, whether in the presence of a health care worker or not, in managing his or her disease condition.

Patient

A patient, as defined by South African Nursing Council, is an individual who is under the care of a health care practitioner and entitled to receive the service in accordance with the condition (Act 33 of 2005). In this study, a diabetic patient refers to a person with elevated blood glucose levels that lead to an illness and require treatment or management to minimise the symptoms.

Quality care

Quality care relates to the degree to which health care systems, services and supplies for individuals and populations increase the likelihood for positive health outcomes and are consistent with current professional knowledge (Fottler, Slovensky & Malvey, 2015). Quality care in this study means the appropriate care delivered to all diabetic patients under treatment in an attempt to meet their need to maintain a healthy life.

Quality of life

Quality of life is a multidimensional concept that focuses on the impact of disease and its treatment on the well-being of an individual. It is influenced by our physical and social environment, as well as our emotional and existential reactions to that environment (Barcaccia, Esposito, Matarese, Bertolaso & Elvira, 2013). Quality of life in this study refers to the way diabetic patients live their lives. This is influenced by the life-style, treatment compliance and environmental factors.

Strategies

Strategies are the series of plans of actions chosen to bring about a better future through carrying out the needs for the existing gaps, such as achievement of a goal or solution to a problem. They require the most efficient art and resources for them to be achieved and to be most effective (Business Dictionary, 2019). In the current study, strategies are the series of actions that diabetic patients carryout to maintain normal blood glucose levels and to promote quality of life with the help of health care professional and families.

LIST OF ABBREVIATIONS

ACT:	Acceptance, Commitment and Therapy
AIDS:	Acquired Immune Deficiency Virus
CCM:	Chronic Care Model
DSME:	Disease Self-Management Education
HIV:	Human Immunodeficiency Virus
IDDM:	Insulin-Dependent Diabetes Mellitus
LTC:	Long Term Conditions
NIDDM:	Non-Insulin-Dependent Diabetes Mellitus
PHC:	Primary Health Care
SASSA:	South African Social Security Agency
SMS:	Self-Management Support
UK:	United Kingdom

TABLE OF CONTENTS

DECLARATION	i
DEDICATION	ii
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
DEFINITION OF CONCEPTS	vi
LIST OF ABBREVIATIONS.....	viii
CHAPTER 1	1
OVERVIEW OF THE STUDY.....	1
1.1 INTRODUCTION AND BACKGROUND.....	1
1.2 PROBLEM STATEMENT	3
1.3 AIM OF THE STUDY	4
1.4 RESEARCH QUESTION	4
1.5 OBJECTIVES OF THE STUDY	4
1.6 SIGNIFICANCE OF THE STUDY	4
1.7 RESEARCH METHODS AND DESIGN.....	5
1.7.1 Study Site	6
1.7.2 Population and sampling	6
1.7.3 Data Collection	6
1.7.4 Data analysis	6
1.8 ETHICAL CLEARANCE	7
1.9 CHAPTER LAYOUT	7
1.10 SUMMARY.....	7
CHAPTER 2.....	8
LITERATURE REVIEW AND THEORETICAL FRAMEWORK	8
2.1 INTRODUCTION.....	8
2.2 THEORETICAL FRAMEWORK.....	9
2.2.1 Orem’s theory of self-care	9
2.3 DESCRIPTION OF OREM’S SELF-CARE THEORY	10
2.3.1 Self-care.....	10
2.3.2 Self-care agency	11

2.3.3 Nursing agency.....	13
2.3.4 Self-care requisite.....	14
2.4 INTERGRATION OF OREM’S THEORY INTO OTHER FACTORS	15
2.4.1 Prevalence of diabetes mellitus	15
2.4.2 Effects of education on diabetes mellitus’ prognosis	16
2.4.3 Knowledge of patients about managing diabetes mellitus.....	17
2.4.4 Predisposing factors for diabetes mellitus	17
2.4.5 Diabetic care and traditional healing	18
2.4.6 Challenges experienced by patients in the management of diabetes	18
2.4.7 Self-management support	18
2.4.8 Self-management education	19
2.4.9 Steps to support self-management in patients with chronic illness.....	19
2.4.10 Self-management programme	20
2.4.11 Effects of self-management support	21
2.4.12 Factors contributing to non-adherence	22
2.4.13 Accessibility of health care facilities to diabetic patients	23
2.4.14 The relationship between acceptance and dietary recommendations.....	23
2.5 CONCLUSION	24
CHAPTER 3.....	25
RESEARCH METHOD AND DESIGN	25
3.1 INTRODUCTION.....	25
3.2 RESEARCH METHOD.....	25
3.3 RESEARCH DESIGN	26
3.3.1 Phenomenological Design.....	26
3.3.2 Explorative Design.....	27
3.3.3 Descriptive Design.....	27
3.4 POPULATION AND SAMPLING	27
3.4.1 Inclusion criteria.....	28
3.4.2 Exclusion criteria	28
3.5 DATA COLLECTION	29
3.5.1 Preparation of the research field	29
3.5.2 The interview site	29
3.5.3 Interview	29
3.5.4 Communication strategies used	30

3.6 DATA ANALYSIS	31
3.7 MEASURES TO ENSURE TRUSTWORTHINESS	33
3.7.2 Dependability	34
3.7.3 Confirmability.....	34
3.7.4 Credibility	35
3.7.5 Summary of strategies to ensure trustworthiness	36
3.8 ETHICAL CLEARANCE	36
3.8.1 Permission to conduct the research.....	36
3.8.2 Informed consent.....	37
3.8.3 Confidentiality.....	37
3.8.4 Privacy	37
3.8.5 Anonymity.....	37
3.8.6 Avoidance of harm/beneficence	37
3.8.7 Justice.....	38
3.9 CONCLUSION	38
CHAPTER 4.....	39
PRESENTATION AND DISCUSSION OF THE RESEARCH FINDINGS.....	39
4.1 INTRODUCTION.....	39
4.2 DEMOGRAPHIC PROFILE	39
4.3 DISCUSSION OF THEMES AND SUB-THEMES.....	40
4.3.1 THEME 1: Explanation of self-management strategies maintained by diabetic patients	41
4.3.2 THEME 2: Knowledge related to self-management strategies amongst diabetes patients.....	49
4.3.3 THEME 3: Challenges experienced when living with diabetes.....	56
4.3.4 THEME 4: Suggested self-management strategies related to maintenance of quality of life by diabetic patients.....	60
4.4 SUMMARY.....	64
CHAPTER 5.....	65
SUMMARY, LIMITATIONS AND RECOMMENDATIONS.....	65
5.1 INTRODUCTION.....	65
5.2 SUMMARY.....	65
5.2.1 The objectives of the study are to:.....	65
5.2.2 Research question.....	65
5.2.3 Research method and design.....	66

5.2.4 Research findings	66
5.3 DEVELOPED SELF-MANAGEMENT STRATEGIES ACCORDING TO THE FINDINGS	67
5.3.1 Explanation of self-management strategies maintained by diabetic patients (Theme 1).....	67
5.3.2 Knowledge related to self-management strategies amongst diabetes patient (Theme 2).....	68
5.3.3 Challenges experienced when living with diabetes (Theme 3).....	68
5.3.4 Suggested self-management strategies related to maintenance of quality life of diabetic patients (Theme 4).....	68
5.4 RECOMMENDATIONS.....	69
5.4.1 Nursing education	69
5.4.2 Nursing practice	69
5.5 LIMITATIONS	70
5.6 CONCLUSION	70
ANEXURE A: Approval from TREC (Turfloop Research and Ethics Committee)	82
ANEXURE B: Letter seeking approval from Department of Health Limpopo....	83
ANEXURE D: Consent Form.....	85
ANEXURE E: Coding report	87
ANEXURE F: Certificate from independent coder	92
ANEXURE G: Transcript	93
ANEXURE H: Interview guide.....	96
ANEXURE I: Certificate from editor.....	100

CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION AND BACKGROUND

Self-management related to diabetic patients is critical as the condition needs to be managed at all times by patients themselves, either at the health care facility or at home. Diabetes mellitus is a major concern to the global population as its complications increase every year. The health education given to patients should also be given to family members and/or guardians of diabetic patients, aiming at improving health outcomes through relevant patient care activities. The major day-to-day care in diabetes is handled by patients and families themselves. Therefore, it is very important to value and rely on the measures for self-management of diabetes mellitus (Shrivastava, Shrivastava & Ramasamy, 2013).

Health care professionals should emphasise the adherence to treatment during their interaction with patients, relatives and community members, to encourage and empower patients not to default on their treatment and cause unnecessary complications.

People living with diabetes should learn and apply knowledge (from the health education provided by health professionals), self-health care related skills, problem-solving methods and coping strategies in order to balance various factors to control their condition, geared towards maintenance of quality of life (Powers, Bardsley, Cypress, Duker & Funnell, 2016). In support of health education, the Disease Self-Management Education (DSME) initiative recognises the importance of the management of diabetes through single education and self-management structured programmes for people with newly diagnosed Type 2 diabetes mellitus who had showed no difference in biomedical or lifestyle outcomes (Sminerio, Funnell, Brown, Childs & Haas, 2010). Additionally, the diabetes education and self-management programme for ongoing and newly diagnosed patients was one of the first programmes to meet the quality criteria for education programmes that are listed by

the Department of Health and the Diabetes UK Patient Working Group (Funell, Brown, Childs, Haas & Hosey, 2017).

Diabetes is an increasingly serious health problem among African-American women. This might be related to the consumption of sugar-sweetened drinks which predispose people to the risk of developing diabetes. It has been identified that regular consumption of sugar-sweetened drinks and fruit drinks is associated with an increased risk of Type 2 diabetes mellitus in African-American women (Palmer, Boggs & Krishnan, 2008). In addition, a lack of physical activity predisposes people to develop Type 2 Diabetes and makes the management of it more difficult. Changes in life habits are part of a slow and difficult process, especially in terms of food. Eating habits are transmitted from generation to generation or by necessity, which refers to the cost and availability of food. These are related to the acceptance or rejection of certain eating patterns which may result in poor adherence to a prescribed diet (Peres, dos Santos, Zanetti & Ferronato, 2017).

Engaging in regular physical activity can not only prevent the development of Type 2 diabetes mellitus but can also potentiate the effects of anti-diabetic drug therapy. Therefore, it is important for all healthcare professionals who engage in the prevention and treatment of diabetes mellitus to have a thorough knowledge of the role of physical activity in this condition and to impart the knowledge to patients (Goedeke & Ojuka, 2014).

Patients with diabetes mellitus need psychological support from the time of diagnosis and throughout their life span. The psychological make-up of patients with diabetes plays a central role in their self-management actions. Without patients' adherence to the effective therapies because of their stress levels, there are persistent low rates in controlling the disease, increased diabetes-related complications, causing deterioration in quality of life, resulting in increased healthcare utilisation and burdening healthcare systems (Chew, Shariff-Ghazali & Fernandez, 2014).

The second highest prevalence of diabetes mellitus and metabolic syndrome was found in a South African coloured population where a study was conducted to determine the prevalence of diabetes mellitus and metabolic syndrome. It was further found that increased lifestyle diseases such as dysglycaemia, obesity and high

blood pressure existed in this coloured population (Matsha, Rajiv, Soita, Hassan & Kengne, 2012).

Epidemiological data show that diabetes mellitus in South Africa is increasing with changes in life styles and the aging of the population. In an assessment of the level of understanding of patients about diabetes mellitus, its complications and management in Durban, South Africa it was revealed that most patients are female and have Type 2 diabetes mellitus, but lack knowledge of the type of diabetes they have (Mashinge, Motshweleka, Moodley, Rahmtoda & Sardiwalla, 2008).

Mashige *et al.* (2008) indicate that hereditary factors, diet and lifestyle are associated with diabetes mellitus. Furthermore, it is reported that patients can control their diabetes mellitus through diet, exercise, through sugar monitoring and through regular medical examination (Mashige *et al.*, 2008).

Etukudo (2013) determined the self-management skills of adults with diabetes mellitus attending the clinic in the Mokopane Hospital, Limpopo Province. It showed that patients have poor knowledge about diabetes mellitus. In conclusion, poor general knowledge of diabetes mellitus and not practising self-care and poor diabetic control were found in majority of the participants. It was against this background that the study aimed to determine the strategies used by diabetic patients under treatment.

1.2 PROBLEM STATEMENT

The researcher realised that patients do not comply with their diabetic treatment and, as a result, they present at primary health care facilities with uncontrolled conditions which lead to poor progress. It was realised that diabetes mellitus is a major cause of death. This was observed at a particular clinic and its referral hospital in the Sekhukhune area. From April 2016 to April 2017, 241 diabetic patients were admitted to the hospital and 41 patients died (South Africa, 2017).

Non-attendance of diabetic patients with scheduled appointments at primary health care facilities has been highlighted as one of the most pressing challenges in chronic illness management (South Africa, 2017). It has been observed that non-compliance with scheduled dates of diabetic patients at the primary health care facilities has significant outcomes that dramatically influence patient morbidity. There is evidence

that negative experiences after diagnosis in have consequences for health over the life course of diabetic patients. This includes health-threatening behaviours. Behaviours such as missed appointments introduce the possibility of the inverse care law, which states that healthcare provision is least likely to be provided to those who need it most (Williamson, Ellis, Wilson, McQueenie & McConnachie, 2017).

According to Statistics South Africa 2015, there has been a significant increase to 7.1% in deaths caused by diabetes mellitus. This now makes diabetes mellitus South Africa's second biggest killer (Cullinan, 2017). It seems that patients continue taking chronic treatment without taking care of themselves through life-style modification. This was detected by the researcher while offering health education at the clinic. Therefore, the study was undertaken to investigate the strategies that patients use to maintain their quality of life.

1.3 AIM OF THE STUDY

The aim of the study was to explore and develop self-management strategies for maintaining a healthy life for diabetic patients under treatment in primary health care facilities in the Sekhukhune District, Limpopo Province, South Africa.

1.4 RESEARCH QUESTION

- What self-management strategies do diabetic patients use in primary health care facilities in the Elias Motswaledi Municipality, Sekhukhune district of Limpopo province?

1.5 OBJECTIVES OF THE STUDY

Objectives of the study are to:

- Explore and describe the self-management strategies of diabetic patients under on treatment in primary health care facilities in the Elias Motswaledi municipality, Sekhukhune district of Limpopo Province.
- Develop self-management strategies for diabetic patients on treatment.

1.6 SIGNIFICANCE OF THE STUDY

The significance of the study is the benefits to the following:

- **Hospitals**

The rate of diabetic patient hospitalisation, diabetes complications and poor progress resulting from an inability to self-manage their condition might be reduced after the implementation of the strategies.

- **Patients**

Findings may help diabetic patients to manage their condition and to reduce their default rate, complications and deaths caused by diabetes mellitus. The findings might also help patients realise that self-management is very important.

- **Department of Health**

The findings of study might assist the Limpopo Department of Health to reduce health costs, as diabetes mellitus will be managed through attaining medication half-life and avoiding toxicity or under-medication.

The recommendations might therefore assist and guide policy developers in the Department of Health to develop new policies to guide and support health care workers to facilitate self-management with their patients.

1.7 RESEARCH METHODS AND DESIGN

Qualitative Method

A qualitative research approach was followed because it uses a reasoning process based on continually putting scattered data together to create a whole meaning which emerges. In qualitative research, meaning is created through the different perceptual filters of the research participants. Taken together, these perceptions contribute to the construction of theory or recommendations (Devault, 2018). Diabetic patients gave different views of the strategies and what can be followed to make a diabetic patient feel as normal as possible. These views were elicited through one-to-one interactions.

A phenomenological design was used because it allowed the researcher to explore and describe the original ideas and experiences about self-management of the diabetic patients under treatment (Smith, 2014).

1.7.1 Study Site

The study was conducted in clinical settings, in primary health care facilities in the Sekhukhune District of the Elias Motswaledi municipality of Limpopo Province.

The health service structure of the Sekhukhune District consists of five municipalities: Fetakgomo, Tubatse, Makhuduthamaga, Elias Motswaledi and Ephraim Mogale municipalities. Elias Motswaledi municipalities comprised of the following clinics: Rosenekaal, Zaaiplaas, Goedgedacht, Hlogotlou, Rammupudu, Matsepe, Sephaku, Motetema, Groblersdal, Dikgalaopeng, Rammupudu, Moutse East, Moutse West, Kwarrilagte, Magukujoane and Elaansdoren

1.7.2 Population and sampling

In this study, the population was diabetic patients under treatment and who came for consultations from primary health care facilities of the Sekhukhune District of the Elias Motswaledi municipality. A non-probability purposive sampling was used and the participants were selected according to inclusion criteria. The population was targeted at 12 participants from each clinic but it continued until data saturation was reached (Brink, van der Walt & Van Rensburg, 2018).

1.7.3 Data Collection

A semi-structured interview was used for the data collection. The researcher used an interview guide, probing questions and a voice recorder to capture the participants' voices. The recorded voices were then transcribed verbatim and analysed.

1.7.4 Data analysis

Data was analysed using Tech's open coding method whereby the researcher started by transcribing the collected data and in the final stage of analysis, themes and sub-themes emerged.

1.8 ETHICAL CLEARANCE

The researcher adhered to the ethical norms for conducting research with human subjects to promote knowledge and truth, to avoid misunderstandings and any exploitation of the participants. Ethical clearance was obtained from the University of Limpopo TREC (Turloop Research Ethics Committee), attached see Annexure A, and permission to collect data in the health facilities was obtained from the Limpopo Department of Health, attached in Annexure C. The participants gave their consent to the researcher to include them in the interview sessions and signed consent forms before the interviews were conducted. All participants were assured of their privacy, confidentiality and anonymity.

1.9 CHAPTER LAYOUT

Chapter 1: Overview of the study

Chapter 2: Literature review and theoretical framework

Chapter 3: Research methodology

Chapter 4: Discussion of findings

Chapter 5: Conclusion, summary, limitations, strategies and recommendations of the study

1.10 SUMMARY

From the perspective of the strategies used by diabetic patients under treatment from the clinics of the Elias Motswaledi municipality, it seemed necessary to investigate further because of the high defaulter rate at the clinics and admission of patients at the hospital that was recognised. In this chapter, the research problem, research questions, data collection and objectives are described.

CHAPTER 2

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 INTRODUCTION

This section reviews literature related to the strategies for self-management of patients with diabetes mellitus to maintain their quality of life. The literature review was conducted through perusing books and published magazine articles related to the topic, the literature was retrieved from various databases and search engines. Electronic searches, such as BMC, BMJ Open, Elsevier, Science Direct and SABINET were contacted. A literature review is defined as a written document that presents a reasonably contended incident established on a comprehensive understanding of the recent state of knowledge about a topic of study (Machi & McEvoy, 2016).

The chapter also presents the theoretical framework which aligns with the research topic of self-management strategies for diabetic patients under treatment. The literature review chapter was provided in this study though is qualitative in nature, knowing more information about the problem studied was necessary to guide data collection questions

2.2 THEORETICAL FRAMEWORK

The theory of self-care by Dorothea Orem (1914-2007) has been applied to the problem in the current study.

2.2.1 Orem's theory of self-care

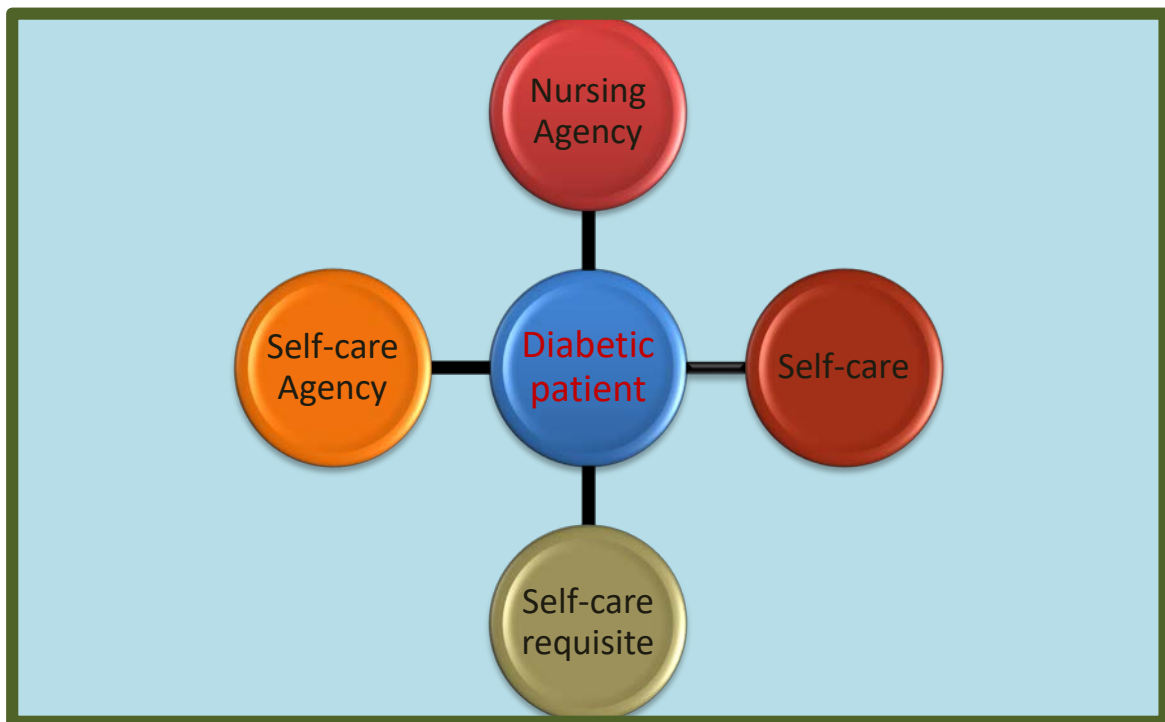


Figure 1: Orem's theory of self-care

Orem's theory of self-care, as explained by Master (2011), is used in this study because it focuses on self-care whereas the researcher is focusing on self-management strategies for diabetic patients. According to Orem's theory, interaction between two people (health care provider and patient) can yield successful meetings universally which may be an important component of primary health care prevention and ill health. When the person knows his/her health problems the knowledge will encourage self-care behaviours.

In this study, Orem's self-care theory was applied in order to identify how diabetic patients may better conduct themselves to improve the quality of life, regardless of the presence or absence of a health care worker. Orem stipulates that self-care, self-care agency, nursing agency and self-care requisites are in line with self-

management of diabetes mellitus. The theory evaluates the abilities, capabilities and what diabetes patients lack towards controlling the condition in a proper manner.

2.3 DESCRIPTION OF OREM'S SELF-CARE THEORY

There are functional strategies for chronic illnesses which have been developed and utilised in Uganda, Canada and America, but are not specifically aimed at diabetes mellitus. South Africa has not yet developed functional strategies for diabetes mellitus hence the current study. The self-management strategies for Type 2 diabetes developed in this study have been guided by the results of the study and by Orem's self-care theory presented in chapter 5.

2.3.1 Self-care

According to Orem, every individual has the ability to carry out self-caring activities. There are instances when patients are encouraged to bring out the best in themselves despite being ill for a period of time. This is particularly evident in rehabilitation settings, where patients are enabled to be more independent, after being cared for by physicians and nurses (Wayne, 2016).

Self-care is the set of activities carried out to take care of one's own mental, emotional, and physical health. Good self-care is a key to improved mood and reduced complications. It is a key to a good relationship with oneself and others illness. It is something that a diabetic patient needs to do, and it gives power, energy and encouragement to patients to improve their health. However, it requires knowing what should be done.

The current study findings reveal that diabetic patients have a little knowledge of non-pharmacological management but tend to ignore practising the methods. The method of delivering information to the patients from health care workers is unclear. Self-care is initiated and implemented by diabetic patients to sustain their own wellness, these points are elaborated on in the discussion of Theme 1 and Theme 2 in Chapter 4. Patients rely on medication from the facilities, yet the treatment is not properly administered. The care of diabetic patients requires involvement with and encouragement of diabetic patients. Simply distributing the treatment to patients does not reduce the already high rate of the illness. South Africa is facing a major problem in dealing with diabetes mellitus as the patients have no specific support for their condition. It is up to the government to assist developers to create structures

that can promote health in diabetics, either at the health care facilities or in the communities.

It appears that many diabetic patients are reluctant to do things on their own. Amongst the patients interviewed, only a few mentioned that they have their own gardens at home and others complained about the affordability of the relevant diet. On diagnosis, a thorough health talk is carried out between a health care provider and the patient. However, the patients stick to that information for few months then when the illness is controlled through the medication they default and start to develop complications. That is when they present to the clinic with other illnesses like diabetic foot and poor vision.

The reviewed literature shows that self-care consists of actions that individuals freely and deliberately initiate and perform on their own behalf in maintaining life, health and well-being. The nurse actions are directed towards assisting the patients to assume responsibility for their self-care (Wagnild, Rodriguez & Pritchett, 1987).

The results reveal that diabetic patients do not execute self-management while at home although they know what they should, for example, physical activities. Patients think carrying out everyday house chores is exercise. Patients cannot afford the proper diet for their condition and they reported that they do not have gardens in their backyards.

2.3.2 Self-care agency

Orem outlined self-care agency as the skill to initiate or perform the health activities necessary to maintain one's life, health and well-being. The self-care agency of a diabetic patient is characterised by age, gender, educational status, employment status, income level or family type (Kumar, 2007). These are the socio-demographic characteristics that might have an impact on the patients' well-being. Diabetic patients who are literate can read the instructions on the medication packs and elderly people live alone there may be a problem with treatment compliance and self-management as they might not have any assistance from other family members

Only medicine measures are not satisfactory for the effective control of diabetes, hence it is necessary to develop strategies for continuous monitoring of the population with the illness. In previous studies, it has been revealed that diabetic

have a clear understanding of the importance of compliance. In the families where patients have a lack of knowledge which indicates that it is necessary to advance knowledge of diabetics (Palmer & Pinto, 2015).

The main problem of an increasing rate of diabetes mellitus in the Elias municipality is that diabetic patients focus on managing the illness with medicine only. It is of great concern to the patients if there is shortage of medicine at the facility. This is outlined under theme 2 of chapter 4. This shows that diabetic patients need detailed information about diabetes mellitus. The lack of knowledge plays a major role in the increase of complications. Diabetic patients do not have any other strategies that can be used to control the blood glucose level in the absence of medicine. They rather complain of the shortage of treatment at the facilities. This is because they rely more heavily on medicines than on non-pharmacological regimens.

The idea of following a proper diet, exercising, avoiding alcohol and stress is known to patients but they do not believe that these mentioned methods alone will keep them surviving for a long time. The existing self-care agency is insufficient. Although dieticians are available at selected facilities they are not available at all times because of having to cover other facilities.

Diabetic patients may find it easy to follow the rules and protocols that are taught by the health services with the aid of health care professionals. Health care professionals need to compliment and congratulate those whose conditions are improving to encourage and reinforce them to maintain a healthy lifestyle. This may motivate other patients to join the services that have facilitated a healthy lifestyle in others.

From the information gathered, it was found that diabetic patients are not capable of managing emergency hyperglycaemia. This is the reason patients present to the clinic with complications. Patients depend more on medicine because they are not able to minimise the symptoms of diabetes mellitus themselves whilst at home. However, some of the symptoms are manageable without medication.

The self-care agency of a healthy person is sufficient to meet the self-care needs. However, patients with diabetes have extra self-care needs, like medical treatment,

nutrition, physical activity and medication, so their existing self-care agency is insufficient (Sucuru, Kizilci & Ergo, 2017).

2.3.3 Nursing agency

Orem suggested that a nursing system forms when nurses prescribe, design and provide nursing that relates the individual's self-care capabilities and meets therapeutic self-care requirements. Even where nurses provide total patient care, patients share the responsibility for care and for personal health with the nurse acting as a consultant (Torrey, 2011). Torrey (2011) further states that people should be self-reliant and responsible for their own care and that of others in their family needing care; people are distinct individuals; nursing is a form of action in order to meet self-care requisites by using valid methods and related sets of ideas given at the facilities. This is further discussed under Theme 4 in Chapter 4.

It is very important for a health care worker to identify the responsibilities and the needs of a patient at the start of the treatment. Health care workers should give all the information to the patient, elaborating on all the options that could be carried out and letting them make their own decisions. The health care workers should not allow patients to make bad decisions. They should guide them and explain the consequences. Unfortunately, Health care providers often give health education at the time of diagnosis then let patients continue with what was discussed on the first day of diagnosis, without empowering and encouraging them at subsequent visits.

In some facilities there are no pharmacists or pharmacy assistants. This means that the nurses are responsible for dispensing treatment to patients. A course relevant to that is needed so that nurses can give proper instructions.

This leads to the necessity of all the health care providers needing to identify their responsibilities towards diabetic patients. For example, enrolled nursing assistants may give health education. Professional nurses may assess and classify the patient's condition correctly. Pharmacists will see to it that patients get the correct prescribed medication. The staff should work together in achieving a goal. When diabetic patients do not avail themselves of the care of health facilities on their appointment dates, home-based carers should trace the patients.

Once patients have been diagnosed, the health education of the diabetic patients together with their families, decision-making and outreaches need to be performed by the health care providers. Every member of staff of the clinic should provide the patients with the required information. It should be everyone's responsibility to equip the patient with information about a healthy life-style and its management.

Gershater (2011) conducted a study in Sweden about diabetic care in home nursing services and revealed that registered nurses should be responsible for the vulnerable patients' group, suffering from multi-organ diseases and unable to maintain their own diabetes self-care. Insufficient documentation of diabetes care may lead to impaired quality care. It has been suggested that improved documentation should include structure of planning, performing and evaluation of metabolic control - blood glucose measures, nutritional status, regular blood pressure measurements, protective foot care and health education of health care assistants.

2.3.4 Self-care requisite

Orem's theory shows that the main goal in the treatment of all diseases is to increase the patients' performance and to help them achieve a satisfactory quality of life. This would only be possible through providing self-care programmes and finding appropriate solutions to help patients (Hemmati, Hashemlo & Khalkhali, 2012).

Patients who lack the support of other family members may lead to their not coming to clinics at recommended times and this may aggravate their condition and lead to complications. Coming to clinics can help them get proper management advice and suggestions for the prevention of stress which can cause hypertension and other complicated conditions. The support of multidisciplinary teams towards promoting the health of diabetic patients can play a major role in reducing complications. The involvement of guardians and family members is aimed to monitor and improve the health of the diabetic patient. Young diabetic patients together with the home-based carers could be trained to teach and educate those in need. Sometimes facilities run out of medication and maybe when there are trained diabetic patients, this situation could be managed without treatment.

The study has revealed that patients have an idea about diet and exercise, yet these ideas are not being used because of a lack of thorough knowledge. It is up to the

diabetic patient to make clear decisions once they have information about the condition, to make sure the condition is not worsening. Tan and Magarey (2008) indicate that an important part of daily care in patients with diabetes is provided by the person himself or a family member. This means that learning self-care skills is necessary for patients with diabetes.

There are no support structures in the community or in the facilities that focus mainly on diabetic patients. The provision of structures specifically for diabetic patients might play a major role in promoting health. Community structures could be a half-way clinic where the patients may receive services through the help of peer groups and home-based carers. As there are no structures for diabetic patients, the defaulter rate might not reduce as the patient might wait for the next appointment date when they might find that the clinic has no medication. This may lead to disappointment and loss of diabetic patients to the clinics.

As diabetes mellitus emerges as a major public health concern, self-management continues to grow as a crucial approach to managing long-term conditions. Self-management research translates into practice in preventing illnesses and promoting wellness because chronic conditions are generally slow and long in their duration. Self-management can offer those living with chronic conditions the means to maintain or even to improve their capacity to live well for the course of their lives (Gough *et al.*, 2014).

2.4 INTERGRATION OF OREM'S THEORY INTO OTHER FACTORS

Factors integrated within Orem's Theory are explained with reference to the following:

2.4.1 Prevalence of diabetes mellitus

Diabetes Type 2 is an increasingly serious health problem among African-American women. Consumption of sugar-sweetened drinks has been associated with an increased risk of diabetes. Regular consumption of sugar-sweetened drinks and fruit drinks is linked to an increased risk of Type 2 diabetes mellitus in African-American women (Palmer *et al.*, 2008).

Globally, an estimated 422 million adults are living with diabetes mellitus. The latest 2016 data from the World Health Organization indicate that diabetes mellitus occurs throughout the world but is more common in developed countries. The increase of

incidences in the developing countries follows the trend of urbanization and lifestyle changes, including increasingly sedentary lifestyles (World Health Organization 2015).

The prevalence of diabetes mellitus in the South African population in Limpopo Province adults has increased from 2009 to date. Most people have poor management practices concerning foot care and show a lack of annual eye examinations because a substantial number of people believe that diabetes mellitus can be cured. Most people do not believe that diet can help in the management of diabetes mellitus. This has a negative effect in that many patients quit treatment once the disease is under control (Shilubane, Netshikweta & Ralinen, 2016). Most diabetics in South Africa have Type 2 diabetes, however many cases go undiagnosed as there are a very few symptoms initially. Symptoms of diabetes include fatigue, excessive thirst and frequent urination, slow wound healing and blurred vision. As these symptoms develop gradually and may be very mild, many people fail to recognise them as warning signs of diabetes. It is estimated that five million South Africans have pre-diabetes, a condition where insulin resistance causes blood glucose levels to be higher than normal, but not yet high enough to be diagnosed as Type 2 diabetes (Health24, 2017).

2.4.2 Effects of education on diabetes mellitus' prognosis

The study conducted in Egypt by Kaira (2001) about patient education for diabetes control shows that education of people with diabetes is the cornerstone of its management.

Health literacy is essential for effective access to care, self-care of chronic conditions and maintenance of health and wellness. It is also fundamental to healthcare, enabling individuals to have a more active role in decision-making about how to manage the disease. Lack of health literacy skills blocks understanding action in terms of acquiring health information (Parker & Jacobson, 2012).

Misinterpretation of medication instructions on medication labels by diabetes mellitus patients is a concern because it shows a lack of health education. It was found that almost half the patients attending primary healthcare facilities misunderstood common dosage instructions on medication container label (Davis, Jackson, Middlebrooks, Paker & Wolf, 2009). Davis *et al.* (2009) further indicate that since

diabetic patients are increasing the number of medications they are taking, especially the elderly, it is more critical for them to be able to accurately interpret the medication instructions through health education to ensure proper and safe use of the medication..

2.4.3 Knowledge of patients about managing diabetes mellitus

Most of the diabetic patients had little knowledge about diabetes and its management and a negative attitude towards self-management. The importance of exercise and the efficacy of herbal therapy in diabetes control were things they understood. This shows that there is a serious gap in the provision of basic educational services to most diabetes patients who attend PHC facilities (Kaira, 2001).

Etukudo (2013) conducted a study related to diabetes mellitus in a clinic in the Mokopane Hospital, Limpopo Province and found that patients had scanty poor knowledge about diabetes mellitus as they did not practice self-care to manage their disease. Eighty-six percent of the participants indicated that they had adjusted their diet since being diagnosed with diabetes mellitus. Most of the participants indicated that they did not smoke, and that they took their treatment conscientiously. Only 29% of the participants indicated that they always practised self-care activities. This study concluded that most of the participants did not practise self-care and had poor diabetic control because of a lack of knowledge about what they could do to help themselves.

2.4.4 Predisposing factors for diabetes mellitus

A newspaper, The Conversation (2016), indicates that, as South Africans have become more urbanised, exposure to high caloric processed food has increased and the rate of diabetes has increased with it. Being able to buy processed food products is often seen as a mark of personal and material success. It has been recommended that people should not consume more than 12 teaspoons of added sugar per day (World Health Organization, 2011) but little attention is paid to having a healthy diet.

Studies show that physical activity as a predisposing factor decreases the risk of diabetes mellitus. This finding has been supported by randomised trials where lifestyle interventions, including increased physical activity, have been more

beneficial effect than Metformin therapy in reducing the risk of diabetes (Hjerkind, Stenehjem & Nilsen, 2018).

Non-adherence to regular follow-up appointments by diabetic patients with health care providers might lead to any long-term complications and metabolic control to prevent the progression of complications associated with diabetes may be delayed. There are several essential self-care behaviours which people with diabetes can use to predict good outcomes. For example, being physically active and being compliant in taking their medication (Shrivastana *et al.*, 2013).

2.4.5 Diabetic care and traditional healing

Semenya and Potgieter (2014) state that the Bapedi traditional healers in Limpopo Province play a vital role in the primary health care of rural inhabitants of the Limpopo Province, South Africa. The current study shows that Bapedi traditional healers could play a leading role in both the preservation of indigenous knowledge and in the primary health sector. The concern is that there is a lack of scientific research into the traditional methods employed by most of these healers to determine the efficacy of these remedies, thus indicating a need for scientific investigations to establish their safety and effectiveness. The medicines produced are taken orally for a week. It was found that Bapedi traditional healers do have a basic understanding of the cause and the remedial actions required in the treatment of diabetes mellitus (Semenya, Potgieter & Erasmus, 2012).

2.4.6 Challenges experienced by patients in the management of diabetes

Findings by Mothiba, Malema and Jali (2014) in Polokwane municipal clinics reveal that there are challenges experienced by diabetic patients regarding compliance with diet and the preparation of meals by family members. Therefore, they recommend that educational programmes for patients and family members regarding diet be intensified, giving reasons why certain foods should be consumed. Advice should be given about alternative cheaper fruits and vegetables during different seasons.

2.4.7 Self-management support

Any self-management support must be appropriate for the person suffering a Long Term Condition (LTC) and their family. It should be developed in partnership with the person with LTC and focus on reducing health risk (Bratzke, Muehre & Kehl, 2015).

Patient centred: Self-management programs should empower people with a LTC to take the leading role in their care planning and should support them to work in partnership with their health care practitioners to set goal and action plans (Bratzke *et al.*, 2015).

Psychological support: It may be necessary to provide psychological support so that people who can, self-manage (Bratzke *et al.*, 2015).

Cultural-relevance: Programmes should be culturally sensitive and appropriate for diverse ethnic groups (Bratzke *et al.*, 2015).

Systematic follow-up: Primary health care providers should undertake clinical assessments and follow-up care (Bratzke *et al.*, 2015).

2.4.8 Self-management education

According to Long, Ritter, Moreland and Laurent (2017), there are 80% of older adults who have at least one chronic disease, and 68% have at least two. Many adults with conditions such as arthritis, asthma, diabetes mellitus, lung disease, heart disease and osteoporosis, struggle to find ways to manage their conditions. Chronic Disease Self-Management Education (CDSME), developed by Stanford University has proved to help older adults better manage their chronic conditions to improve their quality of life and reduce health care costs.

CDSME workshops are designed to help people gain confidence in their ability to control their symptoms and learn how their problems affect their lives. The highly interactive workshops are six weeks long, meeting once a week for 2½ hours and they are facilitated by a pair of leaders, one who is not a health professional, but both with chronic diseases (Long, Ritter, Moreland & Laurent, 2017).

2.4.9 Steps to support self-management in patients with chronic illness

The following steps are outlined by Thoesen and Newton (2005); McGowan, Fredericks, Gail and Des Roseirs (2009); Boxer and Snyder (2009):

Motivational interview

The interviewer uses directive questions and reflective listening to encourage the patient to participate. This style of interview, asking the patient provocative questions and discussing the responses, often helps uncover important self-management

issues and has proved effective in preventing relapse in patients with alcohol dependence.

Identifying barriers

A common barrier to successful self-management is that chronic conditions often occur as co-morbidities. Patients with chronic diseases who are asked to identify barriers to self-management often cite examples such as aggravation of one condition by the symptoms or treatment of another and problems created by multiple medication regimens.

Practice changes

Physicians and other health care professionals can further support patient self-management by making changes in practice systems. Group visits could be scheduled for interested patients with comparable chronic illnesses (e.g. diabetes mellitus) so that they can discuss self-management for their illnesses with others who are in similar situations. Disease management guidelines could be used as prompts for patient reminders and to structure planned visits.

Community interventions

Patients with arthritis have reported improved pain control and mood through participation in programmes emphasising four efficacy-enhancing strategies: mastery of skills through learning and practice, modelling by inspirational role leaders, encouraging participants to attempt more than they are currently doing and re-interpretation of symptoms to distinguish pain caused by the disease from that caused by therapeutic exercise. Diabetes mellitus requires life-long self-management with regular health professional support and supervision. Estimates of the prevalence of failed appointments at diabetes clinics vary but at least 10% appear to be lower than that of non-chronic conditions. Yet the patients who do not attend, exhibit significantly higher risk factors and complications than those who keep their appointments.

2.4.10 Self-management programme

Many clinicians are puzzled as to optimal strategies for their patients. As a consequence, the American Diabetes Association and European Association for the

Study of Diabetes convened and developed recommendations for anti-hyperglycemic therapy diabetic patients, excluding pregnant diabetic patients with Type 2 (Inzucchi, Bergenstal, Diamant, Ferrannini & Matthews, 2012).

Gregg, Callghan, Hayes and June (2007) report that patients, in a low-income community health centre with Type 2 diabetes mellitus, taking a one-day education workshop as part of their diabetes medical management, were randomly assigned either to education alone or to a combination of education and Acceptance and Commitment Therapy (ACT).

Both groups were taught how to manage their diabetes, but those in ACT also learned to apply acceptance and mindfulness skills to difficult diabetes-related thought and feelings. Compared with patients who received education alone, after three months, those in the ACT were more likely to use these coping strategies and reported better diabetic self-care (Gregg *et al.*, 2007).

2.4.11 Effects of self-management support

The effects of Self-Management Support (SMS) across outcomes correspond the chronic care model were examined in United Kingdom (UK). A total of 339 outpatients with poorly controlled diabetes from country-run clinics were enrolled in a three-arm trial. The three-arm trial is effected on SMS structure, process and outcomes among vulnerable patients with diabetes mellitus. The process means interpersonal process of care and outcomes refer to, functional and metabolic behaviour. Patient-centred SMS improves certain aspects of diabetes care and positively influences self-management behaviour (Schillinger, Handley, Wang & Hammer, 2009).

Schillinger, Hammer, Wang, Palacios and McLean (2008) examined whether tailored SMS strategies reach patients in a safety net system and they explored variations in communication methods but shared common objectives, including a behavioural “action plan”. Research was measured using the following three complementary dimensions:

- a) Participation amongst clinics, clinicians and patients,
- b) Patients’ representativeness and

c) Patients' engagement with SMS.

The results provide important insights for health communication and translational research with respect to realizing the public health benefits of SMS and they can inform system level planning to reduce health disparities

Gough and Grady (2014) report that a group of nurse scientist leaders assembled in an American Public Health Association in America to discuss “the science of chronic illness self-management” as the topic of 2013 national nursing research roundtable. The roundtable is an annual meeting whose purpose is to provide a regular forum of communication about the direction and conducting of nursing research. The discussions of 2013's meeting resulted in a set of recommended areas of focus and approaches to advance the field and practice of self-management for chronic illness.

A chronic disease, such as diabetes mellitus, represents a substantial burden for the patient. In order to accomplish good self-care, patients need to be qualified and able to accept decisions and self-manage a disease on a daily basis. The level of knowledge about the disease empowers the patient to act as an equal partner in the management of the disease (Turk, Palfy, Rupel & Isola, 2012).

2.4.12 Factors contributing to non-adherence

Among the factors contributing to non-adherence related to poor health is the complexity of medication therapy. Gebrehiwat, Jemal and Dawit (2013) in their study about non-adherence and associated factors among Type 2 diabetic patients found that diabetic patients on a complex regimen were three times more non-adherent than those on a simple regimen. According to this study, simplifying diabetic medication therapy, to at least single or two medications, could make it easier for patients to follow. Consequently, non-adherence will be history in diabetes mellitus patients, if poor health literacy is the only problem.

Dunning (2014) reports the following as other contributory factors to non-adherence in diabetes mellitus patients:

- Illiteracy coupled with low health numeracy. This is irrespective of whether an individual is generally literate or not.

- Unclear teaching about medication, particularly if the teaching is not personalised for each patient or for each medication.
- Some patients do not interpret medication labels and medication information correctly. This is common even when labelling requires minimal reading skills. For example, instructions to take medicine twice daily (which is vague since 'daily' means once per day) or every 12 hours means individuals must make further decisions about what the words actually mean. "Take medication as directed" is even more difficult to interpret and the instructions need to be broken down further. Patients are more likely to understand more specific medication administration times such as 08 a.m., 06 p.m. but indicating times may be useful to or suit some individuals better than others. Using multifaceted medication regimens independently predicts the probability that patients will interpret medication instructions, advice or education incorrectly.

2.4.13 Accessibility of health care facilities to diabetic patients

Distance from the hospital is one of the variables that has been found to be significantly linked to the adherence status of the respondents. This applies significantly to patients from distant areas, especially when accompanied by poor infrastructure, like lack of transport. In a study of non-adherence in diabetic patients, conducted in Ethiopia, low income and low educational levels were found to impact negatively on the treatment regimen. Different studies have identified education and income as major socioeconomic determinants of adherence. More educated persons are more adherent to the therapy (Kassahum, Gashe, Mulisa & Rike, 2016).

2.4.14 The relationship between acceptance and dietary recommendations

The level of adherence to dietary recommendations in the form of regular blood glucose testing is an important factor influencing adherence to diet. Regular glycaemic control is interrelated with the introduction of considerably smaller lifestyle modifications than changes in diet. However, numerous dietary restrictions do need to be introduced (Jawarski, Panczy, Cedro & Kucharska, 2017).

2.5 CONCLUSION

This chapter discusses the Self-Care Theory and the strategies used by diabetic patients under treatment to maintain their quality of life. The theory explains the human and material resources that an individual can use to motivate and monitor his/her well-being. Empowerment and the involvement of health care providers with patients with diabetes mellitus can be effective in improving blood glucose levels, diabetes knowledge and other requirements for diabetic patients. This chapter outlines the reviewed literature about diabetic strategies used by diabetic patients and the theoretical framework in supporting them.

CHAPTER 3

RESEARCH METHOD AND DESIGN

3.1 INTRODUCTION

This chapter outlines the research methodology used in this study of strategies used by diabetic patients under treatment to maintain their quality of life. The patients were interviewed at the Sekhukhune clinics of the Elias Motswaledi municipality. It explains the procedures that were followed to execute the study, i.e. the research method, the research design, the population and sampling, data collection, data analysis, measures to ensure trustworthiness and ethical considerations.

3.2 RESEARCH METHOD

According to Creswell (2014), a qualitative method is an inquiry process of understanding based on distinct methodological traditions of inquiry that explore a society or human problems. The researcher builds a complete holistic picture, analyses words, reports detailed views of informants and conducts a study in a natural setting.

The inquiry process in this study includes conducting semi-structured interviews with diabetic patients. The strategies described by the patients were easily described through the qualitative method as it allows full communication between the researcher and the participant. Through conducting this qualitative study, the researcher was able to ask probing questions to seek clarity on the information which was provided by participants. The chosen method allowed the researcher to use other tools to help gather the data. For example, a voice recorder, observation and field note.

The researcher was interested in studying the self-management strategies used by diabetic patients under treatment to maintain their health. The participants were patients of the primary health care facilities in the Sekhukhune District, Limpopo Province. The method used enabled the researcher to elicit more information about the phenomenon studied.

3.3 RESEARCH DESIGN

The research design that guided the study is described as follows:

3.3.1 Phenomenological Design

A phenomenological design studies effective, emotional and human experiences. These are better understood when seen from the eyes of those who have experienced the phenomenon. It uncovers and interprets the inner essence of participants. The final product of a phenomenological inquiry is a description that presents the essence of the experiences of individuals related to the phenomenon studied (Worthington, 2013).

A phenomenological approach was used in the study because it allowed the researcher to explore and describe the original ideas and experiences of the diabetic patients under treatment on how they manage themselves whilst living with Type 2 diabetes. This enabled the researcher to record their unique experiences. The design allowed the researcher the opportunity to be engaged with the participants face-to-face and focus on what was happening in their individual lives through asking them questions and allowing them time to describe their experiences.

The researcher could sit with the participants in a space where they felt free to give all the information they had. This made it easy for the researcher to discover the ideas and knowledge of the strategies that the patients used to maintain their healthy lives. This design allowed the researcher to engage with the patients for long enough for clear answers to emerge.

The phenomenological design was used to discover the beliefs the diabetic patients held about the condition, their knowledge about diabetes mellitus and often what their physicians said they should or should not do. In the words of Polit and Beck, 2012, this type of design allowed the researcher to focus on the lived experiences of humans.

Information was only collected through the phenomenological approach because it allows the opportunity to ask questions for clarity so that the participants could clarify all they knew.

According to Creswell (2014), the phenomenological design has developed a composite description of the “what” and “how” they lived their experiences.

3.3.2 Explorative Design

Churchill and Lacobucci (2010) define an exploratory design as research conducted to gain new insight, discover new ideas and to increase knowledge about a phenomenon. In their study, the researcher explored the experiences of midwives after maternal death, through probing and asking follow-up questions. The researcher gave the participants enough time to voice their experiences while observing any feelings and emotions and asked for clarity where it was needed.

3.3.3 Descriptive Design

The researcher gave the participants all the time they needed to explain their strategies. This meant that, some patients described other conditions, as they are dealing with more than one chronic condition in their lives. The descriptive design allowed the researcher to understand their experiences in depth.

A descriptive design was also used to identify the strategies in practice and to identify the gaps where specific strategies were supposed to be followed. The researcher used the descriptive to determine the ideas that diabetic patients have about the condition (Burns & Groove, 2011).

The participants described the strategies that were supposed to be followed and explain that they were not using them due to the limitations explained in Chapter 4.

3.4 POPULATION AND SAMPLING

The population is the entire group of persons of interest to the researcher, in other words, that meet the criteria that the researcher is interested in studying (Brink *et al.*, 2018).

In this study, the population was diabetic patients who came for consultations at the clinics of the Sekhukhune District in the Elias Motswaledi municipality.

Sampling is the process of selecting people from a population to participate in a study, in order to obtain information regarding a phenomenon in a way that represents the population of interest (Brink *et al.*, 2018). A non-probability purposive sampling was used in the study because the participants were selected according to

inclusion criteria. All participants who were diagnosed with Type 2 diabetes were purposely selected to participate in the study because the researcher thought they had relevant knowledge that they could share during the interview sessions.

The researcher aimed to recruit 12 patients from each clinic but the exact number was determined by data saturation. The researcher did not get to the 12th interview, yet the data saturation was reached before the 12th participant in all facilities. Patients were recruited from five (5) primary health care facilities where they come for treatment. The researcher, in conjunction with the clinic manager and professional nurses in some facilities, checked patients' files to choose the ones who met the selection criteria of the study. The criteria related to the diagnosis and the number of years under treatment.

3.4.1 Inclusion criteria

Inclusion criteria refer to the characteristics the prospective subject has in order to be included in the study (Brink *et al.*, 2018). In the current study, the inclusion criteria were mainly that diabetic patients who had been under treatment for more than a year and who came to the primary health care facilities for consultations, to collect medication and for reviews.

3.4.2 Exclusion criteria

Salkind (2010) define exclusion criteria as a set of predefined definitions that are used to identify subjects who will not be included or who will have to withdraw from a research study after having been included. Together with inclusion criteria, exclusion criteria make up the eligibility criteria that rule in or out the participants in a research study. In the current study, exclusion criteria included all the patients who were not diabetic and were present when the researcher explained the study as a way of recruiting participants, diabetic patients who were not able to see or hear properly those who needed assistance from their families and finally, patients who are being treated for diabetes. Newly diagnosed patients, about 11 months and less, were excluded because it was assumed that they had not accumulated much information about the condition.

3.5 DATA COLLECTION

Data collection is the process of gathering and measuring information on variables of interest, in an established systematic fashion that enables one to answer stated research questions, hypotheses and evaluated outcomes (Brink *et al.*, 2018).

3.5.1 Preparation of the research field

Kilavuz (2017) claims that, regardless of the type of research field, a list of contacts should be developed and networking started ahead of time. The researcher should get in touch with the people and institutions in the field site even before he/she goes there. This eases the first difficult days of the field work. All this preparation can be done while at the home institution. It is always better to make a trip to your field site to lay the ground work before starting your actual field work.

The researcher called the operations managers at facilities where the data was to be collected to arrange the visits. She then visited the facilities before she started collecting data, to deliver the permission letters from TREC, Department of Health-Provincial and Department of Health-District. In addition, the researcher observed the environment. The operations managers helped the researcher by identifying the days when the relevant participants would be available.

3.5.2 The interview site

Participants were recruited from the morning prayer sessions at the clinics, and in cases where the researcher found that they had already had morning prayers, the patients' files were scrutinised while patients were waiting for their medication. Most of the primary health care facilities have a specific day (Monday or Tuesday) when patients with certain conditions come for reviews and to collect their medication. During that time, the researcher, with the help of operations manager, introduced and explained herself to everyone who had come to the health care facility. There was a private room where the researcher waited for the participants who wanted to be interviewed. Most of diabetic patients were willing to be interviewed and came forward to the researcher's room and asked to be interviewed. Everything about the study was explained in detail in the private room.

3.5.3 Interview

The researcher collected data through semi-structured interviews which were used to determine the self-management strategies patients used to maintain their healthy

lives using a voice recorder and field notes so as to recall the answers during data analysis. Polit and Beck (2010) describe semi-structured interviews as open-ended interviews during which the researcher is guided by a list of certain topics to address.

The researcher, together with the operations managers in all the facilities where the study was conducted, arranged a private room to have a table and two chairs. On some occasions, the researcher used a bed as a table because of the structure of the room.

The interviews were conducted in a private room to promote privacy and comfort. The question that was asked was: “*What are the strategies that diabetic patients use to feel as normal as possible?*” The longest interview with the participant was approximately 30 minutes. The interviews were conducted in English and Sepedi. Some participants mixed the two languages but they were understood clearly. In the interview guide, a few questions were noted to ask the participants during interview sessions conducted. (see Annexure H). Semi-structured interviews were used with the aid of voice recorder, informed consent forms, an interview guide, a pen and a paper were placed ready for use to write field notes about all nonverbal information.

3.5.4 Communication strategies used

Interpersonal relationships were developed by the researcher to obtain more information without threatening or forcing the participants to speak. The researcher displayed a caring, warm and non-judgemental attitude when communicating with the participants during the interviews (Watson, McKenna, Cowman & Keady, 2008).

During the interview the researcher used many communication techniques like listening skills, observation, smiles, language choice and honesty. She introduced herself to the participants and gave the participant her true identity through a name tag that she displayed as well as an information leaflet in case of queries. She used the *smile* technique to relieve nervousness in the participants so that they would be more open about what they were discussing

Listening skills was the perfect technique used because the participants felt respected by the researcher and gave all the answers they could. The listening technique was accompanied by non-verbal communication, e.g. nodding.

The researcher used an *observation technique* to see if the participants felt free to explain what they had been asked, especially those patients whose files had been scrutinised and it had been found that they had skipped some appointments. Some participants avoided eye-contact which was understandable as in some cultures, eye-contact between a young person and an older one shows disrespect. The observation technique helped the researcher to check when the patients did not understand the question clearly and enabled her to explain in a simpler way.

The *Language preference* of the participants was used to make the questions clearer and more understandable. Participants felt free to communicate in their own language. Some patients mixed the languages but that was fine. The researcher allowed them to use the language that they preferred.

The researcher explained the problem statement clearly to the participants so they could be *honest* in their answers

Inductive reasoning approach was applied where the researcher attempted to pose the questions in a simple manner for the participant to answer relevantly and give in depth knowledge. Researcher poses such questions and observes the level of understanding of the participant, because other participants have a little knowledge on the topic. It was done to assist the researcher to generate in-depth information about the phenomenon studied and also come up with a conclusion.

3.6 DATA ANALYSIS

A qualitative data analysis is the process of examining qualitative data to derive an explanation for a specific phenomenon. It gives an understanding of research objectives by revealing patterns and themes in the data (Haregu, 2012).

Field notes and voice recordings were used as a point of reference during data analysis. The data was transcribed from Sepedi to English and codes were developed from the information. The researcher analysed the data using Tesch's open coding method and in the final stage of this method themes and sub-themes emerged and were presented in columns.

An independent coder, experienced in qualitative research, was requested to analyse the raw data independently. A meeting was held between the independent coder and the researcher to reach consensus about the categories identified.

The data were analysed in accordance with Tesch's data analysis approach (Polit & Hungler, 2011), as outlined in the steps that follow:

Step 1

- Firstly, the researcher listened to the recorded interviews, reviewed the field notes and transcribed the information verbatim. The entire transcripts were then read carefully to obtain a sense of the whole and some ideas were noted.

Step 2

- One interview was selected and read to try to absorb the information, writing down thoughts that came to mind. A table was made with all the topics and sub-topics that emerged. The researcher read another transcript, trying to relate it to the first one. Other topics and sub-topics that emerged and were added to the previous ones.

Step 3

- The researcher then made a list of all the topics. Similar topics were grouped together to form themes and sub-themes. The themes and the sub-themes were then named, using sentences that best described all the grouped sub-themes. Where necessary, the themes were changed into sub-themes and the sub-themes also were rearranged as themes.

Step 4

- The themes were abbreviated as codes, which were written next to the appropriate segments of the transcripts. The researcher tried this preliminary organising scheme to see whether new themes and codes emerged. Whenever a new sub-theme emerged, it was added to the appropriate theme.

Step 5

- The researcher came up with the most descriptive wording for the themes and sub-themes. Lines were drawn between themes to show their relationships.

Step 6

- The researcher made a final decision about the naming of each theme and separated the themes and the sub-themes. The themes were arranged in a manner that outlined the diabetic patients' ideas, knowledge, challenges and recommendations.

Step 7

- The data materials that belonged to each theme were assembled and a preliminary analysis was made. These data materials were further supported by literature from previous studies about the ways that diabetic patients conduct themselves locally, and in different countries.

Step 8

- The researcher came up with a summary of the themes and sub-themes and the data were sent to the independent coder. The researcher and the independent coder's common themes and sub-themes were summarised and are discussed at length in chapter four.

3.7 MEASURES TO ENSURE TRUSTWORTHINESS

Guba's model of trustworthiness developed in 1985 was used.

3.7.1 Transferability

Transferability refers to the probability that the study findings have meaning to others in similar situations. Transferability is also called "fittingness", for it determines whether the findings fit in or are transferable to similar situations (Babbie & Mouton, 2009). It is the extent to which the results of the study can be applied to other situations. According to Beck *et al.* (2012), the researcher should make many decisions on how to control confounding variables. Transferability was ensured through a thick description of the research method used and the purposive sampling chosen to include participants in the study.

The findings in this study cannot be generalised to other settings because this study was conducted in only one municipality of the district, therefore, the findings cannot be generalised to South Africa as a whole. Since the findings of a qualitative project

are specific to a small number of individuals, it is impossible to demonstrate that the findings are applicable to other situations and populations. To allow transferability there must be sufficient details of the context of the fieldwork for a reader to be able to say it prevails in another similar with which he/she is familiar (Shenton, 2016).

In this study the number of individuals interviewed depended on the data saturation, thus, not a large amount of group was interviewed.

3.7.2 Dependability

Dependability is met through securing credibility of the findings. It is the stability of data over time and is obtained through a stepwise replication and inquiry audit. It implies that if the study can be repeated in the same context, with the same methods and the same participants, similar results would be obtained (Polit *et al.*, 2011). It is a criterion that is met through obtaining credibility and cannot be present without credibility (Burns & Groove, 2011). In the study, dependability was ensured through the help of a supervisor, who is a professor, and a co-supervisor who is currently writing a PhD.

Dependability requires the researcher to use methods that can yield the same results if repeated in the same context (Shenton, 2016).

Non-probability sampling was used in this study, together with semi-structured interviews with a schedule guide, when data was collected from diabetic patients under treatment in different clinics. After data collection, the verbatim transcripts were then sent to the independent coder to analyse and to the supervisor for a quality check.

3.7.3 Confirmability

The purpose of confirmability is that the evidence and thought processes will show another researcher the same conclusions as in the research context (Burns & Grove, 2011). In this study, confirmability was ensured using an independent coder.

In this research, bias was avoided through the use of an interview guide. It was prepared before the collection of data and was used for all the participants, with probing questions to their answers. This means that there was no bias, as all the participants were asked the same questions. The voice recorder is available to confirm that data were collected from participants themselves. Investigator bias was

avoided by using different tools to collect data, i.e. a voice recorder, interviewing and field notes. The literature was also reviewed to compare the results with previous findings in different environments.

3.7.4 Credibility

Credibility deals with the question, “How congruent are the findings with reality?” It implies confidence in the truth of the findings. In this study, credibility was ensured by prolonged engagement with the participants during semi-structured interviews to get correct information over a period of two months (January-February 2018). That was done until data saturation was reached while the diabetic participants were given a chance to explain the strategies used to maintain their quality of life.

Credibility involves the researcher developing early familiarity with the culture of the participating organisms. In this study, the researcher contacted the managers of the clinics where the study was to be conducted for arrangements and dates when the patients would be available. The researcher then went to the clinics and prepared the interview space and delivered approval letters for the collection of data. She then introduced herself to the participants, and those who were interested followed her to the interview room (Shenton, 2016).

In this study, the research methods explained above were adopted and the interview guide and the research question were followed as they were. There was prolonged engagement between the researcher and the participants to understand the in-depth strategies they followed. However, some participants simply came to the interview room to be interviewed and were not interested in sharing information. This was recognised through observation.

3.7.5 Summary of strategies to ensure trustworthiness

STRATEGIES	POSSIBLE PROVISION MADE BY THE RESEARCHER
Transferability	Provision of previous research Non-probability purposive sampling
Dependability	Employment of different methods In-depth description of methodology
Confirmability	Involvement of supervisor Independent coder Written field notes Voice recorder
Credibility	Adoption of appropriate methods Prolonged engagement Non-probability sampling of participants Debriefing between researcher and clinic manager and the staff

3.8 ETHICAL CLEARANCE

The research proposal was submitted to the Turfloop Research Ethics Committee (TREC) for ethical clearance. Permission to collect data and to conduct the research in the primary health care facilities of Elias Motswaledi municipal was requested from the Limpopo Department of Health and the Sekhukhune District Office.

The following aspects of ethical clearance were followed adhered to for the study:

3.8.1 Permission to conduct the research

Ethical clearance was obtained from the Turfloop Research Ethics Committee (TREC). Written permission to collect data in the Sekhukhune District was obtained from the Limpopo Provincial Department of Health. Furthermore, permission was obtained from the operations managers in the Elias Motswaledi municipality clinics, based on the presentation of the permission letter from the Provincial Department and TREC, before commencing the interview sessions.

3.8.2 Informed consent

Informed consent is a legal procedure to ensure that the participants are aware of all the potential risks and costs involved in the study (Polit & Hungler, 2011). The consent form included the title of the study, its aim and objectives, a brief description of the study and the procedures. A consent form was given to the participants before commencement of research; the participants were made aware that they had the right to withdraw at anytime they wished and that participation was voluntary. Permission to use a voice recorder was granted by the participants.

3.8.3 Confidentiality

Confidentiality refers to the researcher's responsibility to prevent any data gathered during the study being linked to the individual participants or divulged or made available to any unauthorised person (Brink *et al.*, 2012). In the study, confidentiality was ensured by not disclosing the information to any other person not involved in the study. Only the supervisor could access the information collected.

3.8.4 Privacy

Privacy refers to the freedom of an individual to determine the time, extent and general circumstances under which private information might be shared with or withheld from others (Burns & Grove, 2011). A private consulting room was used and one participant at a time was allowed during the interview sessions. No one else was allowed in the room during the proceedings, to maintain privacy of the participant.

3.8.5 Anonymity

Anonymity refers to the researcher's act of keeping the participants' identity secret with regard to their participation in the research study (Brink *et al.*, 2012). Anonymity was ensured by not using the participants' names, letters of the alphabet and numbers were used to provide each participant with a code name. Code names were used when discussing the findings and real names were not attached to the participants' information.

3.8.6 Avoidance of harm/beneficence

The principle of beneficence advocates doing good and avoiding harm to research participants (Botma *et al.*, 2010).

The participants were informed that there would be no risks or discomfort to them in sharing their experiences during the unstructured one-on-one interview sessions. Participants were made aware that they could terminate their participation in the research study whenever they felt that they could not continue and that they would not be forced to answer questions when they felt that such questions were violating their rights. Participants were informed that field notes would be written during interview sessions, a voice recorder would be used to record all the interview sessions and that the recordings would be made available only to the researcher, the appointed independent coder and the research supervisor.

3.8.7 Justice

Justice refers to fairness and equity. One aspect of the principle of justice concerns the equitable distribution of the benefits and burdens of the research (Botma *et al.*, 2010). All participants were treated fairly and equally during this study. The participants were selected for reasons directly related to the problem being studied, and not for their easy availability. The researcher honoured all agreements, including adherence to appointment dates and times, being punctual, and terminating the data collection periods/sessions as agreed with the participants (Burns & Grove, 2011).

3.9 CONCLUSION

In this study, a qualitative, phenomenological, explorative and descriptive research approach was used, with the aim of determining the self-management strategies for maintaining a healthy life for diabetic patients on treatment. A non-probability purposive sampling was used to identify the relevant participants for the study. Semi-structured interviews, with a schedule guide, were used to collect data. The interviews were recorded using a voice recorder, then later transcribed to develop themes and sub-themes. Tech's open-coding procedure was used in analysing the data (Polit & Hungler, 2011).

CHAPTER 4

PRESENTATION AND DISCUSSION OF THE RESEARCH FINDINGS

4.1 INTRODUCTION

The previous chapter focuses on the research design and methodology. The purpose of this chapter is to present and discuss the research findings about the self-management strategies used by diabetic patients under treatment in the Sekhukhune district of the Elias Motswaledi Municipality. Four themes and their sub-themes emerged. Each theme and sub-theme is discussed and supported by direct quotes from the transcripts. The quotes from the participants are indicated in *italics* in the discussion of themes and sub-themes. The participants were all black from rural areas. Literature is presented to support the findings.

4.2 DEMOGRAPHIC PROFILE

The aim of presenting demographic information is to provide a description of the participants' characteristics. The demographic profile of the interviewed participants is as follows:

Total number of diabetic patients interviewed	19
Age range	
25-35	01
36-45	03
>45 years	15
Marital status	
Single	11
Married	08
Level of education	2 retired teachers 1 professional nurse 1 scholar 16 illiterate pensioners
Period of treatment	>12 months (19 participants)

4.3 DISCUSSION OF THEMES AND SUB-THEMES

The following themes and sub-themes emerged from the data analysis using Tesch's open-coding method:

Main themes	Sub-themes
1. Explanation of self-management strategies maintained by diabetic patients	<p>1.1 The importance of adherence to diabetic diet viewed as important by patients</p> <p>1.2 Management of own stress levels leading to maintaining normal glucose levels</p> <p>1.3 Adherence to prescribed medications is known as significant to maintain of quality of life</p> <p>1.4 Commitment to adhere to scheduled follow up visits and health care advices</p> <p>1.5 Regular exercise for people with diabetes outlined</p>
2. Knowledge related to self-management strategies amongst diabetes patients	<p>2.1 Existence versus lack of knowledge related to the predisposing factors to developing diabetes</p> <p>2.2 Existing knowledge related to medication for diabetes</p> <p>2.3 Existence versus lack of knowledge related to normal and abnormal glucose levels and testing times</p> <p>2.6 Existence versus lack of knowledge related to emergency care for hyperglycaemia and hypoglycaemia</p> <p>2.7 Existence versus lack of knowledge related to signs and symptoms of diabetes</p>
3. Challenges experienced when living with diabetes	<p>3.1 Co-morbidity with other diseases outlined as problematic</p> <p>3.2 Lack of adherence to diabetic treatment and diet a challenge which leads to severe complications</p> <p>3.3 Scheduled time for taking treatment and food a challenge when not at home.</p>
4. Suggested self-	4.1 Adherence to diet, stress management and

<p>management strategies related to maintenance of quality of life by diabetic patients</p>	<p>maintaining scheduled appointments emphasised</p> <p>4.2 Visit to dietician viewed as important for every newly diagnosed patient</p> <p>4.3 Taking prescribed treatment and diabetic diet emphasised</p> <p>4.4 Every diabetic patient is advised to belong to a support group</p>
---	--

4.3.1 THEME 1: Explanation of self-management strategies maintained by diabetic patients

This theme is divided into five sub-themes which discuss the explanations given by the patients of the condition; it elaborates many different factors which affect the quality improvement and the self-management. Patients experience considerable difficulties in making and sustaining health-related lifestyle changes. Diabetic patients struggle to follow risk management advice even when they are given extensive information (Parry, Peel & Douglas, 2016).

The five sub-themes are as follows:

1. The importance of adherence to diabetic diet viewed as important by patients.
2. Management of own stress levels leading to maintaining normal glucose levels
3. Adherence to prescribed medications is known to be significant to maintain quality of life
4. Commitment to adherence to scheduled follow-up visits and health care advice
5. Regular exercise for people with diabetes

Sub-theme 1.1: The importance of adherence to diabetic diet viewed as important by patients

During the discussions with diabetic patients, they illustrated their knowledge of diet and its benefits. It was observed that patients understand that the diet of a diabetic patient plays a major role in the maintenance of their health, as some indicated that

one can get diabetes from what he/she eats. One diabetic patient explained that he has been controlling his condition through diet not medication. The following quote supports this: *“The diabetes that I have is the one that when I eat anything with sugar then I get sick. I avoid food with sugar and I take a lot of water. I was diagnosed in the year 2010 but I started my treatment in 2015 because I was following a proper diet” (P1).*

Some diabetic patients explained that the dietician gives them a dietary plan but the problem is that they cannot afford the food and, as a result, they eat according to availability. This was confirmed by the patient who said: *“Eish, diet is a problem because I cannot afford the correct diet as I am unemployed (P17).*

Another participant with the same experience of advice from a dietician said: *“It was difficult to accept, but the first step that I took was to go to clinic and fortunately there was a dietician then she educated me” (P9).*

Adherence to a diabetic diet is important for diabetic patients. They are conscious of the diet that needs to be followed. However, they often find it difficult to introduce changes in their diet as, in most cases, new recommendations differ considerably from their current diet. Therefore, the help of a dietician is necessary to point out efficient methods of gaining new dietary habits. It was found that new dietary information was important to patients in helping them adhere to a correct diet (Evert, Boucher & Cypress, 2013).

Moreover, a few patients suggested that food parcels be given to them. One participant reported that he once received food parcels but as time passed they stopped. One patient said: *“South African Social Security Agency (SASSA) provides us with 3 months’ food parcels, yes for 3 months. Then from there we receive them again after 6 months. Sometimes we are given vouchers. Now my food parcels are finished and I went to SASSA because it has been a long time now” (P17).*

Some patients cannot afford a proper diet for the condition and explained that it would be better if they received food parcels from the government, in the same way as a pension. These explanations were based on the following excerpt, amongst others: *“Most of the meal they said I should take I struggle to get because I cannot afford” (P14).*In the UK, there are food banks that were developed and run for people

in need of food to survive, most of the users of the food banks reported that they were unable to afford to buy sufficient food and struggled to manage conditions such as diabetes mellitus (Butler, 2017).

*“I wish government can give us free food-parcels. Government must provide us with food; they cannot give us medication and take them on an empty stomach” (P15).*In South Africa, the prevalence of household food insufficiency is very high compared with the studies conducted in the developed world.

The demand for food parcels and financial support by the participants in the study reflects that the current economic situation in most rural communities and the challenges faced by the participants are the result of unemployment (Adeyini, Yogeswaran, Wright & Longo-Mbenza, 2015).

It is not surprising that many diabetic patients complain about their inability to afford the proper diet because most of them are pensioners. In South Africa, most of the health care facilities are utilised by poor people for free (Mothiba *et al.*, 2014).

Some diabetic patients report that they once received food parcels, even though they came after a few months. Research was conducted in Mpumalanga province and it was found that the food parcels targeted for distribution and provision to elderly people, in the age group 60-79 years, were provided until it was discovered that the food parcels had been mismanaged (Kimuna & Makiwane, 2007). The findings concur with the statement by the participant who had the same experience: *“Yes I received food parcels for 3 months then from there we receive them again after 6 months” (P17).* The Department of Social Development admitted the failure of food parcel distribution and promised to attempt the distribution of vouchers to the beneficiaries in place of food parcels (Luke, 2018).

It was concluded that there is no stable structure or project to supply food parcels to those who cannot afford the correct food and who eat according to availability. Studies conducted in California, United States of America and Texas, of the health impact of food security examined very low food security. In a food pantry sample with a high rate of food insecurity, it was found that diabetes self-management becomes increasingly difficult as food security worsens. The efficacy of interventions to improve diabetes self-management may increase if food security is simultaneously addressed (Ippolito, Lyles, Prendergast & Marshall, 2016).

the diabetic patients interviewed understood the importance of diet in their condition and that is why they felt needed food parcels as they cannot afford. Through the interviews, it was found that many of the diabetic patients received old age grants but they still complained that they could not afford proper diets.

One participant mentioned that he did not live alone so the social grant was not enough. That is why he needed food parcels. He said: *"Yes I receive grant but is not enough because I am not staying alone I am with my grandchildren"* (P15). Another participant mentioned that the social grant was not enough to buy all the necessary foods that were required on the diet as there were many in the family: *"Yes but there is another one with four kids at least she receive child support grant and help us to buy potatoes but the problem is that we cannot eat potatoes everyday"* (P14). The report from Health-E News states that SASSA beneficiaries reported the unaffordability of nutritious groceries in the households. They buy food so that they can eat but cannot consider the nutritious value because they have other needs like school transport (Molelekwa, 2018). According to Stats SA (2012), social grants contribute 42% of household income in poor families, making grants the most important source of income, as wages contribute only 32%.

During the discussion, some patients indicated that they neglected to follow the diet, not because of affordability but because of a lack of interest. This was confirmed by the participant who said: *"I was given a diet to follow here, to be honest am not following it"* (P8). Simmons (2014) claims that, despite the importance of healthy eating in controlling Type 2 diabetes, it is still very difficult to make and stick with changes to the way patients eat. Studies have found that as many as 6 in 10 people with diabetes have difficulty sticking to a healthy eating plan.

Salt intake

The use of less salt in food is known to reduce the chance of developing hypertension. Few diabetic patients explained hypertension as being part of diabetes mellitus. One diabetic patient who is on hypertensive medication, said: *"Yes they teach us about diet, like salt I must not eat salt"* (P12). The researcher assumed that this was because that patient was on both hypertensive and diabetic treatment. The

regular consumption of sugar-sweetened food is known to increase blood glucose as was mentioned by the patients. Many guidelines recommend that patients with Type 2 diabetes should reduce their dietary sodium intake. However, the relationship between dietary sodium intake and the incidence of diabetic complications in patients with Type 2 diabetes has not been explored. However, a reduction of dietary salt intake is encouraged in guidelines for diabetes care in many countries with various goals being set for daily intake of sodium (Horikiwa, Yoshimura, Kamada, Tanaka & Tanaka, 2014).

Physical exercise

Regular physical exercise is also indicated to be another factor which helps manage diabetes mellitus. However, few patients exercise regularly. One participant who thought that physical exercise is important, though not doing it said: “*Ahh... I don't* (meaning exercise).

Sub-theme 1.2: Management of own stress levels leading to maintaining normal glucose level

This sub-theme elaborates on the management of stress in diabetic patients. Patients explain how emotional frustrations affect the control of their blood glucose. This was confirmed by the participant who said: “*I had stress in December because I could not afford clothes and foods for my kids as all the neighbourhood kids usually receive new clothes in December*” (P17).

As part of the interview, some diabetic patients identified one the factors that aggravated or interfered with the control of blood sugar as stress. Patients believe that if people are on diabetic treatment, they are supposed to avoid or do away with stressful situations at all times, as they can raise blood sugar levels. One participant had family problems which were stressful and affected his health negatively.. This patient explained this because he was asked why his sugar level was not well controlled. Another patient explained: “*Another thing is that I am able to control my sugar level because I can manage my stress*” (P1). It was found that many patients were convinced that stress can elevate sugar levels: “*Not long ago I think it was in December 2017 I had a stress and it went up to 13mmol/L*” (P8).

Stress is one of the main problems among patients with diabetes. Several studies have shown that stress and psychological distress play an important role in the development and chronicity of the diabetes (Alonso-Moran, Satyrganova & Orueta, 2014).

In other words, stress can be considered as a cause and as well as a consequence of diabetes. On the other hand, stress increase glucose and glycosylated haemoglobin which may increase stress levels among individuals with Type 2 diabetes, as well as causing other physical, behavioural and mental disorders (Brammon, Feist & Updegraff, 2013).

Diabetes management is a constant process; it is an ongoing challenge that maybe complicated by the impact of stress. Excessive stress is a major barrier to effective glucose control and a danger to patients' general health. Whether or not you have diabetes, overtime stress is harmful because it causes so much wear and tear on the body. The ability to think clearly and to make good decisions is impaired when the mind is burdened (Joseph, 2013).

Sub-theme 1.3: Adherence to prescribed medication is known as significant to maintain quality of life

Diabetic patients rely heavily on treatment from the health facilities. However, it was revealed that medication is not always available when they arrived to collect it at the facilities. Almost all the diabetic patients understand that medication is crucial. They face the challenge of shortage of medication in the facilities. They complained of having to go to clinics more often but they did not have money for transport. Since these patients put all their trust in medication, it becomes a stressful issue when they are told to return home without it. At some facilities when there is no medication, patients are sent to the next closest facility. This is confirmed by the following excerpts: "*Just that sometimes you come to clinic and they tell you that your medication is not available and they give me another date*" (P15). This coincided with the patient who said "*It happens that sometimes when you come to clinic they say there is no medication. Like last week there was no medication and I was given another date*" (P14).

That is still a challenge because clinic order their stock according to the maximum stock level, meaning that if patients from other clinics comes for medication, other patients belonging to that clinic will have shortage of medication and that can affect the budget of that clinic in future.

It is clear that the full benefit of many of the effective medications available will be achieved only if patients follow the prescribed treatment regimen reasonably closely. This was supported by the participant who said: *“Ok, in DM alcohol is forbidden, not too much sugar; don’t forget to take your treatment every day” (P2)*. Ensuring that patients take oral anti-diabetic medication as prescribed and achieve normal or near normal blood glucose control is among the most common challenges encountered by the physicians and other health care providers involved in the treatment of diabetes (Taruna, Kalra & Basera, 2014).

Numerous factors affect patients’ ability to adhere to their treatment properly. For example, self-efficacy treatment expectations, health beliefs and lack of social support. Consequently, diabetes management is complex, requiring a life-long commitment and drastic changes to the patient’s life-style. Studies have shown a significant relationship between social support and treatment adherence among patients with diabetes. Social support from family provides patients with practical help and can reduce their stress (Miller & Dimatteo, 2013).

Sub-theme 1.4: Commitment to adhere to scheduled follow up visits and health care advices

Among the interviewees there were patients who did not keep to their appointment dates at the clinic, it was confirmed from their files that sometimes they skipped 2-3 months without collecting medication, and if their files had not been checked they would have lied because they did not admit to non-compliance. Those identified as clinic non-attendees were more likely to be smokers and alcoholics. One participant indicated that: *“R- If I can go through your file am I going to find your dates just the way? P- No I once skipped” (P13)*. Another patient who reported that he had been managing his diabetes through diet for a long time indicated that he used to skip dates: *“Initially I used to skip the dates but now no” (P5)*. Patients tended to arrive at the clinics and find that there was a shortage of medication and this impacted on their clinic attendance. This was confirmed by a participant who said: *“It happens*

that sometimes when you come to clinic they say there is no medication. Like last week there was no medication and I was given another date, then I do not come” (P14).

Both verbal and written instructions should be given to the patient in addition to correct and complete information regarding medication. Effective physician-patient-pharmacist communication should be conducted in an atmosphere of trust and confidence. Educating diabetic patients is important for the successful management of this chronic disease. Education leads to the self-monitoring adjustment of treatment and to positive approaches to coping with emergencies useful in management of diabetes (Inamdar, Kulkarni, Karajgi, Manvi & Ganachari, 2013).

Non-adherence is a world-wide problem. Researchers have identified various reasons for this. It has been found that barriers to good management are: non-acceptance and absence of symptoms, divergent cultural concepts, beliefs and identified potential barriers as economic, social and conceptual factors (Booyens & Schlemmer, 2015).

Today’s nurse is faced with the challenges of providing high quality evidenced-based care to patients in health care settings for both acute and chronic illnesses. A situation where diabetic patients visit clinics regularly and their blood glucose levels remain high despite the treatment, is a problem that calls for attention. This is a very common observation in many diabetic patients. Sometimes the minor symptoms that these patients could take care of at home, bring them back to hospitals for medical checks. However, a number of them report to hospitals with complications like gangrene that may lead to amputation or even death, and this might indicate a lack of appropriate self-care (Uchenna & Ijeoma, 2009).

Sub-theme 1.5: Regular exercise for people with diabetes

When participants were asked about techniques they used at home, away from the facility, they described their everyday house chores as exercise to keep them healthy. One participant said: *“I don’t exercise I just do house chores, I like doing house chores” (P8)*. Another diabetic patient said: *“I work at a place where you do up and down the whole day, when I knock off I am already tired. I rarely exercise” (P15)*. It was realised that many diabetic patients rely on going to clinic to collect medication

and believe that as long as they take their medication no life-style modification is important. Almost all the patients from whom data were collected did not exercise. Some old people reported that they tired very quickly when they did activities that required energy. One admitted: *“We once had a programme but it didn’t work. Sometimes when I work I feel tired, I take a break then continue”* (P10). Another participant articulated that people use cars most of the time and that that was the reason they did not exercise. Diabetic patients seem to have a clear understanding about the importance of exercise; they know how it can benefit them in maintaining their quality of life as self-management, yet it is not done: *“I do house chores and then I gym. Researcher: What do you mean by gym? When I do house chores”* (P11)

Exercise improves blood glucose control in diabetes, reduces cardiovascular risk factors, contributes to weight loss and improves well-being. Exercise may prevent or delay the development of diabetes Type 2. In Type 1 diabetes mellitus, it is considerable in improving cardiovascular fitness, muscle strength and insulin sensitivity. Exercise is recommended because it increases energy use and should be tailored to meet the specific needs of the individual. Aerobic exercise involves repeated and continuous movement of large muscles. Group activities such as walking; cycling, jogging and swimming rely primarily on the aerobic energy producing system. Flexibility and balancing exercises are also important for adults with diabetes (Colberg, Damsey, Horton, Castorino & Tate, 2016).

Sigal, Kenny and Wasserman (2004) explain that physical exercise has been considered one of the cornerstones in the treatment of diabetes mellitus, along with the nutrition and medication, for the past 100 years.

4.3.2 THEME 2: Knowledge related to self-management strategies amongst diabetes patients.

The theme elicited 5 sub-themes which elaborate what the patients expressed and the gaps in managing the condition. Knowledge about diabetes, attitude towards the condition and time management with respect to the condition are known to affect compliance and play an important part in diabetes management (Kheir & Greer, 2011).

The five sub-themes are as follows:

1. Knowledge versus lack of knowledge related to the predisposing factors for the development of diabetes;
2. Existing knowledge related to medication they are taking for diabetes;
3. Knowledge versus lack of knowledge related to normal and abnormal glucose levels and testing times;
4. Knowledge versus lack of knowledge related to emergency care for hyperglycaemia and hypoglycaemia;
5. Knowledge versus lack of knowledge related to signs and symptoms of diabetes.

Sub-theme 2.1 Knowledge versus lack of knowledge related to the predisposing factors for the development of diabetes

The findings reveal that most of the patients have an idea about what to do to maintain their quality of life and they seem to know what causes diabetes. They were able to describe the symptoms of diabetes mellitus, the consequences of treatment default, how and when to take their treatment and even the names of the medication. One participant indicated that: *“What I know about diabetes is that when you eat too much your sugar level remains high but when you take a little it remains under control. When you don’t drink water is another problem, but when you drink a lot of water your sugar level remains controlled, exercise, such things”* (P2). Other participant correctly explained his idea of how he controls his sugar levels. This indicates that a little knowledge is present. However, sometimes they do not use it. This is one reason for an increase in the death rate of diabetes mellitus patients: *“Then I drink a lot of water to reduce the sugar level then after I sleep or just to lie down”* (P17).

Patients exhibit poor self-care behaviours. This is significantly associated with the level of education and having a middling level of diabetic knowledge can also be associated with low levels of education. The predisposing factors for diabetes mellitus include raised blood pressure, tobacco use, alcohol consumption and overweight. (Kasahun, Gesesew, Mwanri & Eshetie, 2016)

Inadequate knowledge and poor foot self-care are major contributors to ulceration and amputation and increase the burden on any health care insurance provider. The lack of patient knowledge is the greatest risk factor for foot ulceration in the vast majority of diabetic patients in Egypt (Cgang, Chen & Chen, 2013).

Diabetes outcomes depend mainly on the patients' sound of knowledge of self-care and the disease that is dependent upon their knowledge. This includes health-related behaviour and care-seeking which are guided and determined by individually and culturally defined beliefs about health, illness and health-care. It is reported that patients with low diabetes knowledge levels are least likely to comply with diabetes management and instructions from health-care professionals (Shrivastana *et al.*, 2013).

It was found that patients knew the correct food to be consumed in diabetes. They mentioned that fruits and vegetables were important for the control of blood sugar levels and the knowledge related to food content to look for when buying food was noticeable. This was confirmed by the participant who said: "*On my food there is always a vegetable like spinach, cabbage, butternut or beetroot. Oh... yah she (dietician) once told me about the yoghurt and other food that is written low fat on the container*" (P2). However, some patients explained that they could not afford a proper diet and that they ate according to availability. This was indicated by the following "*Most of the meal they said I should take I struggle to get because I cannot afford*" (P14).

Furthermore, patients knew what type of drinks should not be taken as they could raise blood sugar levels. Research has shown that people can improve their blood sugar levels when their carbohydrates intake is between 5-35% of their calories. The key to eating well with diabetes is to eat a variety of healthy food from each of the food groups. Foods to avoid are cakes, cookies, refined grains, muffins or anything made of white flour (Nicholas, 2017).

Diabetes mellitus is a rapidly growing health concern and diet is an important modifiable risk factor affecting its incidence, severity and management. A study in Sri Lanka revealed that patients were aware of the importance of diet in the management of diabetes mellitus but had difficulty incorporating this knowledge into their lives due to social circumstances. Many believed that fruits were bad for

diabetes and vegetables were considered as a healthy choice (Ranasinghe, Pigera, Ishara, Jayasekara, & Kutulanda, 2015).

Changes in diet involve patients' greater commitment and introducing changes in lifestyle that are not necessarily happily accepted by the patient. Patients do not want to give up consuming foods that they truly enjoy but which should be excluded (McElfish, Bridges & Hudson, 2015).

Diabetic patients understand very well that exercise can keep their condition well managed but they do not know that carrying out everyday house duties is not considered exercise. The importance of maintaining an acceptable body weight is known as a strategy to control blood glucose levels. This can be achieved through exercise. Many patients believe that keeping themselves busy every day is engaging in exercise. However, these days many people do not walk but use cars even for short distances. This is confirmed by the following quote: *"It depends if I have a free time. Many people use cars, so we do not walk lately (P15)*. There is a lack of information regarding time, duration and frequency of physical activity.

As per physicians' suggestions, exercise is an essential component in diabetes in which either glucose levels increase in the blood or else the body cannot produce insulin. In Type 2, the condition is called insulin resistant physic. By exercising blood glucose levels are automatically reduced without any insulin source (Sharma, 2016).

Sub-theme 2.2: Existing knowledge related to medication taken for diabetes

Patients seem to know their medication by name and that, through medication, blood glucose can be controlled. This was confirmed by the participant who said: *"I take three tablets in the morning and three in the evening, is Metformin 850mg" (P1)*. Other patients explained hypertension details as symptoms of diabetes mellitus. One diabetic patient was on hypertensive medication.

Another diabetic patient explained that medication should not be taken on an empty stomach by saying, *"I take diabetic treatment at 09H00am but now I did not take them because am here, I did not eat and I know my sugar level is high" (P3)*. The importance of medication is known by the patients who indicated the impact if they stuck to their treatment. A participant explained: *"As we attend the clinics or hospitals, just keep to your medication then you will be alright. As you are convinced*

that the deaths of diabetic are very high, some of the people default from the medication” (P2).

A chronic disease, such as diabetes mellitus, represents a substantial burden for the patient. In order to accomplish good self-care, patients need to be qualified and able to accept decisions and self-manage the disease in daily basis. The level of knowledge about the disease empowers the patient to act as an equal partner in the management of the disease (Turk, Palty, Rupel & Isola, 2012).

The study conducted in Egypt by Kaira (2001) about patient education for diabetes control found that the education of diabetic patients is one of the cornerstones of their disease management. The results reveal that Primary Health Care (PHC) physicians had sufficient knowledge about the diagnosis and management but that most diabetic patients had little knowledge about diabetes and its management (85, 7%) as well as negative attitudes towards self-management (61.1%). Only 23,6% were satisfied with the service provided by the PHC facilities. They did not know the importance of exercise and they believed in the efficacy of herbal therapy in diabetes control. Thus, it was concluded that there is a serious gap in the provision of basic educational services to the majority of diabetic patients attending PHC facilities in Alexandria (Kaira, 2001).

Sub-theme 2.3: Knowledge versus lack of knowledge related to normal and abnormal glucose levels and testing times

Diabetic patients can differentiate a normal blood glucose level from an elevated one. This was confirmed by a participant who said: *“Today my sugar level is 4mmol/L” (P3)*. Some patients remembered how high their glucose level was on their last visit and tended to justify why it was high. Some reported that they could read the hemoglobin testing machine, whereas some reported that they relied on the health care professionals telling them whether it was high or low as they did not understand the numbers. One participant said: *“I went to clinic and explained they tested me for sugar and it was high it was 24.3mmol/L” (P9)*. Another confirmed her knowledge by saying: *“Yes it used to be high but sometimes normal” (P13)*. This shows that the knowledge of diabetic patients who can understand the ranges of the glucometre is not poor. Most of them when they are told of their blood sugar levels can identify whether it is high or low.

A study, conducted in Durban by Mashinge *et al.* (2008) concerning the knowledge of diabetes mellitus, its complications and management, reveals that a large number of patients knew about diabetes mellitus. The standard care of diabetes mellitus includes multiple daily injections of insulin, monitoring of blood glucose using a finger stick and digital glucometer.

Sub-theme 2.4: Knowledge versus lack of knowledge related to emergency care of hyperglycaemia and hypoglycaemia

Patients think that whenever hyperglycaemia strikes or when they feel the signs of discomfort in their body that they should rush to the health care facility, without first self-managing it at home. This is possibly because patients do not have confidence in themselves and they rely heavily on the medication that they think they will be given when they arrive at the facility: *“There is no other way besides medication” (P16)*. No self-management is practised by many of the patients, except to come to the clinics to collect medicine: *“I don’t think there is any other method that you can use in this condition apart from coming to clinic” (P15)*. This statement by a diabetic patient indicates the need for education about non-pharmacological ways of treating hyperglycaemia. Some patients know how to deal with emergency hyperglycaemia while at home. This was confirmed by a participant who said: *“I didn’t want to go to clinic. I was weak for two days, on the last day I asked my son to take me to the clinic. And I had a bottle of water because I felt thirsty more often” (P8)*. The patient knew that having pure water can reduce the effects of diabetes mellitus while waiting to get to the clinic.

At the core of preventive measures is the patient’s education and empowerment in the prevention of hyperglycaemic emergencies. This is basically about focusing on the usual precipitating factors and empowering the patient through health education to know how to avoid the precipitating factors or to intervene early to prevent the progression to full blown emergencies. Regular awareness creation is needed (Balogum & Adeley, 2008).

Sub-theme 2.5: Knowledge versus lack of knowledge related to signs and symptoms of diabetes.

One participant reported that when the symptoms of diabetes struck her before she could start the treatment, she managed it with pure water until she arrived at the clinic and received help. This happens to most of the patients who live with diabetes and are under treatment and open to talk about the condition and self-manage themselves: *“I did not know the symptoms of diabetes, I was admitted because of the symptoms, I had bad symptoms like thirstiness, urinating more often” (P5) “I knew I was diabetic when I felt dizzy, had too much saliva then I came to the clinic to test” (P7).*

Diabetic patients know about emergency care of hyperglycaemia and hypoglycaemia. It is indicated that awareness about diabetes and its complications is poor among the general population, especially in the rural areas. There is an urgent need to create awareness among the population regarding diabetes and about the serious consequences of this chronic disorder. The signs and symptoms of diabetes are disregarded by many because of the chronic progression of the disease. People do not consider this a serious problem because, unlike many other diseases, the consequences of hyperglycaemia are manifested immediately (Murugesan, Snehalatha, Shobhana, Roglic & Ramachandran, 2007). A participant who saw the signs of diabetes from her colleagues and managed to run to clinic when she experiences those symptoms said... *“I was working with people who are diabetic. I used to see how they conduct themselves in terms of food. They drink water frequently. The first sign I had was dizziness” (P8).*

There is a need to improve the education given to diabetic patients about stepwise measures to take to avoid the life-threatening complications associated with hypoglycaemia. According to a study conducted in Kwa-Zulu Natal, there is no statistical assessment of the knowledge that the patients have, the statistics that shows the understanding of diabetes mellitus by the patients, that is the reason education is needed to improve the knowledge (Shilubane *et al.*, 2016).

4.3.3 THEME 3: Challenges experienced when living with diabetes

This theme is divided into three sub-themes which elaborate the challenges that diabetic patients experience. The variables mentioned in this theme are considered the most significant by diabetic patients in terms of their well-being. HIV and AIDS is mentioned, not as a comparison to diabetes mellitus, but because it is an issue that was found to be a challenge to their wellness.

It is important to be aware that the disease diagnosis causes an emotional shock for any person not prepared to live with limitations caused by chronic illness. Changes in lifetime habits are slow and part of difficult process, especially in terms of food. The main difficulty regarding adherence to medication therapy is related to the number of medications used by diabetic patients daily (Peres *et al.*, 2017).

Sub-themes that emerged are:

1. Co-morbidity with other diseases considered problematic;
2. Lack of adherence to diabetic treatment and diet as a challenge which may lead to severe complications;
3. Scheduled times for taking treatment and food a challenge when not at home.

Sub-theme 3.1: Co-morbidity with other diseases considered problematic

Most of the diabetic patients participating in the study were HIV positive and seemed to care more about HIV more than their other diseases. Patients still have the fear that HIV and AIDS is more dangerous than all other conditions, not knowing that if an individual takes a good care of his/her health diabetes mellitus can be controlled. *“It was difficult to accept, but the first step that I took was to go to clinic” (P9)...* There is still a problem with acceptance of this condition where patients delay the process of healing by denying their sickness.

The World Health Organization (2011) indicated that diabetes mellitus is generally emerging as the major non-infectious co-morbid condition in HIV and AIDS infected individuals. This phenomenon may threaten to reverse the success achieved so far in the care of AIDS patients by imposing additional diabetes mellitus related morbidities and mortalities which are known to complicate not only the medical management, but also the economic and policy aspects, of HIV care. One patient expressed the difficulty of being HIV positive together with diabetes mellitus by

saying: *“Eish... but if I were to explain how we survive in this condition we facing many problems, the main thing is food and taking treatment properly. I am taking HIV treatment too, so time is more important” (P3).*

Some HIV treatment and its complications may increase blood glucose levels and lead to diabetes. When one is HIV positive and has the risk factors of diabetes, one is likely to develop diabetes. When individuals are diabetic and start taking HIV treatment, they may need to check their blood glucose more often. People taking Metformin and are on HIV treatment, may be at risk of lactic acidosis. Such patients are advised to drink a lot of water (American Diabetes Association, 2013). The results of this study show that patients are more worried about HIV than about diabetes.

The understanding of diabetic patients of the challenges of diabetes mellitus control is relevant. Successes from adherence counselling provided to HIV positive individuals might lead to improvement in the key performance indicators of diabetes care (Adeyini *et al.*, 2015). The reasons for poor adherence reported by participants vary from individual to individual.

Some diabetic patients mentioned that is not easy to forget HIV treatment because it is only one tablet and they are scared of the illness. Diabetes mellitus treatment requires many tablets and one is taken three times a day. Many patients still believe that blood glucose can be controlled, even after one default.

Grunfeld and Dankner (2016) found that there is high prevalence of dysglycemia among Cameroonian HIV-infected adults. Few data currently exist on the association with diabetes and the effect of HIV in Africa. Existing data are disparate; more research is needed to guide policy and practice on the care and control of diabetes mellitus and HIV in Africa (Hayashi & Chandramohan, 2018).

Sub-theme 3.2: Lack of adherence to diabetic treatment and diet is a challenge which leads to complications

Patients do not understand that they can control diabetes by simple, small and few things which are cheap and not exhausting. Since many patients rely on the medication that is provided by the clinic, it becomes a problem when they experience complications at home because they cannot self-manage their condition and then

they rush to the clinic for help. This was confirmed by a participant who said: *“I eat brown bread, brown porridge and I drink black tea no milk with small sugar, they said I should stop taking sugar but I take small”* (P13). This explains in part why diabetic patients develop complications.

Many patients lack a basic understanding of how medication works or of dietary skills. The following participant shows that she does not know that she can make her own garden where she can grow vegetables and fruit: *“Eish.... diet is a problem because I cannot afford the correct diet as I am unemployed”* (P17). Although most patients have had some education, many do not understand or remember the information. The need for re-education is a function of aging and it should be studied further. The deficit in knowledge is likely to be greater in communities where diabetes education is not readily available (Mushi, 2013).

Non-adherence to prescribed medication regimens is common in patients with diabetes. From 23% to 77% make optimal glycaemic control difficult to achieve. Various options have been identified as contributing to non-adherence. These include age, gender, disease duration, family factors or a poor patient provider relationship (Muhhamad, Abdul, Musarrat, Asher & Zahara, 2014).

In this study, the family factor is recognised because when the patients come to collect medication, often they come alone without the company of their family members. A participant articulated that without taking her treatment, she has vision problems: *“I just come when is finished. Because if I do not come to take my medication then I won't be able to see”* (P14). The same patient further explained that: *“It happens that sometimes when you come to clinic they say there is no medication”*.

In terms of duration, there are patients who skip appointments, possibly because after taking the treatment they feel better and forget about coming to the clinic for their medication. It was realised from the results that this condition occurs more commonly in elderly people than youth.

Sub-theme 3.3: Scheduled time for taking treatment and food challenge when not at home

It is still a challenge to many patients to take treatment on time on the days that they come to clinic. Many come to clinic in the early hours to book a place in the queue as the clinics get very crowded. By so doing they do not have breakfast so that they can take their medication as required. This was confirmed by the participant who said: *“I take diabetic treatment at 09H00am but now I did not take them because am here, I did not eat and I know my sugar level is high” (P3)*. This goes with the lifestyle that the patients are used to, and many patients made it a habitual thing not to take treatment on the days that they got up in the early hours when they have somewhere to go.

For many diabetic patients taking their medication on schedule is a challenge, some forget regularly and others miss a dose here and there. Many people with diabetes rely on oral medication, this was said by a patient who seemed to be aware about the treatment: *“I take two in the morning and two in the evening after supper” (P12)*. In a study of diabetes care, conducted in 2004, researchers found that people with diabetes type 2 who missed doses of their medication ran a greater risk of being hospitalised (American Diabetic Association, 2008).

According to the American Diabetic Association Organization 2008, experts advise many people with diabetes that they need to take medication but that they also need to care for their health in other ways to avoid diabetes' eyes and feet.

Literature indicates that simple phone and letter reminders of schedules or prompting of the date and time of appointments to more complex web-based multidisciplinary programmes about patient self-management can have a positive impact on clinical and behavioural outcomes for diabetic patients (Nutti, Lawley, Zhang, Sands & McComb, 2015). *“You must have something, that is why I say after lunch at 16H00pm I must have something, a slice of bread with boiled egg or something before supper” (P4)*...this was said by one of the participants who has an insight of how to remind herself on time for medication, she uses lunch time and supper to remind her.

4.3.4 THEME 4: Suggested self-management strategies related to maintenance of quality of life by diabetic patients

Suggested self-management was discussed with the diabetic patients and they wished that it was possible for them to follow it. The sub-themes are described below. Patients saw these as valuable to their condition. The patients could elaborate on positive steps to take in managing themselves but there were also many obstacles.

1. Adherence to diet, stress management and maintenance of scheduled appointments;
2. Visit to dietician viewed as important for every newly diagnosed patient;
3. Taking prescribed treatment and diabetic diet;
4. Every diabetic patient is advised to belong to a support group.

Sub-theme 4.1: Adherence to diet, stress management and maintenance of scheduled appointments

During the sessions held in the facility on the days where patients come for consultations and collection of medication, it is recommended that education be offered to the patients and that they be allowed to voice their opinions as everyone was entitled to his/her own opinions. It is well known that health education is delivered to all the patients, especially in the mornings in the facilities but the education given is general, not really focusing on specific conditions. This was pointed out by a participant who said: *“Be careful of what you take in as your meal at usual time because at the clinic they taught us that at least 4-5 meals a day. There must always be something in the stomach” (P4)*. She further said: *“As we attend the clinics or hospitals, just keep to your medication then you will be alright. As you are convinced that the deaths of diabetic are very high, some of the people default from the medication” (P4)*.

As many facilities realise that there are specific days for specific conditions to collect their chronic medication, it would be easy to plan health education relevant to such patients on those specific days. Health education should not focus only on medication, which is what the researcher has observed in many cases. In addition, all self-management strategies should be tabled and emphasised. Health education about diet should make it clear that there are cheap and nutritious foods that even

pensioners can afford and access. People should be encouraged to develop their own gardens at home.

Diabetic patients should be made aware about their blood sugar levels at their every visit. It should not be assumed that if the health care professional says nothing about the results after pricking the patient's finger then the blood sugar level is fine. When the blood sugar level is controlled, the health professionals should compliment the patients and encourage them to keep it up.

Once the patients are diagnosed with the diabetes mellitus, health care workers should help them accept their illness as it is not curable. If possible, their families should be included and educated about health and non-pharmacological ways avoiding stress. Health care professionals should advise the diabetic patients to avoid stressful situations. In cases where the stress is unavoidable, patients must seek counselling in order to maintain normal blood sugar levels.

Diabetic patients should be advised on their first day of diagnosis of the importance of following the correct procedures. Diabetes mellitus should be discussed at every visit with the patients and the importance of follow-up should be emphasised: *"I follow my dates just the way they give me"* (P13). Those that miss their dates should be encouraged to report that they will be not available on the date given so that they can be helped and not default. Patients need to be encouraged to avoid stress. Some patients emphasised the stress issue as the one which increased their blood sugar: *"My wife passed on, my kids are still at school and I do not have anything"* (P17).

Successful diabetes disease management involves routine medical treatment with individualised patients' goals, self-management education and ongoing support to reduce complications (Nutiet, Turkan, Lawley, Zhang & Sands, 2015).

Sub-theme 4.2: Visits to dietician viewed as important for every newly diagnosed patient

Patients have seen that it helps to consult a dietician to get information about a proper diet. In some cases, patients thought that when they were told to follow a diabetic diet it would cost a lot and they would not be able to afford the diet but that is not true. That is the reason it is so important to have a dietician at the facilities. *"It*

was difficult to accept, but the first step that I took was to go to clinic and fortunately there was a dietician then she educated me” (P9). The truth is that patients should be encouraged to develop their own gardens in their back yards and grow their own vegetables.

There are facilities that do not have dieticians but dieticians do visit the clinics on specific dates. Even though there are no dieticians at the facility, professional nurses and other members of staff can give dietary advice and counselling. It is not only dieticians who should be consulted by diabetic patients, professional nurses can also offer dietary counselling during follow-up visits. *“Oh... yah she once told me about the yoghurt and other food that is written low fat on the container” (P2).*

People with diabetes need to understand how food and nutrition affects their bodies to successfully manage the disease. Dieticians can provide detailed information about how to eat and practical tips to address daily challenges and they can help put together daily meal plans that consider individual food preferences, the level of physical activity and life-style; they work together with patients who have diabetes to set nutrition goals (Wolfman, 2017).

Sub-theme 4.3: Taking prescribed treatment

Diabetic patients should always be encouraged to take the medication prescribed by health care professionals. Patients should know the contraindications to their medication and should always report the side effects. However, people have different cultural beliefs which influence their daily lives. Patients should not be told to leave their rituals and cultural actions that they practise to make them feel better. Health care professionals should respect them and teach the patients how the treatment works in their system, its mechanism and how other over-the-counter treatment may harm the system. It should be the patient's choice of treatment After detailed information, the patient should choose his or her treatment. Patients should be encouraged to use the prescription letter from the health care professionals to purchase their medication from pharmacies.

A participant recommended that: *“Government must provide us with food, they cannot give us medication and take them on an empty stomach” (P15).*

Van Deventer (2017) maintains that following chronic treatment for diabetes is not only about treating physical symptoms and ailments. When a patient is feeling better it does not mean that medicines should be stopped or doses changed, it means that the medicine is working and it should be continued. It is unhealthy for blood-sugar levels to be under control one day and out of control the next. Inconsistent blood-sugar levels can cause complications in the long run.

Community health care workers can also play an important role in delivering SMS interventions to diverse populations. The re-engineering of primary health care in the country should prioritise health service delivery to the rural communities (Klein, Jackson, Street, Whitacre & Klein, 2013).

Sub-theme 4.4: Every diabetic patient is advised to belong to a support group

It was realised that many patients rely on going to clinics to collect medication and returning home until their medication is finished. Some wait until they develop complications rather than adhering to their scheduled dates and attending the clinic. It is suggested that support structures be developed in the community so that patients can attend these in the community when they do not go to the clinics. *“No, we do not have support structures, but what I normally do is to search information that is related to chronic conditions” (P5).* Diabetic patients liked the idea of the clinics developing support groups and thought it should be done to give everyone information, especially those who are unable to access the internet. Another participant recommended that patients should stick to the clinics and avoid using herbal medicines as they could worsen the condition. She said: *“I don’t think there is any other method that you can use in this condition apart from coming to clinic. Because if you can use herbals and this treatment then there will be a problem” (P15).*

Using other diabetes mellitus support groups as benchmarks could assist in their establishment. Available home-based carers could be trained to monitor the community structures. Such community structures would be there to help diabetic patients monitor and maintain their illnesses properly. *“Diabetic patient must not sleep the whole day otherwise you will be weak-weak-weak. That’s why we have those old age group to keep our minds healthy and some exercises” (P4).* The old

age programme that the patient was talking about focus on teaching the pensioners how to read and write but not much about self-management in one's illness

Education, based on exercise, blood glucose monitoring and self-management, which could include family members where necessary could be executed through those structures. Ritholz (2018) agrees that support groups are very important and helpful to people with diabetes because they offer a venue to meet others who share similar medical and psychosocial concerns. By meeting with others who have diabetes, patients feel that the members of the group understand their experiences first-hand. Patients gain a greater sense of value and power from this feeling of belonging.

4.4 SUMMARY

This chapter discusses the main findings of the study and the strategies used by diabetic patients under treatment to maintain their quality of life. Data saturation related to the major themes and sub-themes was achieved and confirmed by coding the participants from the transcripts. The sub-themes were supported by the literature review.

The findings show that participants know what self-care management is but they do not put their knowledge into practice.. Some participants report that they are unable to afford a diabetic diet, whereas others report that they are not given health education on how to manage themselves. Patients understand the importance of adherence to their treatment plans, yet they tend to ignore the compliance to diabetic management.

CHAPTER 5

SUMMARY, LIMITATIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The previous chapter presents the results, supported by the findings of the study. In this chapter a summary of the research study is outlined together with the limitations, recommendations and conclusion of the report. The recommendations are based on the findings, the identified themes and limitations of the study. All the methods followed in the study, the type of data collection and data analysis are reviewed.

5.2 SUMMARY

The aim of this study is:

- To determine the self-management strategies for maintaining a healthy life for diabetic patients on treatment in primary health care facilities in the Sekhukhune District, Limpopo Province, South Africa.

5.2.1 The objectives of the study are to:

- Explore the self-management strategies of diabetes patients on treatment in primary health care facilities of the Elias Motswaledi municipality, in the Sekhukhune district of Limpopo Province;
- Describe the self-management strategies of diabetic patients under treatment in primary health care facilities of the Elias Motswaledi municipality, in the Sekhukhune district of Limpopo Province.
- Develop self-management strategies for diabetic patients under treatment in the health care facilities of the Sekhukhune District in the Elias Motswaledi municipality

5.2.2 Research question

The research question guiding the researcher throughout is:

- What self-management strategies do diabetic patients use in primary health care facilities in the Elias Motswaledi Municipality, in the Sekhukhune district of Limpopo province?

5.2.3 Research method and design

A phenomenological, descriptive and explorative research design was used to explore and describe the ideas and experiences of the diabetic patients under treatment. It was used because it allowed the researcher to engage deeply with the participants to find out what was happening in each of their lives (Smith, 2014). The researcher tried to understand the participants' ideas in order to gain a full understanding of the strategies used to maintain the quality of their lives. This was achieved with the help of probing questions during the interviews to get the clear answers.

Data were analysed by applying Tech's data analysis approach by Polit and Hungler (2011). An independent coder analysed verbatim transcripts of the data. Methods of trustworthiness were followed to reach good quality research. In other words, credibility, transferability, confirmability and dependability formulated by Guba's model of trustworthiness, developed in 1985.

5.2.4 Research findings

The study revealed that some diabetic patients know about the condition and the signs and symptoms, as many of them reported that they had families and friends that were under diabetes treatment. Diabetic patients know and understand that there are other methods, apart from the medical treatment that can help them control the condition but they tend to ignore them. Further, some claim that they cannot afford to follow other methods, such as diet. The researcher developed four themes and sub-themes from the application of Tech's approach to data analysis.

Theme 1 has five sub-themes where the diabetic patients explain the self-management strategies that they use to maintain their condition. Patients seem to understand the importance of adherence to prescribed medication, diet and to honour the scheduled appointments.

Theme 2 pinpoints knowledge versus lack of knowledge of predisposing factors, foods that they should do away with, regular body exercise and knowledge of the medication that they were taking. Theme two had 4 sub-themes.

Theme 3 reveals that diabetic patients experienced challenges of HIV/AIDS as another chronic illness. This shows that the patients who have both conditions

comply with their HIV treatment. Adherence is seen as a challenge and some patients tend to skip their scheduled clinic appointments.

Theme 4 outlines recommended strategies for diabetic patients, such as adherence to diet, compliance with prescribed treatment and avoiding unnecessary stress or the proper management of stress. This implies that patients may comply with and adhere to their treatment with the help of health care provider.

Suggested self-management strategies related to the maintenance of quality life of diabetic patients is shown under Theme 4 which is comprised of 4 sub-themes. This theme is where patients are advised to belong to support groups and to follow the instructions and the health talks provided by health care providers

5.3 DEVELOPED SELF-MANAGEMENT STRATEGIES ACCORDING TO THE FINDINGS

Below are the developed strategies of the study as mentioned on the objectives, the strategies are developed according to the findings:

5.3.1 Explanation of self-management strategies maintained by diabetic patients (Theme 1)

- Health care professionals should advise diabetic patients to visit clinics with their families or guardians, at least quarterly, to receive health education together so as facilitate self-management.
- Support groups for patients with diabetes mellitus should be initiated by the facilities. This would promote acceptance of the condition and give health education when patients come to collect their medication.
- As the community structures are to be developed, the home-based carers should be trained to facilitate the programmes to executed by those structures.
- Patients taking treatment for diabetes mellitus and for one or more other chronic conditions must also be taken into consideration, especially those being treated for HIV/AIDS and hypertension. The conditions can be included in the health talks and through delivering services in the communities during outreaches. These conditions are mentioned because they appear more often in diabetic patients.

5.3.2 Knowledge related to self-management strategies amongst diabetes patient (Theme 2)

- Health education should run by the nurses together with a dietician, in facilities where dieticians are available. It would be based on the non-pharmacological treatment of patients and self-management of diabetic patients.
- Developing community structures that patients can attend whilst not in the facility can be considered. They should start with community outreaches where the health care professionals, together with home-based carers, should visit the communities on predetermined dates.

5.3.3 Challenges experienced when living with diabetes (Theme 3)

- For patients who reported they could not afford to buy the proper diet for their condition, it should be the duty of a health care professional to explain to them that they can grow their own vegetables in their gardens.
- There are other cheap nutritious foods that should be recommended.
- During the dietary planning sessions, the patients should be advised to bring their families, if possible, to involve them in the interventions. For example, for those patients who cook at home, there must be someone from their family who will listen to the health talk and understand the food types that the diabetic patient should consume.
- For diabetic patients who have other chronic conditions, it should be the responsibility of a health care provider to explain the relationship of those conditions to help patient to comply.

5.3.4 Suggested self-management strategies related to maintenance of quality life of diabetic patients (Theme 4)

- Outreaches should be conducted monthly into different communities to deliver services; this would enhance the adherence of patients to comply with the dos and don'ts of their illness. Outreaches could be continued until the support structures are well-developed and functioning successfully. That would be gauged by the compliance of the patients.
- Patients who have challenges in the community could be identified and referred to relevant professionals for help.

- Effective dietary education should include activities promoting a more positive attitude toward the disease. This could help individuals in counselling, respecting the patients' needs and focusing on regular blood glucose tests. Often counselling can help patients to accept their situation as it is and to learn self-care.

5.4 RECOMMENDATIONS

The following are the recommendations of the study, focusing on the following sub-headings:

5.4.1 Nursing education

- In the existing curriculum, students should be developed to include home-visits in assisting patients with diabetes mellitus to cope and help themselves to maintain good quality of life.
- Dispensary modules/courses could be added to the students' curriculum to give them a better opportunity to teach diabetic patients how to take the treatment properly
- Short courses for professional nurses might be developed to enhance the health care providers in delivering health education to diabetic patients.

5.4.2 Nursing practice

- On the diagnosis of diabetes mellitus, a family member or a guardian needs to be present to support the patient. Frequent visits to the health care facility with the patient should be considered by the guardian, at least quarterly.
- There should be a health care professional at the facility specifically focusing on non-communicable diseases.
- Diabetic pamphlets should be distributed to patients. They could be like posters with drawings of food that should be consumed, as many diabetic patients are not literate. The pamphlets could include any other 'to do' activities.
- Home-based carers need to be trained about the symptoms of diabetes mellitus and how to monitor blood glucose, so they can do home visits regularly and effectively. Their information may include the nature of the disease, the various diabetes self-management behaviours and positive and

negative consequences of not adopting health recommendations. This education may take place individually or in a group setting.

5.4.3 Nursing research

- The Department of Health needs to fund researchers for more research to be done at all levels, in order to find a way to deal with the diabetes burden that the country is facing.
- Benchmarking from other countries needs to be done, to minimise the increasing death and complication rates.
- The Department of Health could appoint people to assess the efficacy of existing projects that supply food parcels to patients in need and to develop food banks.

5.5 LIMITATIONS

The current study is limited to the Elias Motswaledi Municipality area of the Sekhukhune District of Limpopo Province. Therefore, the results cannot be generalised to all the clinics in the Sekhukhune district or to the whole province. The reason for conducting the study in the Elias Motswaledi Municipality was that the defaulter rate was recorded in one of the clinics of that municipality and the death rate was noted in the referral hospital of Elias Motswaledi. The researcher explored the knowledge of the diabetic patients under treatment and the self-management strategies, especially those that are non-pharmacological.

5.6 CONCLUSION

The study concerns the self-management strategies, while at home, used by diabetic patients under treatment in the Elias Motswaledi Municipality, Sekhukhune District in Limpopo province. The findings highlight that diabetic patients have an idea about self-management but they neglect the practice of it and rely on the health facilities. Many diabetic patients do not have support groups/structures either in the facilities or in the community. Most of the patients report that they have a problem with a proper diet for their condition. Given such results the researcher developed the strategies above that could be useful to diabetic patients.

REFERENCES

- Adeyini, O.V., Yogeswaran, P., Wright, G. & Longo-Mbenza, B. 2015. Diabetic patients' perspectives on the challenges of glycaemic control
- Alonso-Moran, E., Satylganova, A., Orueta, J.F. 2014. Prevalence of depression in adults with Type 2 diabetes in the Basque country: *Relationship with glycaemia control and health care costs*. BMC Public Health, 14(1): 769.
- Babbie, E. & Mouton, J. 2009. *The ethics and politics of research: Practice of social research*. South Africa: Cape Town
- Balogum, W.O. & Adeleyo, J.O. 2008. Strategies for prevention of hyperglycaemic emergencies in Nigeria. *Annals of Ibadan postgraduate medicine*
- Barcaccia, B., Esposito, G., Matarese, M., Bertolaso, M., Elvira, M. & De Marinis, M.G. 2013. Defining Quality of Life. *A wild-goose chase*. Vol 9 (1)
- Botman, Y. & Greeff, M., Mulaudzi, F.M. & Wright, S.C.D. 2010. *Research in Health Sciences*. Cape Town: Heinemann.
- Boxer, H. & Snyder, S. 2009. *Family Practice Management*. American academy of family physicians.
- Braktze, L.C., Muehre, R.H. & Kehl, K.A. 2015. *Self-management support for people with long term conditions*. 2nd edition. Wellington: Ministry of Health.
- Brammon, L., Feist, J. & Updegraff, J.A. 2013. *Health psychology: An introduction to behaviour and health*. Boston Cengage Learning.
- Brink, H., van der Walt, C. & Van Rensburg, G. 2018. *Fundamentals of research methodology for health care professionals*. 3rd edition. Cape Town: Juta.
- Burns, N. & Grove, S.K. 2011. *Understanding nursing research*. 5th edition. Philadelphia: Saunders.
- Burns, N. & Grove, S.K. 2011. *Practice of nursing research: conduct, critique and utilization*. 4th edition. Philadelphia: Saunders.

Butler, P. 2017. Biggest ever study of food banks warns use likely to increase. Oxford University.

Cgang, L., Chen, C. & Chen, M. 2013. The devil in the detail. *Prevention of diabetic foot ulceration in rural areas is possible. Open j knurs*, 3:257-264

Chew B., Sharif-Ghastly, S. & Fernandez, and A. 2014. Psychological aspects of diabetes care: Effective behavioral change in patients. *World journal of diabetes*.

Chika Horikawa, C., Yoshimura, Y., Kamada, C., Tanaka, S., Tanaka, S., Hanyu, O., Araki, A., Ito, H., Tanaka, A. & Ohashi, Y. 2014. Dietary Sodium Intake and Incidence of Diabetes Complications in Japanese Patients with Type 2 Diabetes: Analysis of the Japan Diabetes Complications Study (JDCS). *The Journal of Clinical Endocrinology & Metabolism*. Vol 99(10): 3635-3643

Churchill, G.A & Lacobucci, D. 2010. *Marketing Research: Methodological Foundations*. USA: South-Western Cengage Learning.

Colberg, S.R., Sigal, R.J., Yardley, J.E., Michael, C.R., Dustan, D.W., Dampsey, P.C., Horton, E.S., Castorino, K. & Tate, K.D. 2016. Physical activity/exercise & diabetes: *A position statement of the American Diabetes Association*: 39(11) 2065-2079.

Creswell, J.W. 2014. *Qualitative, quantitative and mixed methods approaches research design*. 4th edition. University of Nebraska: Lincoln

Cullinan, K. 2017. Big increase in diabetes deaths. South African health E-news service, 01 March.

Davis, T.C., Federman, A.D., Bass III, P.F., Jackson, R.H., Middlebrook, S.M., Parker, R.M. & Wolf, M.S. 2009. Improving Patient Understanding of Prescription Drug Label Instructions. *Journal of General Internal Medicine*, 24(1):57-62.

Deakin, T.A., McShane, C.E., Cade, J.E. & Williams, R. 2015. Group-based training for self-management strategies in people with Type 2 diabetes mellitus.

Devalut, G. 2018. Establishing trustworthiness in qualitative research

Dunning, T. 2014. *Care of People with Diabetes: A Manual of Nursing Practice*. 4th edition. UK: John Wiley & Sons, Ltd.

Etukudo, I.O. 2013. Patients' knowledge, perception and practice regarding diabetic self-management skills and behaviour in Mokopane Hospital. From: <http://hdl.handle.net/10539/16673> (accessed 08 June 2017).

Evert, A.B., Boucher, J.L & Cypress, M. 2013. Nutrition therapy recommendations for the management of adults with diabetes. *Diabetes care*: PubMed 36(11); 3821-3842

Fottler, M.D., Malvey, D. & Slovensky, D.J. 2015. *Handbook of health care management*. Elgar Publishing.

Funell, M.M., Brown, T.L., Childs, B.P., Haas, L.B., Hosey, G.M., Jensen, B., Maryniuk, M., Peyrot, M., Piette, J.D., Reader, D., Siminerio, L.M., Wanger, K., Weiss, M. & Martha, M. 2017. Diabetic care. *American Diabetes Association*, 32(1) 289-290. From: <https://doi.org/102337/dc17-ti03>. (Accessed 28 March 2017)

Gebrehiwat, T., Jemal, L. & Dewitt, T. 2013. Non-adherence and Associated Factors among Type 2 Diabetic Patients at Jimma University Specialized Hospital, Southwest Ethiopia. *Journal of Medical Sciences*, 13(7): 578-584.

Gershater, M.A. 2011. Documentation of diabetes care in home nursing services in a Swedish municipality: cross-sectional study of nurses' documentation. *Scandinavia journal of caring science*. Vol 25(2).Pg: 220-226. From (Accessed 19 January 2019).

Goedecke, J.H. & Oujda, E.O. 2014. Diabetes and physical activity. *Indian Journal of Medical Research*. From <https://doi:10.4103/0971-5916.184295>

Gough, L.L. & Grady, R.H. 2014. *Self-management comprehensive approach to management of chronic conditions*. *American journal of public health*.

Gregg, J.A., Callighan, G.M., Hayes, S.C. & June G.L. 2007 pp: 336-342. <http://dx.doi.org/10.1037/0022006x.75.2.336>. *American Psychological Association. Business Dictionary*. 2019. <http://www.businessdictionary.com> (Accessed on 23 February 2019)

Grunfeld, C. & Dunkner, R. 2016. Diabetes in HIV infected persons in Cameroon. John Wiley & Sons Ltd. From: <https://doi.org/10.1002/dmrr.2796>.(Accessed 19 January 2019).

Haregu, T.N. 2012. Qualitative data analysis. Health & medicine, technology, business.

Hayashi, S. & Chandramohan, D. 2018. Risk of active tuberculosis among people with diabetes mellitus: systemic review and meta-analysis. Tropical medicine and international health.

Health Systems Development Unit. 2010. *Primary Clinical Care Service* Cape Town: Heinemann.

Health24 Diabetes. 2017. Prevalence of diabetes in South Africa

Hemmati, M., Hashemlo, L. & Khalkhali, H. 2012. The effect of implementing Orem's self-care model on the self-esteem of elderly residents of a nursing home in Urmia. *Medical-Surgical Nursing Journal*. 1(1): 18-23

Hjerkind, K.V., Stenehjem, J.S. & Nilsen, T.I. 2018. Physical activity and risk of diabetes mellitus: *Prospective data from the population-based hunt study*. NORWAY. London: Islington

How SA can beat its sugar fueled diabetes epidemic. 2016. The Conversation.11 November.

Inamdar, Z.S, Kulkarni, R.V., Karajgi, S.R., Manvi, F.V., Ganachari, M.S. &Kumar, B.M.J. 2013. Medication adherence in diabetes mellitus: *An overview of pharmacist role*. American journal of advanced drug delivery.

Inzucchi, S.E., Bergenstal, R.M., Diamant, J.B., Ferrannini, E., Mauck, M., Peters, A.L., Tsapas, A., Wender, R. & Matthews, D.R. 2012. Management of hyperglycaemic in type 2 diabetic patients: a patient centred approach. Position statement of the America Diabetes Association (ADA) and the European Association for the study of diabetes (EASD). 55: 1577-1596: American Diabetes Association.

Ippolito, M.M., Lyles, C.R., Prendergast, K. & Marshall, M.B. 2016. Food insecurity and diabetes self-management among food pantry clients, Vol 20 (1): 183-189. From <https://doi.org/10.1017/S136898001786> (Accessed 24 February 2019)

Jawarski, M., Panczyk, M., Cedro, M. & Kucharska, A. 2017. Adherence to dietary recommendations in diabetic mellitus: *Disease acceptance as a potential mediator*. From: <http://doi.org/10.2147/ppa.s147233>

Joseph, P.N. 2013. Managing stress and diabetes. Diabetes forecast magazine.

Kassahum, T., Gesesew, H., Mwanri, L. & Eshtie, T. 2016. Diabetes related knowledge, self-care behaviours and adherence to medications among diabetic patients in Southwest Ethiopia: a cross-sectional survey.

Kassahun, A., Gashe, E., Mulisa, E. & Rike, W.A. 2016. Non-adherence and factors affecting adherence of diabetic patients to anti-diabetic medication in Assela General Hospital, Oromia region, Ethiopia.

Kearsly, K. 2013. Orem Self Care Model. *A nursing student report on Orem self care model*. Student nurse journey a caring community.
Simmons, J. 2014. Healthy eating and meal planning. From: <https://type2diabetes.com/diet-nutrition> (07 March 2019)

Kilavuz, T.M. 2017. *A quick guide to field work*. Maydan

Kimuna, S.R. & Makiwane, M. 2007. Older people as resources in South Africa. *Mpumalanga Households*

Klein, H.A., Jackson, S.M, Street, K., Whitacre, J.C. & Klein, G. 2013. Diabetes Self-Management Education: Miles to go.

Kumar, P. 2007. Application of Orem's Self-Care Deficit Theory and Standardized Nursing Languages in a Case Study of a Woman with Diabetes. *International Journal of Nursing Terminologies and Classifications*. Volume 18(3)

Long, K., Ritter, P.L., Moreland, C. & Laurent, D.D. 2017. *Chronic disease self-management programs*. Stanford University: Stanford school of medicine.

Lowry-Lehnen, T. 2015. The behavioural model. Behaviourism. Health and Medicine.

Luke, D. 2018. SASSA system failure: Food vouchers replace beneficiary funds: South Africa NEWS.

Mache, L.A. & McEvoy, B.T. 2016. *The Literature Review: Six Steps to Success*. 3rd edition. Singapore: Corwin.

Malema, R.M., Jali, M.N & Mothiba, T.M. 2014. Dietary knowledge and practices of diabetes mellitus patients at the Polokwane municipal clinics Limpopo Province, South Africa. *African journal for physical, health education, recreation & dance*.

Mashinge, K.P., Notshweleka, A., Moodley, S., Rahmtoda, F.H., Sayed, S.B., Singh, S. & Sardiwalla, Z. 2008. An assessment of the level diabetic patients' knowledge of diabetes mellitus, its complications and management in Durban, South Africa, 7(3): 95-105.

Master, K. 2011. *Dorothea Orem 1914 Nursing theories a framework for professional practice*. From: <http://library.stitch.edu/research/subject>. (Accessed 13 April 2017).

Masupe, T.K., Ndayi, K., Tsolekile, L., Delobelle, P. & Puoane, T. 2018. Redefining diabetes and the concept of self-management from a patient's perspective: implications for disease risk factor management. *Health Education Research*, Vol 33(1): 40-54. From: <https://doi.org/10.1093/her/cyx077>

Matsha, T.E., Rajiv, T.E., Soita, D.J., Hassan, M.S., Blanco-Blanco, E., Vergotine, Z. & Kengne, A.P. 2012. High prevalence of diabetes mellitus and metabolic syndrome in a South African coloured population: *Baseline data of a study in Belville, Cape Town*, 102(11).

McElfish, P.A., Bridges, M.D. & Hudson, J.S. 2015. Family model of diabetes education with a pacific Islander community. *Diabetes education*. 41(6): 706-715

McGowan, P., Fredericks, S., Gail, B. & Des Roseirs. 2009. Guidelines of strategies to support self-management in chronic conditions: Collaboration with clients

McGowan, P., Fredericks, S., Gail, B. & Des Roseirs. 2009. Guidelines of strategies to support self-management in chronic conditions: Collaboration with clients

Miller, T.A. & Dimatteo, M.R. 2013. Importance of family/social support and impact on adherence to diabetic therapy: *Diabetes, metabolic syndrome*.

Molelekwa, T. 2018. South African Social Grants are not enough, Health-E News: The south African health service news.

Murugesan, N., Snehalatha, C., Shobhana, R., Roglic, G. & Ramachandran, A. 2007. Awareness about diabetes and its complication in the general and diabetic population in city of Southern India. *Diabetes res clinpract*. 77: 433-7

Mushi, M.N. 2013. Assessment of barriers to improve diabetes management in old adults. *Diabetes care*

Nicholas, H. 2017. *Foods to avoid for people with diabetes, reviewed by N Butler*. Medical news.

Nursing Act, 2005. *Act No. 33 of 2005*. The South African Nursing Council: Pretoria.

Nutiet, L., Turkcan, A., Lawley, M., Zhang, L., Sands, L. & McComb, S. 2015. Health service research. 15:355. From: <https://doi.org.1186/512913-015-0933-5> (accessed August 2018)

Palmer, C.S. & Pinto, S.R. 2015. Perfil epidemiológico de pacientes com diabetes mellitus Salvador, Bahia, Brasil. 29(3): 240-9. From <https://portalseer.ufba.br/index.php/enfermagem/article/view/13158>

Palmer, J.R., Boggs, D.A. & Krishman, S. 2008. *Sugar sweetened Beverages and incidence of type 2 diabetes mellitus in African-American women*. 168(4): 1487-1492. From: doi:10.1001/archinte.168.14.1487 (accessed 18 June 2017)

Parker, R.M. & Jacobson, K.L. 2012. Health Literacy Emory School of Medicine and Public Health. [Online]. Retrieved from: <https://www.nationalacademies.org/hmd/~media/Files/Activity%20Files/PublicHealth/HealthLiteracy/HealthLiteracyFactSheets- Feb6- 2012- Parker-JacobsonFinal1.pdf>.

Parry, O. Peel, M. & Douglas, J. 2016. Issues of cause and control in patients account of type 2 diabetes. Vol 21(1). From <https://doi.org/10.1098/her/cyh044> (Accessed 19 January 2019).

Peres, D.S., dos Santos, M.A., Zanetti, M.L. & Ferronato, A.A. 2017. Difficulties of diabetic patients in the illness control.

Polit, D. & Beck, C. 2010. Essentials of nursing research: *Appraising evidence for nursing practice*. 7th edition. China: Lippincott Williams & Wilkins.

Polit, D.F. & Beck, C.T. 2012. *Nursing research generating and assessing evidence for nursing practice*. 9th edition. Wolters Kluwer Health: Lippincott Williams & Wilkins

Polit, D.F. & Hungler, B.P. (2011). *Nursing research: principles and methods*. 7th edition. Philadelphia: Lippincott

Powers, M.A., Bardsley, J., Cypress, M., Duker, P., Funnell, M.M., Fische, A.H., Maryniuk, M.D., Siminerio, L. & Vivian, E. 2016. Diabetes Self-Management Education and Support in Type 2 Diabetes: *A Joint Position Statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics*. Vol 34(2): 70-80

Ranasinghe, P., Pigera, A.S.A.D., Ishara, M.H., Jayasekara, L.M.D.T., Jayawardena, R. & Kutulanda, P. 2015. Knowledge and perceptions about diet and physical activity among Sri Lankan adults with diabetes mellitus: *A qualitative study public health*.

Ritholz, M. 2018. Finding the right diabetes support groups. Joslin diabetes centre.

Salkind, M.J. 2010. Encyclopaedia of research design. From: <http://dx.doi.org/10.4135/9781412961288.n137> (accessed 29 May 2017)

Schillinger, D., Hammer, H., Wang, F. Palacios, J & McLean, I. 2008. *Examining the reach of diabetes self-management support strategies in a public health care system*. 35: 664-682.

Schillinger, D., Handley, M., Wang, F. & Hammer, H. 2009. Effects of self-management support on structure, process and outcomes among vulnerable patients with diabetes, 32(4): 559-566.

Semenya, S., Potgieter, M. & Erasmus, L. 2012. Ethnobotanical survey of medicinal plants used by Bapedi healers to treat diabetes mellitus in Limpopo Province, South Africa, 141(1): 440-445.

Semenya, S.S. & Potgieter, M.J. 2014. Bapedi traditional healers in the Limpopo Province, South Africa: Their social cultural profile and traditional healing practice. *Journal of Ethnobiology and Ethnomedicine*.10(4).

Sharma, R. 2016. Exercise necessary for diabetes patient.

Sharma, T., Kalra, J., Dhasmana, D.C. & Basera, H. 2014. Poor adherence to treatment: *A major challenge in diabetes*. 15(1):26-9. Indian academy: Clinical medicine

Shilubane, H., Netshikweta, L. & Ralinena, T. 2016. Beliefs and practices of diabetic patients in Vhembe district of Limpopo Province by Poster: *Diabetes Metabs Supplements*,1(1) 241-256.

Shoenberg, N.E. & Drungles, S.C. 2001. Barriers to non-insulin dependent diabetes mellitus (niddm) self-care practices among older women. *Journal of aging health* 13: 443-466.

Shrivastana, S.R., Shrivastana, P.K. & Ramasamy, J. 2013. Role of self-care in management of diabetes mellitus. From: doi:10.1186/2251-6581-12-14 (Accessed 05 October 2018)

Sigal, R.J., Kenny, G.P. & Wasserman, H. 2004. Physical activity/exercise and Type 2 diabetes. *Diabetes care*, 27: 2518-2539. From:doi: <https://doi.org/10.2337/diacare>. 27.10.2518 pubmed: 15451933 (Accessed September 2018)

Simmons, J. 2014. Healthy eating and meal planning. From: <https://type2diabetes.com/diet-nutrition> (07 March 2019)

Sminerio, L.M., Funnell, M.N., Brown, T.L., Childs, B.P., Haas, L.B., Hosey, G.M., Jensen, B., Maryniuk, M., Peyurot, M, Piette, J.D.,Reader, D., Weinger, K. & Weiss, K. 2010. National standards for diabetes self-management education. American Diabetes Association.

Smith, J.A. 2014. *Qualitative psychology a practical guide for research methods*. 3rd edition. SAGE: London

South Africa Limpopo Province. 2017. Clinic statistics government printers Polokwane.

Sucuru, H.A., Kizilci, S., & Ergo, G. 2017. The Impact of Diabetes Education on Self-Care Agency, Self-Care Activities and HbA1c levels of patients with Type 2 Diabetes. *International journal of caring sciences*. Wiley Periodical: Vol 10(1)

Tan, M.,Y. & Magarey, J. 2008. Self-care practices of Malaysian adults with diabetes and sub-optimal glycaemic control. *Patient education and counseling*. Vol 72(2): 252-267.

The Conversation. 2016. How South Africa can beat its sugar-fuelled diabetic epidemic. (23 November 2016)

Thoesen, M. & Newton, K. 2005. *Supporting Self-Management in patients with chronic illness*. School of medicine: University of Louisville.

Torrey, T. 2011. *Levels of Medical Care: Primary, Secondary, Tertiary and Quaternary Care*. About.com. From: <http://women.about.com/od/moreprovidersbeyonddocs/a/Stages-Of-Care-Primary-Secondary-Tertiary-And-Quaternary-Care.htm> (Accessed 02 February 2019).

Turk, E., Palfy, M., Rupel, V.P. & Isola, A. 2012. General knowledge about population in Slovenia. Vol 81 (7). From: <https://vestnik.szd.si/index.php/ZdravVest/article/view/592>

Uchenna, O.V. & Ijeoma, E.O. 2009. Knowledge of diabetes management and control by diabetic patients: *International journal of medicine and medical sciences*: 1 353-358

Ugalde, A., Haynes, K., Boltong, A., White, V., Meinir, K., Schofield, P., Sanchia, A. & Livingston, P. 2016. *Self-guided interventions for managing psychological distress in people with cancer*. School of Nursing & Midwifery, Deakin University, Australia.

Van Deventer. H. 2017 International diabetes federation, HEALTH 24. Mayo clinic WebMD

Vidyahar, B.M.S. 2016. Behavioural model in health promotion. Health & Medicine

Wagnild, G., Rodriguez, W. & Pritchett, G. 1987. Orem's Self-Care Theory: A Tool for Education and Practice. *Journal of Nursing Education*. 26(8): 342-343. From <https://doi.org/10.3928/0148-4834-19871001-12> (Accessed 13 January 2019).

Watson, R., McKenna, H, Cowman, S. & Keady, J. 2008. *Nursing research designs and methods*. Europe, Australia, Canada, USA: Elsevier

Wayne, G. 2016. *Dorothea Orem's Self-Care Theory*

WHO global HIV/AIDS response. 2011. *Epidemic update and health sector progress toward universal access*.

Williamson, A.E., Ellis, D.A., Wilson, P., McQueenie, R. & McConnachie, A. 2017. Understanding repeated non-attendance in health services: a pilot analysis of administrative data and full study protocol for a national retrospective cohort.

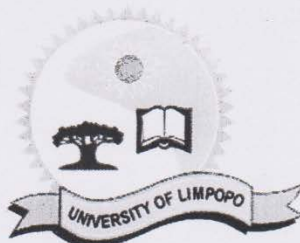
Wolfman, T. 2017. *How an RDN (Registered Dietitian) can help with diabetes*. University hospitals plymouthnhs trust

World Health Organisation. 2015. *Health Statistics and Health Information Systems*. www.who.int/healthinfo/statistics/indmaternalmortality/en/ Accessed 01 June 2015.

World Health Organization. 2016. *Global report of diabetes*. Geneva, 2016 (Accessed 29 September 2018).

World Health Organizaton. 2011. From: <https://en.wikipedia.org/wiki/health>. (Accessed 22 June 2017).

ANEXURE A: Approval from TREC (Turfloop Research and Ethics Committee)



University of Limpopo
Department of Research Administration and Development
Private Bag X1106, Sovenga, 0727, South Africa
Tel: (015) 268 2212, Fax: (015) 268 2306, Email:noko.monene@ul.ac.za

**TURFLOOP RESEARCH ETHICS
COMMITTEE CLEARANCE CERTIFICATE**

MEETING: 31 August 2017

PROJECT NUMBER: TREC/255/2017: PG

PROJECT:

Title: Self-Management strategies for diabetics patients on treatment in the primary health care facilities of Sekhukhune District under Elias Motswaledi Municipality of Limpopo Province

Researcher: PD Makofane

Supervisor: Prof TM Mothiba

Co-Supervisor: Ms MA Bopape

School: Health Care Sciences

Degree: Masters in Nursing Sciences


PROF. TAB MASHEGO
CHAIRPERSON: TURFLOOP RESEARCH ETHICS COMMITTEE

The Turfloop Research Ethics Committee (TREC) is registered with the National Health Research Ethics Council, Registration Number: **REC-0310111-031**

Note:

- i) Should any departure be contemplated from the research procedure as approved, the researcher(s) must re-submit the protocol to the committee.
- ii) The budget for the research will be considered separately from the protocol.
PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES.

ANEXURE B: Letter seeking approval from Department of Health Limpopo

MAKOFANE PHELADI
P O BOX 1502
BURGERSFORT
1150

Private Bag X9302
POLOKWANE
0700

REQUEST FOR PERMISSION TO CONDUCT RESEARCH

I, Makofane P.D Student number: 201002843, a student at University of Limpopo registered for Masters in Nursing hereby request permission to conduct a research in primary health care facilities at Sekhukhune District of Limpopo Province.

Title: "Self-management strategies for diabetic patients in primary health care facilities of Sekhukhune District under the Elias Motswaledi municipal, Limpopo Province, South Africa

The purpose of the study is to determine the self-management strategies that are being used to maintain the quality of life by diabetic patients.

The participants in this study will be diabetic patients.

Your positive response will be highly appreciated.

Thanking you in advance for your assistance.

Researcher's signature:.....

Cell: 0796374373

E-mail address: makphe@gmail.com

ANEXURE C: Approval letter from Limpopo Department of Health



LIMPOPO
PROVINCIAL GOVERNMENT
REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF HEALTH

Enquiries: Stals M.L. (015 293 6160)

Ref:4/2/2

Makofane P(LP_201710_005)
PO Box 1502
Burgersfort
1150


Greetings,

RE: Self-management strategies for diabetic patients in primary health care facilities of Sekhukune District of Limpopo Province

The above matter refers.

1. Permission to conduct the above mentioned study is hereby granted.
2. Kindly be informed that:-
 - Research must be loaded on the NHRD site (<http://nhrd.hst.org.za>) by the researcher.
 - Further arrangement should be made with the targeted institutions, after consultation with the District Executive Manager
 - In the course of your study there should be no action that disrupts the services.
 - After completion of the study, it is mandatory that the findings should be submitted to the Department to serve as a resource.
 - The researcher should be prepared to assist in the interpretation and implementation of the study recommendation where possible
 - The above approval is valid for a 3 year period.
 - If the proposal has been amended, a new approval should be sought from the Department of Health.
 - Kindly note, that the Department can withdraw the approval at any time.

Your cooperation will be highly appreciated.


Head of Department: BEWBO

2017/11/06
Date

ANEXURE D: Consent Form

DEPARTMENT OF NURSING SCIENCE ENGLISH CONSENT FORM

Statement concerning participation in a clinical research study.

Title: Self-management strategies for diabetic patients under treatment in the primary health care facilities of the Sekhukhune District in the Elias Motswaledi municipality of Limpopo Province, South Africa

I have read the information and heard the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurised to participate in any way.

I know that sound recordings will be taken. I am aware that this material may be used in scientific publications which will be electronically available throughout the world. I consent to this, provided that my name and hospital number are not revealed.

I understand that participation in this study is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment for my condition neither will it influence the care that I receive from my regular doctor.

I know that this study has been approved by the Turfloop Research Ethics Committee (TREC). I am fully aware that the results of this study will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

The study envisaged may hold some risk for me that cannot be foreseen at this stage.

Access to the records that pertain to my participation in the study will be restricted to persons directly involved in the research.

Any questions that I may have regarding the research, or related matters, will be answered by the researcher.

If any medical problem is identified at any stage during the research, or when I am evaluated for participation, such condition will be discussed with me in confidence by a qualified person or I will be referred to my doctor.

I indemnify the University of Limpopo and all persons involved with the above study from any liability that may arise from my participation in the above project or that may be related to it, for whatever reasons, including negligence, on the part of the mentioned persons.

I hereby give consent to participate in this Study

Signature of researched person.....

Signature of researcher.....

Signed at.....this.....day of.....20

Contact No: 0796374373

ANEXURE E: Coding report

FOR: Makofane P

DATE: 2018/08/23

STUDY: SELF-MANAGEMENT STRATEGIES FOR DIABETIC PATIENTS ON TREATMENT

INDEPENDENT CODING BY: PROF SM MAPUTLE

METHOD: 8 STEPS OF TECH'S INDUCTIVE, DESCRIPTIVE OPEN CODING TECHNIQUE Creswell (2014) was used by following the steps below:

Step 1 – Reading through the data

The researcher got a sense of the whole by reading all the verbatim transcripts carefully. This gave an idea about the data segments and what they look like/mean. The meanings that emerged during reading were written down, as were all ideas as they came to mind. The researcher carefully and repeatedly read the transcripts of all the participants and understood them.

An uninterrupted period of time to digest and think about the data in totality was created. The researcher engaged in data analysis and wrote notes and impressions as they came to mind.

Step 2 – Reduction of the collected data

The researcher scaled down the data collected to codes, based on the existence or frequency of concepts used in the verbatim transcriptions. The researcher then listed all topics that emerged during the scaling down. The researcher grouped similar topics together, and those that did not have any association were clustered separately. Notes were written in margins and the researcher started recording

thoughts about the data in the margins of the paper where the verbatim transcripts appear.

Step 3 – Asking questions about the meaning of the collected data

The researcher read through the transcriptions again and analysed them. This time the researcher asked herself questions about the transcriptions of the interview, based on the codes (mental picture codes when reading through) which emerged from the frequency of the concepts. The questions were: “Which words describe it?” “What is this about?” and “What is the underlying meaning?”

Step 4 – Abbreviation of topics to codes

The researcher started to abbreviate the topics that emerged as codes. These codes needed to be written next to the appropriate segments of the transcription. Differentiation of the codes by including all meaningful instances of a specific code’s data was done. All these codes were written in the margins of the paper against the data they representing a different colour.

Step 5 – Development of themes and sub-themes

The researcher developed themes and sub-themes from coded data and the associated texts and reduced the total list by grouping topics that related to one another to create meaning of the themes and sub-themes.

Step 6 – Compare the codes, topics and themes for duplication

In this step, the researcher rework from the beginning to check the work for duplication and to refine codes, topics and themes where necessary. Using the list of all codes she checked for duplication. The researcher grouped similar codes and recoded others, where necessary so, that they matched the description.

Step 7 – Initial grouping of all themes and sub-themes

The data belonging to each theme were assembled in one column and preliminary analysis was performed, which was followed by a meeting between the researcher

and co-coder to reach consensus on the themes and sub-themes that each had come up with independently.

Table 1: Themes and sub-themes reflecting the self-management strategies of diabetic patients under treatment

Main themes	Sub-themes
<p>5. Explanation of self-management strategies maintained by diabetic patients</p>	<p>5.1 The importance of adherence to diabetic diet taking small portions viewed as important by patients</p> <p>5.2 Management of own stress levels leading to maintaining normal glucose levels</p> <p>5.3 Adherence to prescribed medications is known as significant to maintain of quality of life</p> <p>5.4 Commitment to adhere to scheduled follow up visits and healthcare advices viewed as a good practice</p> <p>5.5 The importance of regular exercises for people with diabetes</p> <p>5.6 Importance of frequent drinking of water viewed as important for people with diabetes</p> <p>5.7 Use of less salt in food known to lessen the chance of developing hypertension</p>
<p>6. Knowledge related to self-management strategies amongst diabetes patients</p>	<p>6.1 Knowledge versus lack of knowledge related to the predisposing factors for developing diabetes</p> <p>6.2 Knowledge of food to avoid by diabetic patients to maintain normal glucose levels</p> <p>6.3 Regular body exercise known as a life style that must be adopted to maintain quality of life</p> <p>6.4 The importance of maintaining acceptable body weight known as a strategy to control blood glucose levels</p> <p>6.5 Existing knowledge related to medication they are</p>

	<p>taking for diabetes marked</p> <p>6.6 Existence of knowledge related to food contents to look for when buying food</p> <p>6.7 Existence of knowledge related to the types of drinks which must be avoided</p> <p>6.8 Knowledge versus lack of knowledge related to normal and abnormal glucose levels and testing times</p> <p>6.9 Knowledge versus lack of knowledge related to emergency care of hyperglycaemia and hypoglycaemia</p> <p>6.10 Knowledge versus lack of knowledge related to signs and symptoms of diabetes</p>
<p>7. Challenges experienced when living with diabetes</p>	<p>7.1 Co-morbidity of HIV and AIDS outlined as problematic</p> <p>7.2 Lack of adherence to diabetic treatment and diet a challenge which leads to severe complications</p> <p>7.3 Scheduled time for taking treatment and food a challenge whilst not at home.</p>
<p>8. Suggested self-management strategies related to maintenance of quality of life by diabetic patients</p>	<p>8.1 Adherence to diet, stress management and maintaining scheduled appointments emphasised</p> <p>8.2 Visit to dietician viewed as important for every newly diagnosed patient</p> <p>8.3 Taking prescribed treatment and diabetic diet</p> <p>8.4 Every diabetic patient is advised to belong to a support group</p>

SUMMARY OF OBSERVATIONS MADE DURING ANALYSIS OF DATA

The following observations were made:

- Data saturation was reached with all themes and sub-themes except the sub-themes of Theme 3. Saturation is based on the verbatim excerpts from the transcriptions and voice recordings provided.
- Data saturation was achieved related to major themes because they are four themes. All the themes have four or more sub-themes except Theme 3.
- The problem which was identified is that the researcher asked leading questions. The independent coder viewed this as a gap.

Report compiled by: Prof MS Maputle

ANEXURE F: Certificate from independent coder

Qualitative data analysis

MCUR Nursing

Ms Pheladi Makofane

THIS IS TO CERTIFY THAT:

Professor Maria Sonto Maputle has co-coded the following qualitative data:

Unstructured one-to-one interviews

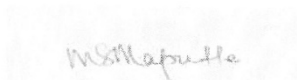
For the study:

SELF-MANAGEMENT STRATEGIES FOR DIABETIC PATIENTS ON TREATMENT IN THE PRIMARY HEALTH CARE FACILITIES OF SEKHUKHUNE DISTRICT UNDER ELIAS MOTSWALEDI MUNICIPAL OF LIMPOPO PROVINCE, SOUTH AFRICA

I declare that the candidate and I have reached consensus on the major themes reflected by the data. I further declare that adequate data saturation was achieved as evidenced by repeating themes.

Prof MS Maputle

24.08.2018



MS Maputle (PhD)

ANEXURE G: Transcript

Researcher: How are you?

Participant: I am good and you?

Researcher: I am good, I am Makofane, a student at the University of Limpopo doing Master's in Nursing Science, and I am here to do research on diabetes condition. This is a voice recorder and a consent form are evidence to show that I really conducted this study. We both sign the consent form to show that you gave me a permission to interview you.

Participant: No problem you can continue

Researcher: When were you diagnosed with this condition?

Participant: I don't remember.

Researcher: Is it months or years?

Participant: Is about 5 years.

Researcher: How did you know that you were diabetic, what happened for you to go for a consultation?

Participant: I was working with people who are diabetic. I used to see how they conduct themselves in terms of food. They drink water frequently. The first sign I had was dizziness

Researcher: Hmm...

Participant: Yes, but I just thought maybe is diabetes mellitus. I didn't want to go to clinic. I was weak for two days, on the last day I asked my son to take me to the clinic. And I had a bottle of water because I felt thirsty more often, I was obese when I arrived to clinic they attended me urgently and I was then referred to hospital to a doctor. When I arrived at hospital I was given an injection and they said is a life-long thing.

Researcher: Can you tell me about the strategies that you do while at home to take care of yourself, so you feel as normal as possible?

Participant: As normal? To feel like I am not diabetic?

Researcher: Diabetic will always be there, I mean the strategies that you do to take care of yourself?

Participant: It doesn't stress me that much it was never low. Not long ago I think it was in December I had a stress and it went up to 13mmol/L.

Researcher: Do you have programmes in the community that you follow or any support groups?

Participant: I was given a diet to follow here.

Researcher: Do you follow it?

Participant: To be honest am not.

Researcher: Then how do you do it?

Participant: Injection

Researcher: Then the sugar level gets controlled?

Participant: Yes

Researcher: Since you started taking treatment?

Participant: Yes

Researcher: How about exercise?

Participant: Ahh... I don't, I just do house chores, I like doing house chores.

Researcher: Alright

Participant: Yes, I am not lazy

Researcher: Can you read English?

Participant: Yes

Researcher: This is leaflet information you can read it while at home.

Participant: Is it the information on how I should conduct myself?

Researcher: This leaflet information is about where I am from and it has information about the study. If there is something you don't understand, you can always call.

Participant: Alright

Researcher: Thank you

ANEXURE H: Interview guide

ENGLISH LANGUAGE

The interview will be conducted in a language that the patients understand.

Central question is *“What are the self-management strategies that diabetic patients use to feel as normal as possible?”*

Probing questions

The following probing questions will be asked of all the participants:

1. What are the programmes that you follow on self-management?
2. How helpful are they?
3. What is it that you think you can improve on maintaining the quality of life in this condition?

POLELO YA SEPEDI

Potsišo etloba “Naa o kakgona go hlaloša ditselana/magato/mekgwa/ yeo o ešomišago go itlhokomela, yeo ego dirago gore oikwe o phetše gabotse bjalo kamolwetši yoo anago le bolwetši bja swikiri?”

Dipotšišotsagolatela:

1. Ke magato a mafe ao o alatelago go itlhokomela ka gare ga bolwetši bjo?
2. Ago thušajoang?
3. Ke eng seo o naganago gore oka se fetola gore otle o kgone go tšwela pele ka bophelo kamo gare ga bolwetši bjo?

ANEXURE I: Certificate from editor

Douglasdale

Sue Matthis B A (Hons)
1 Oden Place

2191

Cell: 0837817646

Email: suematthis@gmail.com

TO WHOM IT MAY CONCERN

This serves as confirmation that I have proofread and language edited the following
dissertation written by

MAKOFANE PD (201002843):

The self-management strategies for diabetic patients under treatment in the primary
health care facilities of the Sekhukhune district of the Elias Motswaledi municipality
in the Limpopo province, South Africa

submitted in fulfilment of the requirements for the Degree of Master in Nursing
Science

Faculty of Health Sciences, (School of Health Care Sciences), University of
Limpopo.



Mrs S E Matthis

22 March 2019

