

**COMMUNICATION DYNAMICS IN PRODUCING EFFECTIVE
PATIENT CARE: A CASE STUDY AT STANGER
HOSPITAL'S DIABETES CLINIC IN KWAZULU-NATAL,
SOUTH AFRICA**

by

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DECLARATION

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I declare that “*Communication dynamics in producing effective patient care: a case study at Stanger Hospital’s diabetes clinic in KwaZulu-Natal, South Africa*” is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.



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ABSTRACT

Interactive health communication between the health-care professional (HCP) and patient relationship for diabetes health-care positively contributes to patient-centred care. Hence individual patient concerns are addressed and catered for in the medical system. The purpose of this study was to analyse in-depth how HCP-patient relationships and HCP-HCP teamwork dynamics positively contribute to effective diabetes patient care and treatment adherence. Different health communication models and theories were reviewed and a conceptual framework was developed from the literature. A qualitative case study approach was used to collect data at Stanger Hospital's diabetes clinic. Data was collected using three different methods, namely in-depth interviews with HCPs and patients individually, observations conducted at the clinic analysing both the HCPs and patients, and finally, documentation that emerged as a third data collection method where patient files and diabetes educational material were analysed at the clinic. Triangulation by means of the three methods ensured that reliable, valid and credible data was collected in the field.

Diabetes health-care and treatment management are affected by the social context/social system which includes family and culture. These social factors are acknowledged as core in the literature. However, a single comprehensive health communication model did not exist solely in this regard. The data indicated that at the Stanger Hospital's diabetes clinic, patient-centred (individual tailor-made treatment plans) care was only implemented after patients had defaulted treatment for reasons linked to their social circumstances.

The findings of the study indicate that teamwork was favoured in the HCP-HCP relationship at the diabetes clinic, and that this made a positive contribution to effective diabetes patient care. HCPs were overburdened at the clinic since patient numbers were high and there were staff shortages. The patients' empirical data indicated that interactive communication positively contributed to their medical concerns being catered for at the diabetes clinic, but this tended to occur only after non-adherence. Patients required care and support from HCPs in order to learn to accept diabetes and manage their illness.

Keywords

Interactive health communication, persuasive communication, communication exchange, cognitive, psychological, social system/context, family, culture, HCP-patient relationships, HCP-HCP teamwork, biomedical, biopsychosocial, apartheid medicine, patient-centred care, communication dynamics, diabetes, treatment adherence, public health-care, case study

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Diabetes is now recognised as the number two killer disease in South Africa (Masombuka 2015:7). Diabetes diagnostic rates have increased substantially over time; the disease is a leading non-communicable illness that is on the increase in the local, global and African contexts (Amos, McCarty & Zimmet 1997:7; Hunter & Srinath Reddy 2013:1336). Diabetes risk increases with age – this is evident in a South African context where diabetes was noted as one of the leading causes of death among the aged, after cerebrovascular diseases such as hypertension, cholesterol and heart disease. According to Masombuka (2015:7), *“the highest proportions of older people on medication were on drugs for hypertension and diabetes”*. Diabetes is also genetically inherited, meaning that certain race groups such as the black and Indian communities, as opposed to the white and coloured ethnic groups, are prone to it.

The reality of diabetes has been acknowledged in public health-care facilities in South Africa. However, this illness now adds to the financial burden of the country with regard to the availability of medication to treat diabetes, specialist staff and the need for basic medical care. The majority of South Africans make use of public health-care facilities to manage their diabetes since major disparities exist among the aged with regard to medical aid access. According to Statistics South Africa, private health-care is accessed by 78% of the white population, 35.8% of Indian people, 15.9% of coloureds and 5.5% of the black population, who have medical aid coverage (Statistics South Africa 2015:17).

In the context of the above, health communication (as for the purposes of this study) explicates health-care professional (HCP) and patient relationships when related to diagnosing and treating illnesses. This study is concerned with the role of communication dynamics in HCP-patient relationships and HCP-HCP relationships

for diabetes health-care and treatment purposes in the South African public health-care system. Communication dynamics for the purpose of this study refers to HCP-patient and HCP-HCP interactions that occur during treatment sessions. Persuasive communication in HCP-patient interactions entails communication dynamics that can either converge or diverge effective understanding of diabetes as an illness and also treatment adherence. In this regard, HCP-HCP teamwork can further facilitate effective patient care for treating an illness such as diabetes. Interactive health communication requires that the social context of the patient be taken into account. When considering health-care, a patient-centred approach in the HCP-patient relationships should be emphasised when treating an illness such as diabetes.

However, present health communication models and theories do not cater for the comprehensiveness of intrapersonal (patient's cognitive mental state) and interpersonal (HCP-patient interaction) communication in the patient's social context. This includes cultural and family factors when treating an illness such as diabetes. The importance of these factors is outlined further in this chapter. Communication cannot exist in isolation. Thus, in order to address this void, a comprehensive conceptual framework is developed and synthesised from the literature for the purposes of this study in order to cater for the individual patient's social context for treating diabetes as an illness.

This chapter discusses the purpose and contextualisation of the research. The formulation of the research goal and research questions is also outlined. Operational concepts are then discussed, but terms and definitions are explained throughout the thesis in the different chapters. The chapter concludes with the contribution of the study and the chapter demarcation of the thesis.

1.2 PURPOSE AND CONTEXTUALISATION

In the subsections below, the purpose and contextualisation of the study are discussed by explaining the severity of diabetes as an illness and the importance of patient-centred and interactive health communication care as a context for this study. The element of HCP-HCP teamwork is contextualised in relation to its contribution to

effective patient management for diabetes and there is a brief discussion of public health-care in relation to the selected research site.

1.2.1 Diabetes: acknowledgement as a severe chronic illness

Diabetes is an illness that is as hazardous as any other chronic illness, yet the severity of this illness often goes unnoticed. According to Meeto (2008:1320), chronic illnesses such as diabetes, cancer, respiratory diseases and cardiovascular diseases continue to contribute to an increase in mortality rates worldwide. The rate of increase in diabetes is contributing to the global burden of chronic illnesses in both developed and developing countries. A need exists to acknowledge diabetes as a major chronic illness that is leading to an increase in death rates worldwide. The epidemiology of the illness and details of diagnostic levels internationally, in the African context, and locally are given in chapter 2.

Because of the increasing number of diagnosed cases, diabetes mellitus (DM) has become a concern in the public health-care arena. The severity of the disease has been underestimated for years, both locally and globally. According to Tokuhata, Miller, Digon and Hartman (1975:23), technical issues relating to the recording of the underlying cause of death (as opposed to the immediate cause of death) may lead to an underreporting of DM-related mortality. The insidious nature of this chronic disease is another reason for the underreporting of DM-related morbidity and mortality.

DM is acknowledged as a major public health problem in South Africa (see chapter 2 for diagnostic levels of diabetes). Research is needed in the public health-care sector in order to analyse the effectiveness of provider-patient relationships and provider-provider relationships in assisting with effective care and treatment for patients with DM in the public health-care system. Providers are often overburdened, face poor working conditions and high workloads. Moreover, the cost of treatment is of major concern, especially in the developing world (Bjork 2001:18). These matters are discussed further in chapter 2.

1.2.2 The importance of patient-centred care as a context for the study

Stewart (2001:445) explains that patient-centred care is a vital aspect of an individual patient's overall health-care by saying "*the patient should be the judge of patient centred care.*" Patient-centredness should focus on a "healing relationship" and should emphasise the patient's notion of his or her illness. The explanation above ties in with the theoretical explanation expanded on in chapter 4. Patients experience certain cognitive ideas and feelings, and develop attitude changes towards their illness, and thus have certain expectations of the health-care they receive.

Patient-centredness focuses on building a relationship between HCPs and patients who interact with each other for health-care and treatment adherence purposes. According to Lee and Garvin (2003:449), "*communication in most health and health-care settings assumes that information provision is both necessary and sufficient to improve individual behaviour and, subsequently health*". With effective HCP-patient interactive health-care sessions, information on the illness can be transferred from the HCP to the patient, and vice versa, in order for optimal health-care to be achieved.

In a medical setting, communication should be interactive in order for the patient's perspective of the illness to be heard. If patients are given a say in the medical system, then the social contexts of healthcare and treatment adherence can be explored and catered for. Lee and Garvin (2003:449) explain that health-care systems need to move from information transfer to information exchange between the HCP and the patient in order for healthcare to be adequately maintained. HCPs need to exchange information at an interactive level with patients instead of only transferring information about the biomedical aspects of the illness to them. In this way, the social aspects of medical care from patients' perspectives can be explained and thus catered for by HCPs.

HCPs and medical systems, need to cater for cultural diversity in medical care. According to Waters et al (2008:40), "*cultural competence in health is an important concept and approach to design, delivery, and evaluation of public healthcare systems, policies, programs, and action. To achieve meaningful and culturally relevant outcomes it is often necessary to be flexible and innovative, within a useful*

set of boundaries.” HCPs need to work collaboratively with communities to educate themselves further on cultural competence. Public health-care needs to shift its focus to incorporate cultural tolerance so that maximum patient care can be achieved. The social aspect of family needs to be catered for in the public health-care system for diabetes treatment. Berry (2007:48) suggests that “significant others” can impact positively on individual patients’ health concerns. The latter study argued that from a social perspective, family contributes positively to diabetic patients’ health-care by providing support to the patient and motivating the patient to work towards achieving treatment adherence. Thus family members should be included in a patient’s health-care sessions. The social context/social system and its relationship with health-care are discussed in detail in chapter 4.

1.2.3 The importance of interactive health communication

Wagner, Austin, Davis, Hindmarsh, Schaefer & Bonomi (2001:64) sum up the importance of interactive health communication between HCPs and patients for diabetes healthcare as follows:

“The growing number of persons suffering from major chronic illnesses face many obstacles in coping with their condition, not least of which is medical care that often does not meet their needs for effective clinical management, psychological support, and information. The primary reason for this may be the mismatch between their needs and the care delivery systems largely designed for acute illness.”

Diabetes is an illness that requires social, psychological and medical support on the part of the HCP. Patients need to manage their diabetes and thus require support from the medical care system in order to achieve optimal health-care. HCPs need to cater for individuality when treating diabetic patients, since treatment regimens differ for individual patients. Patients need to become more autonomous in their treatment decisions in order for treatment adherence to be maintained. Luffey and Wishner (1999:635) suggest that *“by moving to a more social paradigm for understanding patient behaviour, practitioners can expand the type of explanations, and therefore the type of solutions, they have for therapeutic adherence”*. Interactive

communication is a core requirement in the medical system in order to facilitate effective care and treatment options for diabetic patients. HCPs need to communicate with patients in order to explore social concerns that are possible barriers to effective treatment maintenance. Hence the question of patient-centred care is required in order to understand the individual patient's perspective on diabetes. A shift has to occur, away from the conventional biomedical treatment system, to a more patient-centred treatment system in order to achieve effective healthcare and treatment adherence.

Cooper, Booth and Gill (2003:203) conclude that HCPs need to analyse the relationships they share with diabetic patients in order to facilitate effective diabetes education between the HCP and the patient. HCPs need to include patients in treatment decisions in order to facilitate treatment adherence from the patient's perspective. HCPs need to respect the patient's role in the medical system as the person living with the illness. The aspect of HCP-patient roles in the medical system is emphasised in the theoretical model that explains possible barriers to effective communication in HCP-patient relationships. Theoretical models are expanded on in chapter 4. Similarly, patients need to trust the HCP as their service provider, in order to communicate interactively and freely with them. Effective HCP-patient relationships in the medical system contribute positively towards diabetes health-care. Interactive communication can empower patients by educating them on diabetes, but support from the HCP is vital for patients to work towards diabetes self-management (Cooper et al 2003:205).

Health communication needs to occur between the HCP and the patient in order for diabetes information to be transferred during interactive diabetes treatment sessions. Anderson (1990:68) states that *"health-care provider-patient interactions are complex processes that involve preferences and beliefs that participants bring to the interaction, the degree of communicative skill the participants can draw on during the interaction and their reaction to the consultation"*. Another key factor that HCPs need to cater for during interactive communication sessions is health literacy. Patients need to understand the language of communication, in order to effectively process interactions regarding diabetes health-care. According to Parikh, Parker, Nurss, Baker and Williams (1996:33), illiteracy is considered a social problem. HCPs need to cater for healthcare literacy aspects in diabetes health-care. Communication that

is not properly understood can have negative implications for diabetes health-care and treatment adherence (Schillinger, Piette, Grumbach, Wang, Wilson, Daher, Leong-Grotz, Castro & Bindman 2003:83).

1.2.4 HCP-HCP teamwork for effective patient care

In the medical system, HCP-HCP teamwork is a vital component for ensuring that effective patient care is given. A healthy working environment between treatment team members positively contributes to patient care. Apker (2012:153) states that *“health teams are characterized by several distinct qualities and specific configurations that vary within and across health organizations. The unique features of health teams and the multiple types of team structures play a role in team communication.”* Poor teamwork can affect patients negatively, while teamwork that is collaborated effectively can save patients' lives (Apker 2012:151). The HCP-HCP model emphasises the theoretical focus of this discussion. The theory indicates that barriers such as role stress, insufficient interdisciplinary understanding and autonomy struggles are possible barriers that can negatively impact on HCP-HCP teamwork (Northouse & Northouse 1985:96). The question of HCP-HCP teamwork is explained in detail in chapter 4.

1.2.5 Public health-care at the chosen research site

For the purposes of this study, the diabetes clinic at Stanger Hospital was used.

Research was conducted at the Stanger Provincial Hospital. It is important to understand that this is a state hospital and thus controlled by government. This implies that in the selected case study site, public health-care is delivered under restricted conditions given the availability of funding and human resources. Chapter 2 contextualises the background of public health-care systems in South Africa and provides additional context for the study. Patients who seek public health-care are usually from middle to generally lower socioeconomic backgrounds (Sibiya & Gwele 2013). According to Goudge, Gilson, Russell, Gumede and Mills (2009:18), *“in strengthening the public sector it is important not only to improve drug supply chains,*

ambulance services, referral systems and clinical capacity at public clinics, and to address the financial constraints faced by the socially disadvantaged, but also to think through how providers can engage with patients in a way that strengthens the therapeutic alliance.” South Africa, as a middle-income country, faces the dual problem of financial constraints in its public health-care system on the supply side of health-care provision and socioeconomic constraints in treatment adherence by patients unable to afford time off, travel costs or changes in diet. According to Beckert and Van der Merwe (2010:114), (in 2010) *“about 47 million people live in South Africa. Approximately 80% of these receive government-sponsored medical care and 20% receive medical care in the private sector.”* By mid-2014, the population of South Africa was estimated to be 54 million (Statistics South Africa 2014).

1.3 THE RATIONALE FOR THE STUDY

The rationale for this study was explained by a need for a sociological analysis of the role of provider-patient communication in fostering patients' understanding of DM as a manageable chronic illness. Effective communication could reduce costs and further financial strain on the health-care system since patients who understand communication from the HCP are able to adhere to treatment options efficiently once the importance of adherence has been interactively communicated or transferred between the HCP and the patient. In addition, effective provider-provider communication is needed to ensure sound patient care and treatment adherence. Hence the issue of teamwork also needs to be considered in the public health-care context.

Knowledge of and education in DM as a disease and treatment options are limited when it comes to the lay (non-medical) public. According to Motala (2002:18), *“the natural history and clinical course of diabetes in Africa is poorly understood. Mortality rates are unacceptably high, and major contributions still include preventable acute metabolic and infective causes.”* Thus there is a need to educate diabetic patients about the disease and teach them about treatment options and self-care. According to Meneghini et al (2007:21–22), patients should receive education from medical providers about DM management by assisting them to understand the following:

- the causes and the progressive nature of Type 2 diabetes
- the benefits of glycaemic control and the consequences of both hyperglycaemia and hypoglycaemia
- metabolic/health goals
- how to modify their lifestyle
- how to adjust their therapy on the basis of the self-monitoring of blood glucose (SMBG) readings

Communication forms a vital part of the provider-patient relationships in treatment and care for DM. According to Shillitoe (1988:60), *“one of the most commonly advanced explanations for poor control is that the patient has not been adequately taught how to achieve good control.”* The provider needs to communicate with the patient to ensure that effective treatment occurs. With a disease such as DM, patients must become empowered and understand how to cope with the disease and adjust their lifestyles accordingly. Medical providers are educated in biomedical disease diagnosis and treatment options, but might find it challenging to educate patients on how to cope with DM and manage the illness. According to a study conducted by Abdulhai, Al Shafae, Fredenthal, Ostenson and Ahlstrom (2007:4) on provider-patient interactions, DM patients indicated that major barriers to effective treatment included

“the manner in which they were greeted by the doctors and nurses; poor attention and eye contact during encounters; interrupted consultation privacy, lack of encouraging the patients to ask questions or express their concerns; and lack of transfer of medical information.”

It is therefore clear that for patients to adhere to diabetes treatment, they need to be educated via effective communication.

Another significant factor focuses on the aspect of communication dynamics that occurs in provider-to-provider (HCP-HCP) treatment teams for DM patients. Team members need to work together to ensure that the patient is effectively cared for in the medical system. The patient needs to be the centre of focus to ensure that adherence is achieved. According to Hayes, McCahon, Panahi, Hamre and Pohlman

(2008:161), *“to improve patient outcomes, not only must the behaviour of patients be changed but also that of providers and practices”*.

1.4 RELEVANCE TO SOCIOLOGY

The research fits into the subfields of sociology of health-care and sociology of communication because it critically examines the social dimension of communication dynamics. According to Clarke (2001:7–8, 26), the discipline of sociology provides different perspectives for trying to understand the social world. *“Each perspective gives us a different slant on social behaviour and thereby adds to our knowledge of the nature, structure and content of social relationships and patterns of social interaction.”*

According to Pescosolido (2006:193), when integrating sociological studies into the field of health sciences, the diversity of theoretical and methodological insights caters for a diversity of empirical knowledge, explaining how:

- social, psychological, economic, and cultural factors predispose individuals to health and illness
- diseases are often a reflection of current theories, diagnostic procedures, trends and resources in medicine, as well as cultural understandings
- the quality and quantity of treatment are not tagged solely to some clear disease profile, and are not consistently amenable to a single set of treatments
- the eventual outcomes of health, illness, and healing are shaped by extra-medical or extra-treatment factors.

Pescosolido’s (2006:193) discussion above justifies the location of the study in the field of sociology of health-care communication. With reference to the first point above, illness is not held in isolation, but is affected by a patient’s social, psychological and economic situation.

The second point above emphasises the social aspect of culture, which needs to be integrated into the South African medical system, since many patients seek traditional/cultural remedies to maintain their health. Even though culture is acknowledged in the literature as being a key aspect of health-care, no single health

communication model incorporates this dimension into diabetes health-care. A patient's culture also contributes to the manner in which illness is accepted and treated or managed. A patient with diabetes is not isolated; instead, this illness affects the patient's social life, family life and financial well-being.

The third point notes that illness affects a person's whole life is. Because diabetes is a complex illness and is incurable, patients need to constantly seek medical care in order to manage it. Illness is not restricted to the medical system, but is judged and maintained by social factors, which include culture and aspects of family support, as emphasised in chapter 4. Clarke (2001:26) emphasises the researcher's above argument:

“a sociologically orientated or social model of illness challenges the biomedical approach to disease by roundly rejecting the notion of mind-body dualism, dismissing the idea that illness can be reduced to disordered bodily functioning and urging health-care professionals to take account of the wider social and cultural milieu in which diseases are diagnosed and treated”.

The conceptual contribution of this study challenges the biomedical treatment system and aims at integrating HCP-patient relationships, emphasising patient-centred care for diabetes management. The model illustrates that both the HCP and the patient should have equal say (about 50% each) in the management of the patient's diabetes. The patient's lived experience of diabetes needs to be taken into account in order to develop treatment patterns to help solve the individual patient's health-care issues.

1.5 FORMULATION OF THE RESEARCH GOAL AND RESEARCH QUESTIONS

In the sections that follow, the research goal and research questions will be set out.

1.5.1 The research goal

Against the background of the rising burden of diabetes, effective management of the disease has become essential to reduce complications and morbidity. Effective

communication is central to this. In this study, a case study research approach was used at Stanger Hospital's diabetes clinic to assess the quality of HCP-patient and HCP-HCP communication dynamics in disease management. A health communication model was developed (from a variety of other models) to explain the health communication process at the research site.

1.5.2 The research questions

The research questions on which this study was based were formulate as follows:

- (1) What seminal health communication models assist in explaining HCP-patient and HCP-HCP interaction and communication dynamics?
- (2) Does interactive health communication between HCPs and patients facilitate or hamper effective understanding of diabetes?
- (3) Does communication either converge or diverge between HCPs and patients in terms of effective understanding of diabetes health-care and treatment adherence?
- (4) What are the possible barriers that may hinder effective communication in HCP-HCP teamwork?

1.6 OPERATIONALISATION OF CONCEPTS

Adhering to the guidelines for a thesis in the Department of Sociology at the University of South Africa, some of the key concepts used in this study are defined in this section. Other concepts and definitions are explained in the text in various chapters. The concepts discussed here provide an introduction to the key terms that were used throughout the study. The definitions provided below are explained in line with the context of the study.

1.6.1 Definition of diabetes and classification of the different types of diabetes mellitus

Diabetes mellitus (DM) is defined as “*a disorder of the metabolism of carbohydrates, proteins, and fats,*” which “*results from alterations in insulin development and use in the body*” (Holtz 2008:273–274). Two main types of diabetes mellitus exist. Type 1 diabetes occurs when the pancreas does not produce any insulin and blood glucose levels thus rise in the body and the body does not obtain its primary energy source. Type 2 diabetes occurs when the pancreas produces low amounts of insulin and blood glucose levels therefore become higher over time, and the body’s primary energy source is decreased owing to the low supply of glucose received by cells (Walker & Rodgers 2010:13–14). Type 2 diabetes is more common than Type 1 diabetes, which usually occurs in juveniles, teenagers and young adults.

Two other types of diabetes occur which are less common, namely maturity onset diabetes of the young (MODY) which is an extremely rare type of diabetes that mostly occurs in people who have genetic deficiency in the insulin-producing cells in the pancreas. This type of diabetes occurs in young adults. Gestational diabetes is a non-permanent type of diabetes that occurs in pregnant women (Walker & Rodgers 2010:16).

1.6.2 Interactive health communication

Communication is a means of interacting with fellow human beings. Northouse and Northouse (1998:2–3) suggest that “*communication is the process of sharing information using a set of common rules*”. Human communication is defined as interactions that occur between people. Communication occurs through the use of language via spoken or written words. As human beings we are able to communicate interactively with each other through the use of language. For the purposes of this study, communication occurs in the medical setting between HCP and patients for diabetes care and treatment adherence. In the medical system, communication enables patients to interact with HCPs and explain symptoms of the illness verbally, which enables the HCP to confirm the diagnosis and explain the management

system for the disease (Marks, Murray, Evans, Willig, Woodall & Sykes 2005:273). Communication contributes to understanding and exploring a diagnosis of illness and its management in the HCP and the patient relationship.

Northouse and Northouse (1998:3) explain that *“health communication is concerned with the application of communication concepts and theories to transactions that occur among individuals on health-related issues”*. For the purposes of this study, health communication is analysed within an interactive context in HCP-HCP and HCP-patient relationships for diabetes care and treatment purposes. In the medical system, health communication occurs between patients and HCPs for diagnosis and treatment purposes. Health communication also occurs between treatment team members (HCP-HCP relationships) to facilitate effective patient care. Communication that occurs in a medical system is defined as health communication.

Interactive health communication is explained as a two-way flow of communication exchange that occurs in the HCP-patient relationship for health-care and treatment purposes (Berry 2007:1–2). The aspect of interactive health communication is expanded on in chapter 4.

1.6.3 Health-care teams

A team refers to a group of individuals who work together collaboratively in order to achieve a common goal. According to Apker (2012:151), *“teams consist of multiple health professions – surgeons, nurses, anaesthesiologists, and others who work together to perform surgical interventions”*. In this study, a team refers to the HCPs who collaborate treatment efforts to provide effective patient care at the diabetes clinic (the inclusion criteria indicated that HCPs need to be based at the clinic for this study – see chapter 6). Teams need to collaboratively work together to ensure that effective health-care is provided to patients. *“Interdependencies are developed as health professionals interact to coordinate work efforts, make decisions, and build relationships”* (Apker 2012:153).

1.6.4 Patient-centred care

Patient-centred care refers to individualised care which caters for the individual's perspective to his or her health-care decisions. The patient is an active participant in the medical-care process and his or her needs and social context are taken into account when being treated (Mead & Bower 2000b:1088, 1089–1190; Grant 2013:3).

1.6.5 Communication dynamics

In relation to this study, different dynamics occur in the medical system which may affect health-care. For example, communication dynamics between HCP and patient and HCP and HCP affect patient dynamics at the diabetes clinic. The health system is made up of different dynamics, which include health-care dynamics, patient dynamics, health-care provider dynamics, systematic dynamics (different systems that control the medical arena) and group dynamics. The field of sociology and health-care posits different health-care dynamics to understand social phenomena. This study encompasses sociological health perspectives to try and understand the social dynamics of diabetes health-care and treatment adherence (Clarke 2001:7).

1.6.6 The social system/context

For the purposes of this study, the social system/social context includes the cultural and familial components or structures that influence the individual patient's health-care context. The social system influences patient care (as reviewed in the literature and chapter 4) – hence if these factors are tolerated or catered for in the medical system, patients can manage their diabetes health-care and treatment adherence with support while adhering to their cultural backgrounds. Patient-centred care emphasises catering for the individual patient while interactive communication allows for a two-way flow of information in the HCP-patient relationship which refers to diabetes health-care for the purposes of this study. If patient-centred care is practised, the social context of the individual can be accommodated and health-care and treatment adherence can be influenced in the medical system.

1.7 CONTRIBUTION OF THE STUDY

This study expands the notion of HCP-patient and HCP-HCP communication dynamics in the management of diabetes as an illness from the data collected at the case study research site, namely Stanger Hospital's diabetes clinic.

As a secondary contribution, a conceptual model was developed from the literature, which explains interactive health communication (in the HCP-patient relationship and HCP-HCP team dynamics) for diabetes health-care in a social system/context that includes both family and culture. The model aims to move away from the conventional biomedical health-care approach to a more patient-centred approach. The model builds on existing literature, which includes current health communication models that elaborate persuasive behaviour change from an intrapersonal and interpersonal context.

Diabetes is considered a silent epidemic that has been underemphasised worldwide. The fact that diabetes is a silent killer that is increasing in diagnosis levels worldwide is explained by Zimmet (1999), Zimmet, Alberti and Shaw (2001:782), Meeto (2008), Dattani and Jiang (2009) and Sekar and Mythreyee (2012). Zimmet (1999:513) explains that our knowledge about the nature of diabetes as an illness is still incomplete. Diabetes affects society and goes *"to the very core of social, cultural, economic and behavioural factors in a society."* However, the prevalence of the illness is increasing in terms of diagnosis levels and is thus becoming a human threat in both the developed and developing world as explained in chapter 2. This study aimed to explain the social dimension of diabetes and research this particular illness, since a gap in knowledge exists with regard to the exposure given to diabetes.

Sociology as a discipline is able to emphasise the social dimensions of diabetes as an illness and further research is required in this regard (Zimmet 1999:499). According to Sekar and Mythreyee (2012:1), HIV/AIDS, tuberculosis (TB) and diabetes are individually the leading causes of deaths worldwide. Diabetes as an illness is not emphasised as much as HIV/AIDS, TB, and cancer, among other

chronic illnesses. However, research has indicated that diabetes is just as deadly as any other leading chronic illness – hence the need for more research in this area.

1.8 LIMITATIONS OF THE STUDY

The qualitative research design is limited in that the findings cannot be generalised with reference to all patients who obtain their diabetes health-care at the clinic. However, the use of a small number of patients made it possible to collect in-depth information from the research participants. Thus, even though the sample and the fieldwork duration were limited, the sample provided adequate data saturation.

The sample had to be limited to patients who could understand English, either as a home or second language for logistical purposes. Patients who participated in this study needed to communicate and understand the questions put to them. The justification for recruiting English-speaking patients only was to enable the researcher to fully understand and interpret the findings for the study first-hand. The researcher did not recruit patients who spoke in their vernacular since she did not want to involve the usage of interpreters or translators who might have hampered the meaning of the data. However, this limitation was covered with regard to the two types of sampling techniques used in the study, namely convenience and purposive sampling.

Owing the fact that recruitment of participants for the study turned out to be a difficult task for the researcher to do alone, purposive and convenience sampling techniques were adhered to. Patients always seemed to be in a hurry to leave the clinic and attend to their lives. Also, they did not want to miss their turn to meet the medical doctor and thus avoided the interview. The public health-care system is characterised by long queues, a lack of facilities and limited staff, as discussed in chapter 2. The researcher could understand why the patients avoided her call to participate in the study.

1.9 CHAPTER DEMARCATION

The different chapters in this study are outlined in this section.

Chapter 1 introduced the research issue and placed the study in context.

Chapter 2 provides a detailed explanation of diabetes diagnosis rates from the global, local and African context. The epidemiology of diabetes is also explained in detail in this chapter. The impact of the apartheid system on public health-care in South Africa is explained with reference to policy documents. The context relating to the biomedical and biopsychosocial perspectives is described in order to contextualise current public health-care systems of care in South Africa.

Chapters 3 and 4 provide a detailed discussion on current health communication models (relating to cognitive, behaviour change communication) in relation to the intrapersonal and interpersonal contexts of health communication. Different models and theories are reviewed and critiqued in these chapters illustrating possible gaps in them while acknowledging current debates on the need for the social context to health-care for diabetes.

Chapter 5 introduces the conceptual framework developed as a contribution for this study which was synthesised from the literature and emphasises the social system/context that should be integrated into HCP-patient relationships for treating and managing diabetes as an illness.

Chapter 6 explains the selected methodology for the study. A qualitative case study research design adhering to Yin's (2014) protocol was adapted together with Stake (2000), Punch (1998), Tesch (1990), Patton (1999) and Morse, Barrett, Mayan, Oslon and Spiers (2002) for case study research, data analysis and data interpretation, methods of triangulation and the aspects of reliability and validity were used to justify the selected approach and its application to the single case study research conducted.

Chapters 7 and 8 deal with the patient and HCP data individually and thereafter triangulate the data by indicating how communication either converged or diverged from the HCPs' and patients' perspectives. A thematic analysis was used to sort and analyse the data collected adhering to Tesch's protocol (1990 in Poggenpoel 1998:343–344).

Chapter 9 concludes the study and explains how the research objectives of the study were achieved.

1.10 CONCLUSION

This study focused on understanding communication dynamics as it occurs in the selected case study for diabetic health-care in a South African context.

This chapter explained the context and need for such research by explaining the importance of interactive health communication within HCP-patient relationships for diabetes health-care. HCP-HCP teamwork is also required for adequate patient care for an illness such as diabetes. Patient-centred care is a requirement for this illness since individuals need to be treated in order to ensure that treatment adherence is maintained. Hence a need exists to incorporate the patient's perspective into health-care in relation to interactive health communication in the public health-care system.

Chapter 2 provides the context for the research conducted by explaining the epidemiology of diabetes and diabetes diagnosis levels locally and internationally, and the need to research this illness. The background to the South African medical system is provided in order to explain how public health-care operates in South Africa because of the past political system which affects current care.

CHAPTER 2

CONTEXTUALISATION OF THE SOUTH AFRICAN PUBLIC HEALTH-CARE SYSTEM AND THE EPIDEMIOLOGY OF DIABETES IN SOUTH AFRICA

The World Health Organization's (WHO 2011:1) key indicators on diabetes show that:

- 346 million people have been diagnosed as diabetic worldwide
- in 2004, an estimated 3.4 million people died as a consequence of high blood sugar levels
- more than 80% of diabetes deaths occur in low and middle-income countries
- deaths due to diabetes-related complications will double between 2005 and 2030.

2.1 INTRODUCTION

The aim of this chapter is to place diabetes in South Africa in context. An epidemiological overview will be provided detailing diabetes, the different types of diabetes, symptoms of diabetes, risk factors for diabetes and the effects of diabetes on the human body. Diabetes rates are on the increase in Africa, sub-Saharan Africa and South Africa. The two approaches to health-care, namely the biomedical and the biopsychosocial are discussed in order to contextualise current public health-care practice. Background information is provided on the South African public health-care system explaining how the injustices of the past governmental systems impacted on current public health-care services in the country. Urbanisation has greatly contributed to the epidemiology of diabetes in South Africa. A discussion is formulated to explain how rapid urbanisation and change in diet are contributing factors to an increase in diabetes rates in South Africa. Non-communicable diseases

such as diabetes are a rising concern for the country's future, since they contribute greatly to mortality rates in South Africa.

2.2 DIABETES AS AN ILLNESS: WHAT EXACTLY IS DIABETES?

Diabetes is a condition in which the pancreatic organ does not produce enough of the hormone insulin, or a human body resists the action of insulin. The body then cannot obtain enough energy from the usual source when a person's blood glucose levels rise. The human body responds by trying to find alternative sources of energy. The body also needs to get rid of the excess glucose in the system. Fat and protein are alternate sources of energy for the body, and this is usually when diabetes becomes a diagnosis. The hormones, insulin and glucagon, which control blood sugar levels are produced by the pancreas. In the case of a diabetic person, because of the lack of insulin production, glucose cannot be absorbed by the cells and be transformed into energy. This in turn leads to extremely high glucose levels in the blood. In a diabetic person, these abnormally high blood glucose levels cause harm to the body over a period of time (Walker & Rodgers 2010:10–12).

2.3 DIFFERENT TYPES OF DIABETES

Type 2 diabetes mellitus is more common in all age groups. Table 2.1 (below) shows the difference between Type 1 and Type 2 diabetes. Type 1 diabetes is classified as a disease in which the body's own immune system destroys the pancreas. Type 1 diabetes is easily diagnosed because of the life-threatening symptoms it displays. This type of diabetes is dangerous for a patient, since the body is able to poison itself with ketones, and prolonged lack of insulin can cause organ failure. In Type 1 diabetes, because the body cannot produce insulin, the cells are starved and the body resorts to burning its own fat and eventually protein for energy. Ketones are produced by the breakdown of fats that cause fatty acids and these can poison the body and cause harmful effects to the individual. The body is unable to get rid of the high levels of sugar produced, which are life threatening for the individual. The body creates its own mechanisms to try and fight this disease, but is unable to do so and ends up destroying itself. Organ failure can occur because of dehydration in the

body. Thus insulin injections are vital with Type 1 diabetes to ensure that the patient is able to live a long and healthy life (Mertig 2007:6).

Type 2 diabetes develops from “cellular insulin resistance” (Mertig 2007:6). The pancreas produces lower amounts of insulin or the cells of the body are resistant towards the action of insulin. Obesity is a leading cause of Type 2 diabetes and this type of diabetes is not diagnosed early as in the case of Type 1 diabetes. Type 2 diabetes can be less life threatening compared to Type 1, since the body still produces some insulin and cannot therefore poison itself as in the case of Type 1 diabetes. However, Type 2 diabetes is just as harmful to the individual, because even though the body cannot poison itself, this type of diabetes is rarely diagnosed early enough and can cause harmful effects on organs in the long term. Type-2 diabetes usually occurs in the later stage of a person’s lifespan owing to incorrect diet and Western lifestyles that have triggered large numbers of cases of obesity worldwide. Type 2 diabetes is more common and occurs in more people, compared to Type 1 diabetes. Type 2 diabetes is also genetically inherited and is thus more common in certain ethnic groups. Treatment for this type of diabetes constantly changes, since lifestyle changes need to occur for some time before improvements in health take place (Walker & Rodgers 2010:14–15).

Maturity onset diabetes of the young is an uncommon type of diabetes. It usually affects teens or people in their twenties, and is similar to Type 2 diabetes but is caused by genes that affect the cells producing insulin in the pancreas. This type of diabetes can be diagnosed with genetic testing. Treatment for MODY is similar to that for Type 2 diabetes (Walker & Rodgers 2010:16). Gestational diabetes is a temporary type of diabetes that develops in pregnant women, usually around the sixth month of pregnancy. It is usually caused by hormonal imbalances caused during pregnancy and may cause Type 2 diabetes in the mother, in a later stage of her life (Walker & Rodgers 2010:17, 144).

Table 2.1: Differences between Type 1 and Type 2 diabetes

COMPARING TYPE 1 AND TYPE 2 DIABETES	
<p>Although they share some of the same symptoms, Type 1 and Type 2 diabetes are really separate conditions, and there are separate causes and treatments for each.</p>	
TYPE 1 DIABETES	TYPE 2 DIABETES
Usually starts in childhood or early adulthood; rarely develops after age 40.	Usually starts in adulthood, often after age 40 but increasingly common at a younger age.
The body doesn't produce insulin because the insulin-producing beta cells in the pancreas have been destroyed.	The body produces insulin but it is resistant to its action. Over time, insulin production progressively declines.
People affected are usually underweight or normal weight.	People affected are usually overweight.
People affected need insulin treatment, as well as care with eating and physical activity.	People affected need care with healthy eating, physical activity, and tablet and insulin treatment.
Passing large amounts of urine, excessive thirst, weight loss, and fatigue can come on quickly and be severe.	Passing large amounts of urine, excessive thirst, weight loss, fatigue, and blurred vision may be gradual, mild or absent.
Diagnosis is usually rapid – within days or weeks of symptoms developing.	Diabetes may not be diagnosed for several years.
Children of people with Type 1 diabetes have a 1–6 per cent chance of developing Type 1 diabetes.	Children of people with Type 2 diabetes have a 14 per cent chance of developing Type 2 diabetes.
Cannot be prevented.	Risk reduced by weight control and regular physical activity.

(Source: Walker & Rodgers 2010:15)

2.4 SYMPTOMS OF DIABETES

Bloom (1978:25–27) explains different conditions that the human body can experience to illustrate the symptoms of diabetes.

Thirst: Generally thirst can be judged as a normal condition in most people; during hot weather, people consume more water because they are thirsty. However, thirst is

a symptom of diabetes that many people usually turn a blind eye to; diabetic thirst can disrupt sleeping patterns, and also cause a person to consume large amounts of water during the day. A diabetic person must avoid drinking liquids high in glucose/sugar, since this will worsen his or her condition as glucose levels will be increased to higher levels in the body.

Polyuria: This refers to passing urine on an extremely frequent basis; the bladder needs to secrete the excess amount of sugar from the body in the form of urine. Diabetic patients usually pass urine extremely frequently in large amounts. This is a vital sign of diabetes; patients can monitor their urine secretion and judge the abnormality of such frequent urine passing.

Loss of weight: Diabetic patients usually lose weight excessively. According to Bloom (1978:26–27), obesity is a leading cause of diabetes, yet the illness diabetes ensures that weight is lost at a rapid rate. For diabetic patients, the loss of weight is seen in a negative light since they actually lose muscle in the form of sugar. This is not a good sign for a diabetic patient.

Loss of energy: Many people tend to feel tired on a regular basis and thus do not see tiredness as a symptom of diabetes, but rather as a normal human condition. Diabetes tiredness usually refers to extreme exhaustion where a person can no longer perform the usual basic tasks of everyday life. In newly diagnosed patients, eyesight can become blurred owing to excess sugar available in the fluid of the eye. Sexual interest can be lessened because of diabetes, and tingling sensations in the feet and the fingers resulting from excess sugar are also a symptom or sign of diabetes.

2.5 TREATMENT FOR DIABETES

Patients diagnosed with diabetes need to treat their condition with diet management. Correct diet ensures that blood glucose levels are on a par in adults as well as children. Eating healthily can contain diabetes for effective living. Insulin enables hydraulic action to occur in the human body, but cannot be consumed orally. Mertig (2007:46) explains that research conducted by scientists for the development of inhaled insulin could become a reality since modern technology now allows for this

development to occur after many years of research: “nasal insulin, oral insulin, buccal administrated gels, and insulin patches, as well as inhaled insulin can be developed in the near future” (Mertig 2007:46). Another form of oral medication, namely tablets, is prescribed for Type 2 diabetic patients when dietary treatment alone fails. Exercise is another form of treatment for diabetes control. Exercise is a preventive measure for obesity as well as maintaining healthy living (Mertig 2007:11, 21, 27, 34)

2.6 DIABETES: RISK FACTORS

Johns Hopkins Medicine (2011a:6–11) cites the risk factors for diabetes diagnosis as follows:

2.6.1 Type 1 diabetes

- **Viral infection:** Research has indicated that viral infection may cause Type 1 diabetes and could develop during childhood, adulthood or during pregnancy. The virus affects the child’s immune system, which creates antibodies which, in turn, destroy beta cells, and Type 1 diabetes thus develops.
- **Heredity:** Type 1 diabetes is hereditary and will occur if even one family member was diagnosed with this type of diabetes.

2.6.2 Type 2 diabetes

- **Heredity.** Family history of type 2 diabetes increases a person’s risk for developing the disease.
- **Genes.** Genetic modification is a contributing factor to a person’s susceptibility to developing diabetes.
- **Race and ethnicity.** This is a major contributor to diabetes risk and races more at risk of developing diabetes include blacks, Hispanics, Asians and Native Americans, while whites are less susceptible to developing the disease. In Africa specifically, African communities are at a higher risk of developing diabetes. In South Africa, both black and Indian populations are more at risk of

becoming diabetic compared to whites (Sobngwi, Mauvais-Jarvis, Vexiau, Mbanya & Gautier 2001:629).

- **Obesity.** Being overweight is a major factor in developing diabetes and most diabetic patients are overweight.
- **Location of excess fat.** Excess weight found around the abdominal area increases a person's risk of developing diabetes, as compared to weight found in excess in other parts of the body.
- **Metabolic syndrome.** Abdominal obesity leads to insulin resistance and various different forms of abnormalities further develop, which are referred to as metabolic syndrome, which create a risk for developing diabetes.
- **Pre-diabetes.** Blood readings indicate whether a person is pre-diabetic. This is a risk because people who are pre-diabetic usually develop type 2 diabetes in 10 years if lifestyle changes do not occur.
- **Physical inactivity.** Being inactive is a leading sign of diabetes; excess glucose levels build up in the bloodstream because of inactivity, and this leads to the development of diabetes.
- **Ageing.** Elderly people are more at a risk of developing diabetes because they are usually more inactive, eat incorrectly and can easily become overweight.
- **Pregnancy.** Gestational diabetes may develop in pregnant women, but is usually a temporary type of diabetes. However, women that develop this type of diabetes need to alter their lifestyle to protect themselves from becoming diabetic later in their life.
- **Other health problems.** Pancreatic conditions that destroy the pancreas can lead to the development of diabetes.
- **Medications.** Some medication that is used to treat certain other health conditions can lead to the development of diabetes.

2.7 HISTORICAL BACKGROUND TO DIABETES

2.7.1 Diagnostic rates of diabetes: the developed and developing worlds

This study did not aim to draw conclusions about the trends in diabetic patterns with regard to the magnitude of the illness or the disease's epidemiology. Instead, the focus was on addressing this silent epidemic in relation to the South African public health-care system with specific focus on communication dynamics for HCP-patient relationships. Diabetes mellitus (DM) incidence rates are increasing globally due to changing eating habits and high rates of obesity. This is visible in the United States of America (USA), where incidence rates increased from 7,5 million individuals with DM in 1987, to over 11 million cases in 2025 (Boyle, Honeycutt, Naryan, Hoerger, Geiss, Chen & Thompson 2001:1936). Some of the global estimates for diabetes rates are shown in figure 2.1 below. The figure illustrates the number of people living with diabetes throughout the world. The values indicated in the first block indicate the number (in millions) of people diagnosed as diabetic in the year 2000. The figures represented in the centre blocks indicate the number of people living with diabetes in the year 2010. In 2010, 221 million people had been diagnosed as diabetic, this in comparison to the year 2000 when 151 million people had been diagnosed as diabetic worldwide. The third block presented over each continent indicates the percentage increase in diabetic levels between the year 2000 and 2010, a total percentage increase of 46% occurred in people that had been diagnosed as diabetic worldwide. These statistics indicate how the illness is rising in diagnostic levels throughout the world (Amos, McCarthy & Zimmet 1997 in Zimmet et al 2001:783). Research indicates that globally, the number of people with diabetes will rise *“from the estimate of 150 million to 220 million in 2020, and 300 million in 2025”* (Amos et al 1997 in Zimmet et al 2001:783).

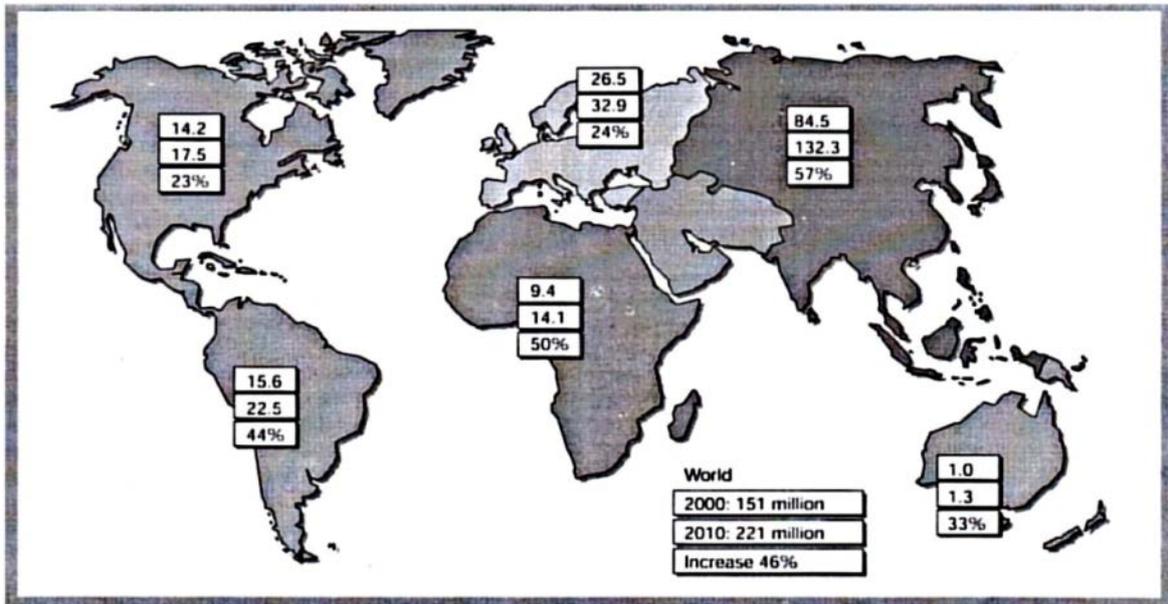


Figure 2.1: Global implications of DM: disease rates in millions for 2000 and 2010

(Source: Amos et al 1997 in Zimmet et al 2001:782)

2.7.2 The developed versus the developing world: diabetes rates according to age vulnerability

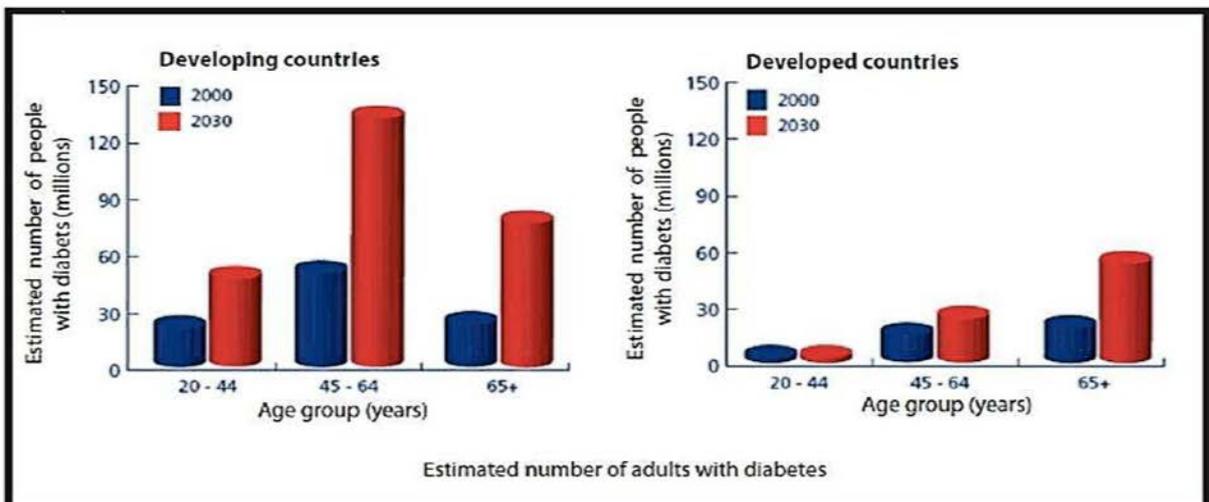


Figure 2.2 Diabetes rates in the developing and developed world according to age vulnerability

(Source: Bardsley & Resnick 2008:312)

Figure 2.2 above represent the estimated number of people living with diabetes in developing and developed countries, respectively, according to different age groups. The above figures indicate the increase in the number of diabetic diagnoses, as they occurred between the year 2000 and the projected increase by the year 2030. Figure

2.2 shows diabetes rates in the developing world and indicates that rates will increase drastically in 2030 in the age category 45 to 64 years, while the 65+ age group will have higher levels of diabetes diagnosis compared with the 20 to 44 age group. In comparison, the developed world, diabetes diagnoses between 2000 and 2030 will increase considerably with age progression. Older people will become more prone to diabetes with age maturity. A projection of diabetes diagnoses for the year 2030 shows that it will increase within the 45 to 64 age category as well as the 65+ age group. The 65+ age group displays a considerable increase in diabetes diagnoses compared to the younger 20 to 44 age group category. These figures indicate how the epidemic is drastically increasing worldwide. The age of onset for diabetes is more towards the middle to older age groups in developing countries, as opposed to developed countries, which display an increase in diabetes rates among the older age groups. The workforce age groups (20–44 and 45–65) are affected by diabetes in developing countries, while the aged and retired (65+) are affected by diabetes in the developed world. Thus economically, the developing world will suffer more compared to the developed world, since poverty will prevail with illness among the workforces of these countries.

2.7.3 Diabetes diagnosis levels worldwide

The map below (Figure 2.3) explains the number of people living with diabetes in different regions of the world. It also indicates how diabetes diagnosis rates will increase between the years 2000 and 2030. The top ten countries according to the number of diabetic diagnoses are India, China, the USA, Indonesia, Japan, Pakistan, Russia, Brazil, Italy and Bangladesh, as indicated in the map below. According to the map, the Americas, Africa, Europe, the Middle East, Asia and Australia will have significant increases in the number of people living with diabetes from the year 2000 to the year 2030.

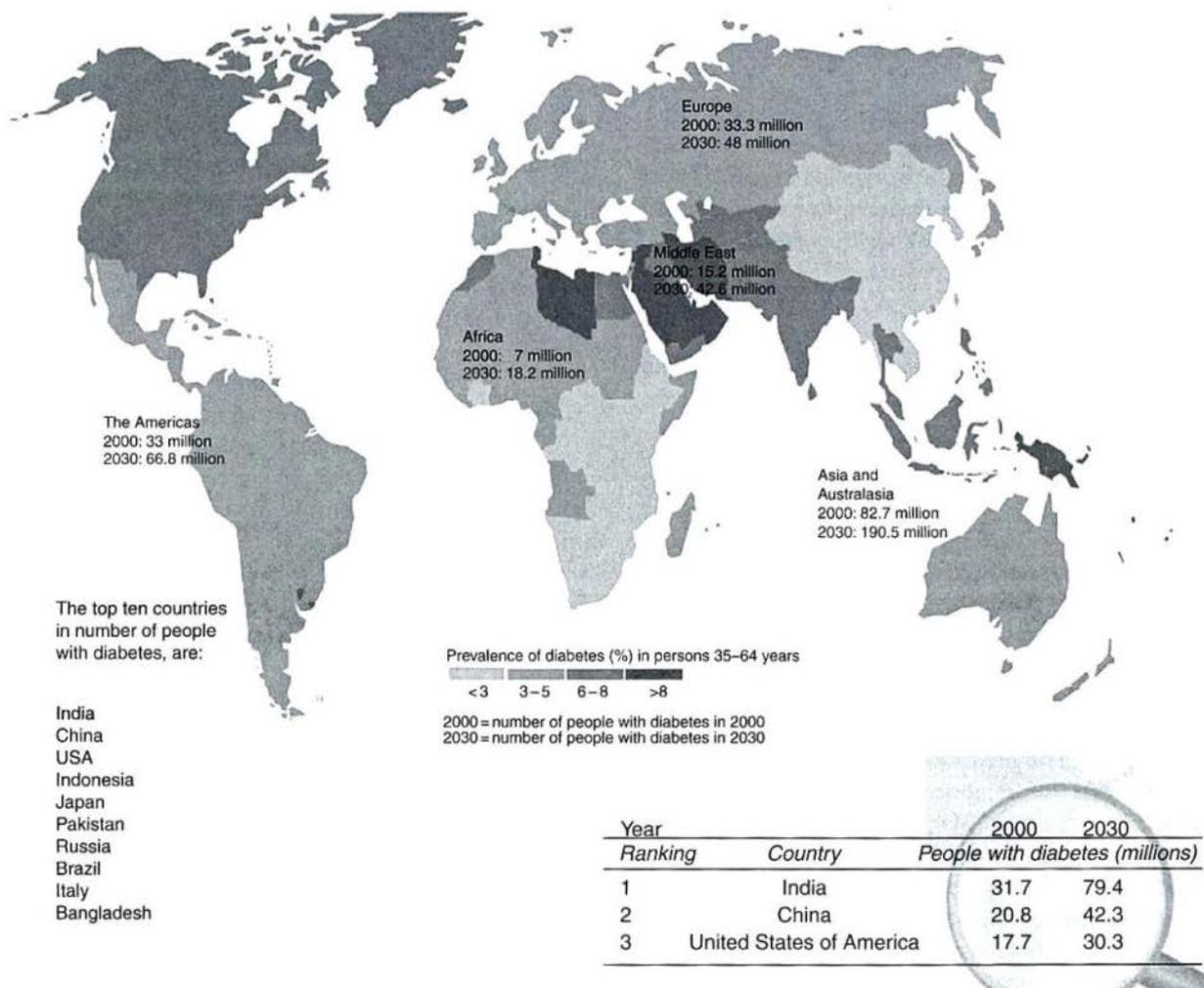


Figure 2.3 Diabetes diagnosis levels worldwide

(Source: Bardsley & Resnick 2008:312)

2.7.4 Contributing factors to the increase in diabetes diagnoses worldwide

Bardsley and Resnick (2008:308) explain how different societal changes are the leading causes for an increase in the number of diabetic diagnoses worldwide. These changes include inactivity, technology, and changes in diet. Society has become inactive with the onset of economic development in developed countries. Many people spend less time outdoors and tend to replace walking with the use of cars. Technology has helped the world become lazier. Children watch television at home and are exposed to the ideological belief of modern living where junk food is advertised commercially. Children play more video games and watch television, which are both contributing factors towards obesity in children. Cellular telephones, tablets and laptops have all contributed to society becoming lazier, since

convenience has contributed to less activity and also less exercise. Developing countries are following Western diets and are thus avoiding healthy foods with nutritional value, by consuming fatty fast foods. This leads to obesity and thus increases the risk of developing diabetes. According to Kruger, Venter, Vorster, Hester and Margetts (2002:427), contributing factors to increased levels of obesity in South Africa are economic stability, lack of exercise, age, gender and urbanisation.

2.7.5 Background to diabetes in Africa, sub-Saharan Africa, South Africa and KwaZulu-Natal (KZN)

According to the International Diabetes Federation (IDF) in Africa, age seems to be a risk factor for DM, as risk increases with age. Mbanya, Motala, Sobngwi, Assah and Enoru (2010:2258) add that *“as the diabetes epidemic matures, the age at onset will shift to younger age-groups and early-onset type 2 diabetes will emerge”*. Diabetes risk factors include urbanisation, age, family history of diabetes and obesity (Motala 2002:14). Urbanisation and its contribution to an increase in the levels of diabetes diagnosis are discussed in subsection 2.10 below. The impact of urbanisation as a key contributor to diabetes is visible in sub-Saharan Africa, where diabetes incidence rates are increasing as a result of the shift from rural to urban areas (Mbanya et al 2010:2258). Lifestyle changes are occurring and diet is thus negatively impacted, since people who live in cities are less active and exercise less, resulting in obesity and an increase in the risk of becoming diabetic (Bardsley & Resnick 2008:307). Obesity is a key contributor to diabetes worldwide, and an estimated 22 million children under the age of five are overweight. According to Bardsley and Resnick (2008:307) *“a close relation exists between rates of type 2 diabetes in adults and the appearance of the disorder in adolescents”*. As age increases in diabetic children, they develop diabetic complications similar to those complications that occur in adults who are diagnosed as diabetic. Age is a key contributor to diabetes risk in developing countries.

Motala (2002:18) argues that the epidemiology of diabetes as an illness, and the history and clinical course of the disease, are not adequately understood in Africa. This explains the need for information on diabetes in the developing world. Interactive communication between HCP and patient can adequately facilitate the

transfer of information during diabetic treatment sessions. Beran and Yudkin (2006:1692) assert that patients need to be empowered in the medical system. They need to educate and inform themselves with regard to diabetes as an illness by accessing material resources. Patients need to be motivated to maintain their health, and this motivation should come from educational resources as well as from the HCP. Beran and Yudin (2006:1692) indicate that material developed for providing diabetic education in the sub-Saharan region needs to be culturally appropriate and communicated in simple language to facilitate understanding. If diabetic patients are empowered with information on their illness, HCP-patient sessions can be more interactive and the individual patient can be catered for in the medical system.

Poverty is rife in African countries and thus treatment availability is limited. Beran and Yudkin (2006:1698) add in this regard that *“the increasing numbers of people with type 2 diabetes is a worldwide concern. It presents an added challenge in sub-Saharan Africa, where diabetes must compete for resources with communicable diseases.”*

Increased incidence rates of DM have been recorded in both the developed and the developing world. Mbanya et al (2010:2254) assert that *“the projected growth for sub-Saharan Africa is 98% from 12.1 million in 2010 to 23.9 million in 2030”*. A major concern lies with the fact that most people who are diabetic are not aware of their condition. Mbanya et al (2010:2254) support this concern by stating the following:

“The rate of under-diagnosed diabetes is high in most countries of sub-Saharan Africa, and individuals who are unaware they have this disorder are at a very high risk of chronic complications. Therefore, the rate of diabetes-related morbidity and mortality in this region could grow substantially.”

The historical past of South Africa's public health-care system has negatively contributed to public health-care facilities currently available. Inequality persists in the health-care environment. Diabetes is further adding to the strain of chronic illness in African regions. According to Walker (1995:1055), *“in African populations as a whole, broadly the socioeconomic state and the outlook are formidable. Impoverishment hinders the efforts to combat both the diseases of nutritional deficiency and imbalance.”*

Mbanya et al (2010:2254) indicate that Type 2 diabetes is growing rapidly in sub-Saharan Africa because of many emerging factors such as changes in diet due to urbanisation, socioeconomic conditions such as poverty, as well as changes in lifestyle which are contributing to high levels of obesity. Diabetes education that caters for social as well as cultural differences needs to be provided in sub-Saharan Africa. Genetic modification is a key contributor to diabetes, especially among African people. Another hazard with regard to diabetes in this region is related to late diagnosis: many people are diabetic but are unaware of their medical condition. Hence the illness advances and patients' conditions worsen before they are actually treated for diabetes. Medical systems in sub-Saharan Africa are not fully developed and medical under-expenditure further contributes to the burden of diabetes. Medical treatment and fully fledged medical services are a major concern in these countries. Research conducted on the topic emphasises that culture needs to be catered for when educating people in these countries about diabetes. Because certain social and cultural beliefs are a leading cause of diabetes, educational messages or campaigns need to be culturally sensitive in order for education to be effective. The notion of obesity is seen in a positive light, since it displays that people are eating well and are thus not economically disadvantaged, as opposed to being thin. This cultural notion need to be altered in order to combat obesity and reduce and manage the occurrence of diabetes (Mbanya et al 2010:2262).

Renzaho, Mellor, Boulton and Swinburn (2009:448) found that immigrants prefer health messages about possible risks of lifestyle diseases to be in their own language. Campaign messages which included cultural beliefs in the actual campaign contributed positively to an effective understanding of health messages in the above-mentioned study. The study indicated that social factors need to be integrated into the public health-care system in order for education on diabetes to be interpreted correctly. Culture is a core aspect of health and wellness and thus needs to be catered for in a public health-care system for treatment effectiveness.

Hall, Thomsen, Henriksen and Lohse (2011:1) reiterate the point above that diabetes is increasing in diagnosis all over the world, including sub-Saharan Africa. This disease is increasing mortality rates worldwide. The above-mentioned research emphasises the fact that diabetes is contributing negatively to the public health-care system in sub-Saharan Africa. Undiagnosed as well as untreated diabetes is a

leading cause of mortality in these countries. Type 2 diabetes is found more commonly in sub-Saharan Africa compared to Type 1 diabetes, although more research needs to be conducted to track the rates of Type 1 diabetes (Hall et al 2011). On a financial level, diabetes has a negative impact on the public health-care system worldwide. According to Gibson, Song, Alemuyehu, Wang, Waddell, Bouchard and Forma (2010:589), in America the rate of diabetes is increasing rapidly; in 2010, an estimated 23.6 million people in the USA had been diagnosed as diabetic. Lack of patient management and adherence to medication regimes has impacted negatively on medical treatment costs. Data from the study indicated that patients did not adhere to their regimes for various reasons, the high costs of medication being one. Barriers to treatment adherence need to be researched in order to reduce expenditure.

Limited funding for diabetes medication in sub-Saharan Africa is a barrier to the availability of medication in public health-care facilities. Research by Hall et al (2011:9) explains that in some countries in this region, patients are funding their own medical treatment expenses owing to limited funding available in the public health-care system. Diabetic treatment expenditure is allocated at a certain amount per individual. Many diabetic individuals diagnosed in African countries also suffer from the burden of HIV – thus expenditure comes in more than one form for treatment purposes for these illnesses. Also, because many diabetics form part of the prime working age group, family members need to assist financially and also counter the loss of an individual income from the diabetic patient. Hall et al (2011:9) state the following:

“At a national level an increasing prevalence of diabetes among the economically active, and the high prevalence of diabetic complications and low survival rates, will negatively impact economic development, and in turn the health budget.”

A study conducted by Beran, Matos and Yudkin (2010:856) indicates that sub-Saharan Africa is negatively affected by diabetes since the rates of this illness continue to rise because of poor health services, insufficient amounts of insulin and untrained HCPs. Research conducted in Mozambique indicated that knowledge and education on diabetes must be provided to patients, more insulin was required for patient treatment and more trained medical staff were required who knew how to test

for diabetes. Not all hospitals in Mozambique could treat diabetes in 2003. The Diabetes UK twinning programme funded diabetes awareness as well as treatment costs in Mozambique, and research was conducted between 2003 and 2009 to monitor the improvement of the Diabetes UK twinning programme in improving diabetes education as well as treatment services in Mozambique. In 2003, Mozambique promulgated a law which ensured that chronic medication was discounted by 80%. However, this discounted level was not always implemented by all. The study noted that in 2003, the availability of insulin was extremely low as compared to 2009, when insulin was more readily available at most hospitals. HCPs were trained for diabetes care by attending courses funded by Diabetics UK and the World Diabetes Foundation (WDF). Adherence issues in 2003 were affected by problems relating to access to medication, knowledge about diabetes and continuation of treatment and care. However, in 2009, adherence issues were related to diet concerns and correct eating. The use of traditional medication was also a barrier to treatment adherence since patients used traditional medication as opposed to diabetic treatment when they felt unwell. The question of culture is reiterated as a factor that needs to be taken into consideration for a Southern African health-care system, since culture can affect treatment adherence for diabetes.

A study conducted by Van de Sande et al (1999:506) indicates that rates of diabetes will increase considerably in sub-Saharan Africa because of increased urbanisation as well as Westernisation. A study conducted in Gambia indicated that glycosuria testing was an effective way to test for diabetes in that country. The study emphasised that this method of testing should be used to detect undiagnosed diabetes, especially in high-risk groups, which include *“obese, hypertensive, or elderly people”*. The study indicates that diabetes should be diagnosed early to avoid long-term complications, thus emphasising glycosuria as an effective testing method which should be used in that region. To curb the burden of non-communicable diseases, cost-effective testing measures need to be implemented in these regions to ensure that reliable diagnoses are produced and treatment can begin effectively to reduce harmful effects later on.

Research has indicated that diabetes is on the increase in South Africa with obesity being a leading cause. In 2008, 68% of the South African population aged 20 years and older was regarded as being overweight (Young & Pemba 2012). In addition,

Young and Pemba (2012:42) suggest that South Africa still has a lot to learn about diabetes as an illness and its treatment options. Overnutrition among females is negatively contributing to an increase in diabetes levels in South Africa. According to Puoane et al (2002:1044), the African culture is supportive of obesity in women. African belief poses certain cultural and traditional notions relating to weight and body mass in women. Being overweight is culturally correct for African women, and this needs to be addressed in health-care systems. HCPs need to become aware of these cultural beliefs so that they can communicate with patients in a culturally sensitive manner. The African belief dictates that *“obesity or [being] overweight in women is thought to reflect on a husband’s ability to care for his wife and family”* (Puoane et al 2002:1044). These are social considerations that need to be communicated between the HCP and the patient in a medical context, in order for cultural tolerance to increase in the health-care and treatment system. Puoane et al (2002:1046) concur with the researcher’s point above and suggest *“that attention be directed toward interventions, which are culturally sensitive for particular target groups”*. HCPs need to treat the individual diabetic patient so that social and cultural factors are catered for during interactive treatment sessions. The question of patient-centred care will be discussed in chapter 4.

In South Africa, research has indicated that family history of diabetes makes black South Africans more prone to becoming diabetic. The genetic factor is stronger from the maternal side of the family (Erasmus, Blanco, Okesina, Arana, Gqweta & Matsha, 2001:232). As discussed above, diabetes is a hereditary illness. Patients who have diabetic family members are more prone to the illness. In South Africa, the black and Indian ethnic groups are more susceptible to developing diabetes, as compared to the white ethnic group. Race and age are discussed in this study to emphasise how these factors affect the incidence of the illness. The World Health Organization (WHO) (2014) projects that diabetes will be the seventh leading cause of death in 2030. In 2012 an estimated 1.5 million deaths were caused by diabetes.

According to Naidoo (2013:134–135), in South Africa, illnesses such as diabetes need to be adequately treated in order for morbidity and mortality rates to decrease. This needs to be addressed at a primary health-care level. Obstacles to treatment uptake and compliance such as cultural, economic, social, environmental, political,

educational and health management issues affect diabetes health-care in South Africa.

Even though the focus of the study was not on the statistical rates of the epidemiology of diabetes in South Africa or KZN specifically, South Africa was discussed above and KZN and Stanger will be touched on below. The specific illness was selected as something that receives less attention than diseases such as HIV/AIDS or tuberculosis.

The available research conducted in KZN does not focus on eliciting epidemiological data on diabetes, but instead on compliance issues and the gender effects of diabetes (Wand & Ramjee 2013:1; Cort, Gwebu, Tull, Cox & Modise 2013; Case & Menendez 2009). There is thus a clear need for research to be conducted in public health-care sectors on diabetes and diabetic patient care (Igbojiaku, Harbor & Ross 2013:1).

Research conducted by Motala, Esterhuizen, Gouws, Pirie and Omar (2008:1783) in relation to diabetes and other glycaemic disorders in a rural South African community in KZN, indicated a moderate prevalence of diabetes in the rural Ubombo district, while there was a high prevalence of total disorders of glycaemia. Their study also noted that KZN is the most densely populated province in comparison with other provinces in the country. Research has indicated that South Africa is facing *multiple-disease burden* and diabetes is a major contributor: “[I]t is estimated that the number of people with diabetes would rise between 2000 and 2010 despite the HIV/AIDS epidemic, largely because of the aging of the population and the increase in risk factors for diabetes in South Africa.” (Motala et al, 2008: 1783). This *health transition* is impacting negatively on South Africa, especially in rural communities, owing to financial impoverishment. Diabetes is expected to increase by 42% over the next 10 years (Levitt, Steyn, Dave & Bradshaw 2011:169). A point to note is that because South Africa is a low-resource setting, health-care delivery for multiple disease burden impacts negatively on the country. Health-care facilities do not have sufficient resources to treat a magnitude of illnesses.

There are no research findings on diabetes for the Stanger area specifically. The only information known is that the clinic treats many diabetic patients at the hospital. An average of between 40 and 60 patients are seen on a Tuesday when the medical

doctor is available at the clinic. On any other day of the week, nurses treat an average of 20 to 30 patients per day in the absence of the medical doctor. Stanger also has many surrounding clinics where patients are treated. According to the ILembe district municipality acting manager, no research on diabetes has been conducted in this district area or the Stanger area specifically (Ndaba 2014).

2.8 TWO PERSPECTIVES ON HEALTH-CARE: BIOMEDICAL VERSUS THE BIOPSYCHOSOCIAL

The two approaches to health-care, namely the biomedical and biopsychosocial models, are discussed below in order to contextualise the South African public health-care system.

2.8.1 The current biomedical approach to public health-care in South Africa

The South African medical system is dominated by the biomedical health-care service approach to diagnosing and treating illness. Because South Africa is an economically challenged country, resources are limited. Public health-care receives limited funding from the government and thus optimal health-care service delivery is a challenge in this country. According to Petersen (2000:321), in South Africa, *“the delivery of biomedical care is sustained by a number of factors within the primary health-care system as well as within the macro-context. A shift in the paradigm of care provided would therefore require the transformation of the system on many fronts.”* Even though new policies exist in South Africa (which are discussed in section 2.9 below) and are aimed at moving away from the biomedical perspective, the country still has a long way to go before this can be achieved. The inequalities of the past affect and impact on the quality for health-care and service delivery even today.

The biomedical model encompasses the following assumptions as explained by Freund and McGuire (1991:226) and Engel (2013:90):

- **Mind-body dualism.** Illness occurs within the body and is separate from the mind (mental is separated from the somatic), meaning that illness is internal

and cannot occur because of the individual's behaviour. A person's body can be ill in this case since illness has no link to the mind of the individual.

- **Physical reductionism.** Illness is reduced to biochemical and neurophysiological functions only. Illness is not linked to social, psychological and behavioural dimensions in human beings. Disease is independent of social behaviour.
- **Specific etiology.** A disease is caused by an agent that is specific and can be identified by the HCP.
- **The machine metaphor.** The human body is compared to a machine which can be repaired by the physician or HCP. If an individual experiences pain in a certain organ, that part can be repaired in isolation from the rest of the body.
- **Regimen.** Individuals are responsible for maintaining their own health-care. The control of body discipline lies with the person.

This model is critiqued for its purely scientific discourse. It fails to take into account the whole person (patient). The patient is the actual person living with the illness and is therefore affected by the social and cultural context. The model focuses on a one-way flow of information from the superior medical expert to the patient. The patient is subservient in the medical-care system and has no voice. Biomedicine focuses on diagnosing and treating illness. This approach to health-care is not overtly patient-centred because it regards the HCP as holding the most important position in diagnosing and providing health-care without interference from the patient (Wade & Halligan 2004:1398).

According to Engel (2013:89), the biomedical model excludes the study of behavioural and psychological science, where illnesses need to be studied in relation to patient behaviour and patient psychology. This critique is adequately linked to an illness such as diabetes which can be categorised as a lifestyle illness and thus needs to be treated from an individual patient's perspective. The human experience of an illness such as diabetes needs to be analysed in order to be able to treat the biomedical agents of the illness. According to Engel (2013:92):

“while the diagnosis of diabetes is first suggested by certain core clinical manifestations, for example polyuria, polydipsia, polyphagia, and weight loss,

and is then confirmed by laboratory documentation of relative insulin deficiency, how these are experienced and how they are reported by any one individual, and how they affect him, all require consideration of psychological, social, and cultural factors, not to mention other concurrent or complicating biological factors.”

2.8.2 Towards a patient-centred approach to health-care: the biopsychosocial approach

The biopsychosocial model was developed in 1977 by Dr George Engel as an alternative to the traditional biomedical model of health-care. This model emerged because illness could no longer be viewed in isolation from the individual. Engel (2013:93) postulates that scientific diagnosis is important for illness detection, but a medical model also needs to take into account patients, the social context of their existence and the HCPs' role in their treatment care. Dogar (2007:11) notes that provisions for these factors are catered for since *“the biopsychosocial model is a new, broader and integrated approach to human behavior and disease as compared to the biomedical model which is based on pure scientific aspects of medicine”*. The model (see figure 2.5) below clearly illustrates that the biological, psychological and social elements all impact on the diagnosis, management and outcome of a disease.

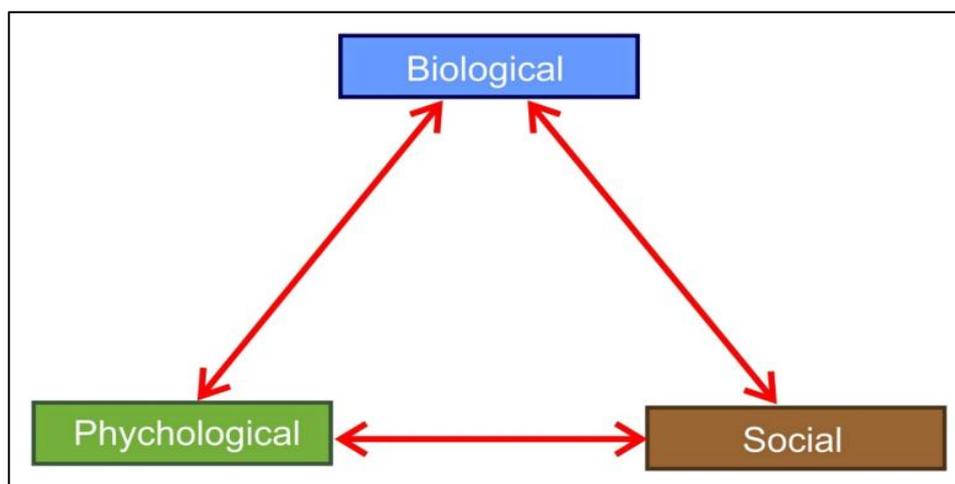


Figure 2.4: The biopsychosocial model (Source: Dogar 2007:12)

According to Elliot (2005:55-56), the biopsychosocial model can be summarised as follows:

- Health and illness coexist and are simultaneously affected in human nature.
- Illness can exist either internally or externally to the human body and occurs as a result of the individual's health behaviour.
- Patients should be granted an equal say in their health and well-being.
- Patients should be responsible for their individual health behaviour.
- Physical, psychological and social elements coexist and have the ability to impact and affect each other.
- In this model, the psychosocial elements are equally important to physical factors in illness diagnosis.
- A patient is considered the most knowledgeable in the HP-patient relationship (with reference to their illness).
- Patients should be supported and empowered in the medical system.

The biopsychosocial model proposes the patient-centred approach to health-care. The patient-centred approach was developed initially by Balint in 1969 to emphasise that an individual patient has *"to be understood as a unique human-being"* (Balint 1969). The need to shift away from a fully scientific explanation of illness to a more person-centred approach was required since illness could be caused by other factors such as psychological stress or trauma. If a person is "sick", he or she needs to restore his or her health by obtaining treatment and maintaining his or her health and well-being.

Gerteis, Edgman-Levitan, Daley & Delbanco (1993) delineated the following eight dimensions of patient-centred care: respect for the patient's values, preferences and expressed needs; information and education; access to care; emotional support to relieve fear and anxiety; involvement of family and friends; continuity and secure transition between health-care settings; and physical comfort and coordination of care.

According to Davis, Schoenbaum and Audet (2005:953), *"patient-centered care is a key component of a health system that ensures that all patients have access to the*

kind of care that works for them". Thus cultural and traditional beliefs can be catered for in the patient-centred approach to health-care. Medical systems need to integrate different health-care perspectives by educating HCPs towards the biopsychosocial aspects of health-care. According to Busia (2005:919)

"... traditional African medicine takes a holistic approach: disease, good health, success or failure, are believed to be the products of the actions of individuals and ancestral spirits according to the balance or imbalance between the individual and the social environment".

The biopsychosocial model caters for illnesses such as diabetes, and as mentioned above, this chronic condition is affected by *"multiple aspects of personality and the social environment"* (Dogar 2007:12). Psychological and social barriers affect such an illness, and thus need to be catered for in ensuring that treatment adherence is maintained through patient-centred care. However, a critique of this model is noted, as it does not indicate when and where psychosocial factors fit in or should appear in the entire health-care process. Another critique by Mead and Bower (2000b:1088) indicates that this model alone does not sufficiently explain a full understanding of a patient's experience of an illness. Table 2.2 below compares the biomedical health-care approach to the patient-centred approach.

Table 2.2: Comparison between the biomedical and patient-centred approaches to health-care

Aspect	Biomedical health-care approach	Patient-centred approach
Aetiology of disease	Diseases are pathological and can be scientifically studied	Disease/illness is a lived experience
Focus of treatment	Prevention is not the priority – instead it focuses on finding a cure with the aim of reducing morbidity and premature mortality	It focuses on the HCP-patient relationship to alter lifestyles and behaviour and to encourage personal responsibility
Health propagation	Science offers cures to illnesses	It acknowledges the influence of political, economic, social, cultural and environmental factors
Role players in health promotion	The HCP knows best and has the most knowledge on how to treat the illness	The patient is the actual person living with the illness

Aspect	Biomedical health-care approach	Patient-centred approach
Flow of health information	Information transfer from the HCP to the patient	Information exchange between the HCP and the patient
Role of the patient	The patient has no say in treatment decisions but is expected to adhere to them	The patient is involved in treatment decisions/treatment options, and aspects of adherence are interactively discussed in the HCP-patient relationship

(Sources: Wade & Halligan 2004:1398; Greaves 2004:139; Lee & Garvin 2003:449; Stewart 2001:445; Levenstein et al 1989)

The biomedical model differs from the biopsychosocial model in many ways as discussed in the table above, but one major difference relating to this study is the type of communication that each model practises. The biopsychosocial model displays interactive (interpersonal) communication in the HCP-patient relationship, while the biomedical model displays a one-way flow of communication from the HCP to the patient. According to Freund and McGuire (1991:226), communication between HCPs and patients that is not interactive contributes to serious communication problems in aspects of health-care. This point is further elaborated by Engel (2013:93), who maintains that the ability of the caring, reassuring communicator (HCP) is absent from the biomedical perspective since HCPs have neither psychological knowledge nor skills, but are instead charismatic in diagnosing and the science of the illness. In the section below, the context of the South African public health-care system is elaborated on (from past to present times).

2.9 SOUTH AFRICAN PUBLIC HEALTH-CARE: A SYSTEM INHERITED FROM THE APARTHEID HEALTH-CARE SYSTEM

In this section, information on the South African public health-care system (from past to present times) is provided to contextualise the research study. Health-care managed under the apartheid system for people of colour was limited, and public health-care provided for all South African citizens even today is therefore still under-resourced and needs to be improved, before it can adequately treat patients with

ease. The South African public health-care system adheres to the conventional biomedical health-care perspective where treatment is controlled by the HCP only.

“According to the South African National Health Plan: The South African government through its apartheid policies, developed a health-care system which was sustained through the years by the promulgation of racist legislation and the creation of institutions such as political and statutory bodies for the control of the health-care professions and facilities. These institutions and facilities were built and managed with the specific aim of sustaining racial segregation and discrimination in health-care” (National Health Plan 1994).

The South African public health-care system was greatly affected by racial inequalities and people of colour thus suffered greatly. Treatment was limited, if available at all, for black communities based in rural areas. The turmoil of the South African public health-care system was caused by the injustices of the apartheid system on public health-care. *“Before 1994, the South African system was built on apartheid ideology and characterized by racial and geographic disparities, fragmentation and duplication”* (Sibiya & Gwele 2013:388). Disease in South Africa is shaped by political and economic injustices of historical systems (Packard 1989:5). Illness in South Africa was racialised where whites received optimal care and people of colour received little or no proper care in the health-care system. According to Seekings (2002:5), *“the apartheid state was, of course brutally oppressive. It discriminated on the basis of imposed racial classifications, denying African subjects equal political, social or economic rights.”* Gender and racial discrimination were rife in this country. The Nationalist Party, which ruled South Africa from 1948, *“represented a constellation of interest groups who were diametrically opposed to the pattern of social and economic development that has shaped South African society over the previous twenty years”* (Packard 1989:249).

Prior to the Nationalist government, colonialism negatively contributed to South Africa’s public health-care system. South Africa is currently facing further post-apartheid challenges in providing optimal health-care in the public arena. This contextualises the many transitions the country’s public health-care system underwent and is currently challenged by (Coovadia, Jewkes, Barron, Sanders & McIntyre 2009:817).

After apartheid was dismantled, the country faced many public health-care challenges. The system was restructured into one national health system with nine provincial health departments. A district health-care system emerged for primary health-care provision. Public health-care was to be made available to all, especially socially or previously disadvantaged communities. Clinics were built in order to reach patients in both rural and urban communities. Health-care was to move forward in providing optimal care for all South Africans in an equal manner. However, the country faced many challenges, inter alia, financial constraints, human resource availability and the burden of HIV/AIDS (Coovadia et al 2009:828–829). The South African public health-care system is under massive financial strain, according to Sibiya and Gwele (2013:388) “[T]he public health sector consumes around 11% of the government’s total budget, which is allocated and spent by the nine provinces.” Yet this sector cares for almost 80% of the country’s population.

The African National Congress (National Health Plan for South Africa 1994) won the first democratic elections in 1994. The new government developed national planning documents for a new health-care system in South Africa. As explained above, the health-care system was structured under a national, provincial, district and, finally, community level health approach. The aim was to reach all citizens in an equal and fair manner. The primary health-care approach (PHC) was developed to reach disadvantaged communities and involve them in the development of this new health plan. Since South Africa was now a free country all citizens had a right to basic health-care service provision. According to the National Health Plan (1994:1), the ANC government aimed to legislate health-care in the following ways:

- Ensure that the emphasis was on health and not only medical care.
- Redress the harmful effects of apartheid health-care services.
- Encourage and develop comprehensive health-care practices that were in line with international norms, ethics and standards.
- Emphasise that all health workers had an equally important role to play in the health system, an ensuring that team work was a central component of the health system.
- Recognise the most important component of the health system was the community, and ensure that mechanisms were created for effective community participation, involvement and control.

- Introduce management practices aimed at efficient and compassionate health-care delivery.
- Ensure respect for human rights, and accountability to the users of health facilities and the public at large.
- Reducing the burden and risk of disease affecting the health of all South Africans.

According to Coovadia et al (2009:817), *“the public health-care system has been transformed into an integrated, comprehensive national service, but failures in leadership and stewardship and weak management have led to inadequate implementation of what are often good policies”*. Post-apartheid policies were developed in South Africa in the form of national planning for the country’s future, as explained above. However, the effects of the apartheid system still impact on the quality of public health-care provided even today. In many public health-care facilities, treatment is not readily available, the services provided are of low quality, human resources are low and medical staff are pressured with high patient ratios (Coovadia et al 2009:829). Health policies in South Africa prior to 1994 were mostly in favour of the white minority. New health policies were written according to the constitutional rights of citizens.

Medical treatment provided during apartheid was referred to as “apartheid medicine”, where the white minority received adequate health-care and the black majority had discriminatory health-care services. Policy during the apartheid era favoured service provision to whites (Nightingale et al 1990). Blacks, Indians and coloureds received health-care separately and this care was of a lower quality to that received by white citizens. The white Nationalist government oversaw the medical services provided to people of colour. In South Africa, racial segregation occurred according to medical care, the education system, the Group Areas Act where housing provision was made according to the colour of one’s skin among other segregation laws. Health-care facilities were thus built in different areas to provide medical care with limited service to citizens of colour. According to Foster (2005:247), medical care provided to people of colour took the form of *“underfunded and overcrowded-provincial hospitals.”* Basic medical care and medicines like cough syrup were limited to provincial level for black citizens. Inequality existed at all levels in service delivery,

and thus post-1994, the public health-care system still displays limited service provision. Factors such as limited finances and the inequalities of the past still limit medical care provided today.

The apartheid health-care system adhered to the biomedical health-care framework where it placed the medical doctor in the superior position to the patient. The HCP held decision-making power for the patients' health-care situation. The ANC government confirmed that patient-centred care was absent in the fragmented health-care system of the past. According to the National Health Plan for South Africa (1994):

"[t]he net result has been a system which is highly fragmented, biased towards curative care and the private sector, inefficient and inequitable. Team work has not been emphasised, and the doctor has played a dominant role within the hierarchy. There has been little or no emphasis on health and its achievement and maintenance, but there has been great emphasis on medical care."

The South African National Department of Health (2007:4) included in its policy that patient-centred care or "patients' participation" should be implemented in the new public health-care system in South Africa post-1994. The policy dictates the following:

- **Informing patients and involving them in decision making.** The active participation in their care can improve the effectiveness of care as well as satisfaction with their care. Patients who are treated with dignity and are well informed and are able to participate in treatment decisions are more likely to comply with their treatment plans.
- **Enabling patients to care for themselves.** Empowering individuals with the skills and tools to care for themselves is especially important for those with chronic illness or disability. Enabling users to assess their health, practise preventive health-care, and self-care, will improve their health and reduce unnecessary health-care service costs.
- **Community participation.** Not only individuals need to be encouraged to participate in health-care, but also whole communities. The importance of community action has already been clearly demonstrated in the fight against AIDS.

According to Mayosi, Flisher, Lalloo, Sitas, Tollman & Bradshaw (2009:1), prior to freedom, South Africa's health system suffered greatly and high levels of inequality led to an increase in non-communicable diseases among South Africans. Social factors such as poverty, illiteracy and low levels of education among the disadvantaged, contributed to an increase in various illnesses. Once democracy prevailed, the aim was to improve the medical system by trying to provide treatment for all at public health-care facilities. However, this was not always the case owing to the costs involved and the economic background of the country. Free health-care could not be fully achieved as indicated in the country's new health policies, because of uneven accessibility to services as well as low standards in health-care services available to the general public. The South African public health-care system is also overburdened by communicable diseases such as HIV/AIDS, which raise expenditure. Hence non-communicable diseases such as diabetes are marginalised in treatment access. South Africa needs to focus on combating diseases such as diabetes or there is a great risk of suffering in the future.

Mayosi et al (2009:11) assert that the government needs to take precautionary measures such as obtaining funding to allow easy access to treatment for non-communicable diseases. Health systems need to be reshaped by providing more training for HCPs and educating the public on diseases and all the precautionary measures that can be taken to avoid becoming ill. Education can also be provided on existing illnesses as well as treatment adherence education. Partnerships should be built with communities, government, faith-based groups, and women's groups, and these should all work together to assist and educate the public on a way forward. The researcher wishes to point out that owing to the inequalities of the past, people in South Africa faced an injustice and this negatively affected illness and treatment availability to all. South Africa thus needs assistance from international federations and local government to improve treatment facilities, provide education on disease and illness management, and increase treatment adherence of all patients.

South Africa's progressive constitution guarantees life, dignity and equality to all (sections 9, 10 and 11 of Chapter 2 [Bill of Rights] of the Constitution). However, the country also has one of the highest rates of income inequality in the world. Mooney and Gilson (2009:858) indicate how the global financial crisis has impacted negatively on the South African economy, and also that changes in leadership have

further contributed to the uncertainty of the economy. In 2009, gross domestic product decline in comparison to 2008 levels. Other factors that affect the economy negatively include food crises and global warming.

It is estimated that almost half of the South African population live in poverty. The apartheid system increased the level of poverty among different race groups – therefore, post-1994 it has been almost impossible to alter poverty drastically. In fact, Mooney and Gilson (2009:858) indicate that rates of inequality in South Africa have worsened. According to Mathee et al (2009:721), *“South Africa is among the most unequal societies in the world. It faces serious public health challenges, including an elevated burden of chronic disease, and high levels of violence.”*

The pervasiveness of such socioeconomic deprivation resulted from the oppression and purposeful underdevelopment of the majority of people under the apartheid regime. High unemployment and low wages have further contributed to poverty. Public health-care facilities have also been affected by this inequality since health-care availability in South Africa is determined by world markets. Treatment costs are contributing negatively to the financial burden of the country since loss of human life adds to the economic burden of the country’s workforce (Mooney & Gilson 2009:858).

Kleinert and Horton (2009:759) question the future of the South African public health-care system and indicate how the Mbeki government contributed negatively to public health-care for HIV and AIDS care and treatment, owing to the AIDS denial phase the country experienced under Mbeki’s leadership. South Africa’s expenditure for health costs is more than any other African country, which clearly indicates the financial strain the country will undergo in the future for treatment costs in public health-care facilities. As indicated, because diabetes rates are increasing drastically, treatment costs will add further financial strain to the already deteriorating public health-care system. Mshunqane, Stewart and Rothberg (2012:1) posit that diabetes contributed to the highest death rates between 2004 and 2005 in South Africa. The current ANC government, under the leadership of President Zuma, is also facing enormous public health-care challenges with regard to HIV/AIDS as well as tuberculosis (TB) management. Rebuilding the health-care system is a task that needs to be done. South Africa’s democracy is just over 20 years old and the current

public health-care system still has a long road ahead with regard to producing sufficient care as promised in the Constitution (Marais 2010:309–310).

2.10 URBANISATION: A KEY CONTRIBUTOR TO THE EPIDEMIOLOGY OF DIABETES IN SOUTH AFRICA

According to Yach and Seager (1991:12), urbanisation has led to a drastic increase in chronic diseases. People moving from developing to developed areas have altered their lifestyle patterns and diets, thus putting them at risk of illnesses. In South Africa after the apartheid system, the Group Areas Act was repealed on 30 June 1991, and many rural people moved to urban areas (the second wave). In the first wave, rural dwellers moved to urban areas (the Influx Control Act, which was abolished in 1986, tried to control these movements) in search of employment after South Africa started industrialising. Poverty as well as economic conditions in South Africa have contributed negatively to an increase in disease and illness. Diabetes can be seen as a disease that is associated with urbanisation due mainly to diet and lifestyle changes which are increasing rapidly with migration.

Banerji (1989:179) posits from a social health-care context that urbanisation has led to an introduction of Western medication. The concept of “health culture” was sufficiently altered with urbanisation, since, prior to urbanisation, communities led “simple” lives which were governed by simple health cultures. *“Urbanisation and industrialisation also lead to considerable erosion of people’s capacity to cope with their own health problems”* (Banerji 1989:179). Industrialisation has ensured that urban dwellers are exposed to new environmental health hazards, for example, mining has led to mining-related illnesses which workers have to face. Modern technology causes lifestyle patterns to be altered considerably, fast-food availability caused eating habits to be changed which affects people’s diets, and has caused increased levels of obesity, which are all risk factors for diabetes. In urban areas, because everything can be purchased, people have moved away from the conventional simple style of living.

In this regard, Obrist, Tanner and Harpham (2003:361, 365–356) refer to certain health hazards which evolve from urban dwelling, namely *“levels of environmental*

hazards, commodification, social fragmentation and health service provision". Social fragmentation indicates that families are broken up and individuals are no longer socially connected, but are rather left to fend for themselves in cities. In rural areas in South Africa, the notion of the extended family exists, which refers to living with and taking care of the aged, but this is in opposition to life in urban areas. The final hazard to urban life, namely health service provision, is visible in South Africa. Urban areas do have improved health facilities, but the question arises of availability of treatment in public health facilities. South Africa is a country with a long and troubled political and economic history, and treatment accessibility for all still remains a problem. The apartheid system has greatly impacted on treatment accessibility and public health-care availability even during the democratic era in this country. Poverty in South Africa is a key contributor to medical costs and impacts on treatment availability. Private medical care ensures that health-care and treatment services are readily available, but the problem of finance surfaces. Many people who leave rural areas to come to urban areas are financially disadvantaged or poverty stricken, and therefore public health-care is their first option for medical treatment. According to Collinson, Tollman and Kahn (2007:82), urbanisation in South Africa has resulted in non-communicable diseases becoming the leading cause of death in urban areas, as opposed to communicable diseases.

Puoane et al (2002:1038), analysing obesity in South Africa, found that patterns of urbanisation in African communities have led to changes in diet which cause higher levels of obesity. Data from the study indicated that the South African adult population displayed patterns of over-nutrition and increased body weight, contributing to obesity predominately among urban African people compared with rural African people. Nutritional patterns changed over time in African communities, which contributed to obesity. Obesity is a great risk factor in developing diabetes. The study noted that in African women, obesity starts at a young age and that 10% of women at the ages of 15 to -24 years were obese. Many adult African women based in urban areas were diagnosed as obese. Furthermore, there is the higher diabetes risk in older people, as discussed earlier in this chapter.

Research conducted by Bourne, Lambert and Steyn (2002:157) analysing nutrition transition in black South Africans clearly indicated that traditional diets are abandoned with urbanisation and Western diets are more widely implemented. This

causes nutritional imbalances in this race group. The research suggests that obesity and inactivity are health concerns of the future. These are leading causes of diabetes and thus present a health concern for the country. Data from the study yielded results which showed that:

“among urban Blacks, fat intakes have increased from 16.4% to 26.2% of total energy (a relative increase of 59.7%) while carbohydrate intakes have decreased from 69.3% to 61.7% of total energy (a relative decrease of 10.9%) in the past 50 years. Shifts towards the Western diet are apparent among rural African dwellers as well” (Bourne et al 2002:157).

Healthy lifestyles as well as engaging in more physical activity and diet changes need to be implemented in the South African population to ensure that mortality rates are reduced. Owing to increased urbanisation, diabetes is a rising health concern.

2.11 CONCLUSION

The aim of this chapter was to discuss the epidemiology of diabetes in South Africa. Diabetes as a disease was explained in detail, including the different types of diabetes, symptoms of diabetes, diabetes risk factors and the effects of the illness on the human body. The disease was placed in context by providing a detailed explanation of what diabetes is. The epidemiology of diabetes was contextualised by providing background information to diabetes prevalence in Africa, sub-Saharan Africa, South Africa and KZN. The two approaches to health-care, namely the biomedical and biosychosocial frameworks were discussed in order to provide the context of the current South African public health-care system. This explanation led to a summary of the South African medical system to emphasise the effects of the political and economic past on the current public health-care system. The purpose of background information provided on the history of the South African public health-care system was to contextualise the focus of this study. In conclusion, the way in which urbanisation has contributed to epidemic diabetes rates in South Africa was explained. The next chapter will outline the literature review for this study.

CHAPTER 3

LITERATURE REVIEW PART 1: HEALTH COMMUNICATION MODELS

3.1 INTRODUCTION

The literature review chapters, starting with this chapter, focus on communication dynamics in relation to health-care at both an intrapersonal (part 1) and interpersonal level with regard to the social and cultural context (part 2). A number of different health communication models are reviewed in order to contextualise the conceptual framework for this study.

Both the literature review chapters aim to answer research question 1, namely:

- What seminal health communication models assist in explaining HCP-patient and HCP-HCP interaction and communication dynamics?

In this chapter, health communication models are outlined in the context of health-care and communication dynamics for diabetes management when related to persuasive and cognitive behaviour change communication.

Seminal intrapersonal health communication models are reviewed in part 1 of the literature review and include the following: the Health Belief Model (HBM); the Theory of Reasoned Action (TRA)/Theory of Planned Behaviour (TPB); Protection Motivation Theory; the Elaboration Likelihood Model (ELM); the Trans-Theoretical Model (TTM); the Precaution Adoption Process Model (PAPM); and the Information-Motivation-Behavioural Skills Model (IMB). For the purposes of this study, the models are discussed as they emerged in chronological order in order to explain persuasive behaviour change communication.

The conceptual framework aims to build one coherent framework in the form of a model which incorporates patient-centred care and practises interpersonal communication (interactive communication) which occurs on a two-way level between the HCP-patient relationships for diabetes health-care and treatment adherence. Therefore different health communication models are reviewed in this

chapter to help contribute different constructs or tenets towards the single comprehensive framework.

This chapter focuses on how health communication is conceptualised and executed (at an intrapersonal level) by discussing previous studies and literature in general in order to provide a strong theoretical base for this research.

This chapter focuses on reviewing seminal, intrapersonal health communication models (specifically for the purposes of this study) which explain behaviour change, persuasion and cognition among other factors, as will be detailed in the explanation of each model or theory below. These models or theories emphasise the intrapersonal factors that are linked to individuals. However, intrapersonal communication is influenced, determined and/or exists by various external variables in the environment (see chapter 4, figure 4.1) and thus takes place through interpersonal communication (as expanded on in chapter 4). This chapter therefore refers to health communication at an intrapersonal level (explaining the cognitive level of the individual) in relation to actual health-care communication that occurs at an interpersonal level.

Many of these theories are outlined and discussed in part 1 (chapter 3) and part 2 (chapter 4) of the literature review in order to contextualise the conceptual framework (chapter 5) of this study.

3.2 A PARADIGM OF INTRAPERSONAL HEALTH COMMUNICATION MODELS AND THEORIES

Various health communication models and theories relating to persuasive communication, behaviour change communication and cognition are explained in section 3.3 below. For the purposes of this study, different health communication models/theories (part 1 and part 2 of the literature review chapters) are explained in order to contextualise the conceptual contribution for diabetic care in South Africa (which will be discussed in chapter 5). In chapter 2, the context of the South African public health-care system was detailed explaining how public health-care in South Africa is more embedded in the biomedical framework. The political structure of South Africa has greatly impacted on public health-care service delivery (as

explained in chapter 2). In the next section, a literature review is conducted of different health communication models and theories as they relate to communication dynamics for the purposes of this study.

Communication dynamics in relation to this study refers to the different dynamics that occur in the medical system which may affect health-care. For example, communication dynamics between the HCP and patient as well as among HCPs, affect patient dynamics in health-care service delivery. The health system is made up of different dynamics, which include health-care dynamics, patient dynamics, health-care provider dynamics, systematic dynamics (different systems that control the medical arena) and group dynamics. The fields of sociology and health-care posit different health-care dynamics to understand social phenomena (Clarke 2001:7).

3.2.1 Differences between a model and a theory

Different health communication models and theories are reviewed in section 3.3 and chapter 4, however, clarification is provided with regard to the differences between a theory and a model in table 3.1 below.

The differences between a theory and a model, as expounded by Sharma and Romas (2012:41), are explained below.

Table 3.1: Summary of the differences between a model and a theory

Theory	Model
Explains or predicts phenomena	Simplified, miniaturized applications of concepts for addressing problems
Micro-level guidance	Macro-level guidance
Empirically tested	Not enough empirical evidence
Based on previous literature	Creative
Usually parsimonious	Usually tries to cover a lot
Does not contain any model	May embody one or more theories

(Source: Sharma & Romas 2012:41)

For the purposes of this study, health communication models and theories relating to persuasive, cognitive and behaviour change communication are reviewed to contextualise communication dynamics for this study.

3.2.2 Approaches to health communication

According to Edwards (2014:56–57), the following approaches to health communication/health promotion exist:

- ***The medical approach.*** This refers to the biomedical approach which is discussed in chapter 2. HCPs tend to focus on diagnosis and treatment only. As explained in chapter 2, the medical approach is scientific in nature and lacks psychosocial elements which are important for health-care and treatment purposes.
- ***The behavioural approach.*** This approach tends to focus on persuading people (people refer to patients in the context of this study) towards altering their behaviour in order to maintain their health. Behaviour in this context refers to lifestyle changes. For the purposes of this study Type 2 diabetes is considered to be more of a lifestyle illness (compared to Type 1 diabetes, since Type 1 diabetes cannot be prevented and is more harmful in its symptoms and occurs in people who are usually underweight or normal weight) –hence the behavioural approach is key in selection of appropriate health communication models.
- ***The educational approach.*** This approach assumes that providing information (in the form of education) on aspects of health-care to people is enough to assist them to maintain their health effectively. According to this approach, people are educated on lifestyle health promotion maintenance.
- ***The social change approach.*** The social approach deals with factors/issues relating to the broader socioeconomic and environmental perspectives. The social aspects of health-care will be expanded on in chapter 4.

3.2.3 A brief summary of planning models for health education and health promotion models

Health communication in relation to communication dynamics between HCP-patient relationships and HCP-HCP relationships was the focus of this study. A subsection of health communication also exists which relates to health promotion that includes the planning of communication campaigns, health education strategies and interventions which are conducted in order to educate the masses on various health issues. In table 3.2 provides a brief summary of these models as they emerged in chronological order.

Table 3.2: Summary of planning models for health promotion and health education programmes

Health education/health promotion model	Summary of the model
Model for Health Education Planning (Ross & Mico 1960)	This model includes six phases, namely: programme initiation, needs assessment, goal setting, planning/programming, implementation and evaluation. This model consists of three dimensions (subject matter steps, techniques and interactions) towards planning, implementing and evaluating a health programme. It is not used much in current practice.
Precede-Proceed Model (1980)	This model comprises of eight phases that assist with planning any health programme. These phases include Social assessment, epidemiology assessment, educational and ecological assessment, administrative and policy assessment and intervention alignment, implementation, process evaluation, impact evaluation and outcome evaluation.
Planned Approach to Community Health (PATCH) (Centres for Disease Control and Prevention 1980)	This model deals with the planning for community health programmes.
The multilevel approach to community health model (Simons-Morton, Greene & Gottlieb 1980)	Focus is on community health where the communicator is placed at the centre of planning. No extensive local needs assessment is required.
Assessment Protocol for Excellence in Public Health Model (National Association of Country and City Health Officials 1980)	This model helps in building organisational capacity and was intended to be used by local health departments. It promotes leadership roles

Health education/health promotion model	Summary of the model
	for health departments.
CDCynergy (Centres for Disease Control and Prevention 1990/1997)	This refers to a multimedia CD program (comprising six phases: phase 1: describe problem, phase 2: analyse problem, phase 3: plan intervention, phase 4: develop intervention, phase 5: plan evaluation, and phase 6: implement plan) developed for planning health communication programmes.
Intervention mapping (Bartholomew & Colleagues 1990, adapted from Bartholomew and colleagues 2006)	Deals with individual behaviours in an environmental context (context includes: living context, family context, social networks, organisations, communities and societies)
PEN-3 Model (Airhibenbuwa 1993, 1995)	<p>This model comprises three dimensions (cultural identity, relationships and expectations and cultural empowerment) which are interrelated and interdependent. The word “PEN” is abbreviated per dimension discussed above. This model emerged later and caters for culture and relationships in promoting health-care from a health promotion and purely health campaign context for individuals, extended families or communities.</p> <p>This model was initially created for health campaigns in African countries and the abbreviation “PEN” was later expanded within the dimension of <i>relationships and expectations</i> borrowing from the HBM, TRA and the Precede-Proceed Model. Many health communication models and theories emerged from existing models and theories (or by borrowing tenets or constructs from existing models and theories) – one such example is the PEN 3 Model.</p>
Generalised Model (GM)	Comprises of five steps (assessing needs, setting goals and objectives, developing interventions, implementing interventions and evaluating results) towards planning a health promotion programme for specific health-related issues.

(Source: adapted from Sharma & Romas 2012:43-60; Cottrell, Girvan, Mckenzie & Seabert 2015:121 -125)

Table 3.2 shows the different health promotion models that exist in the literature from historically and at present. A critique of most of the models explained above is that they are more suited towards the planning, implementation and assessing of health promotion campaigns as opposed to emphasising communication dynamics in

relation to HCP-patient relationships or HCP-HCP teamwork dynamics, which occur in a health communication setting for diagnostic and treatment adherence purposes.

In the section below provides a review of seminal intrapersonal health communication and persuasive behaviour change communication models.

3.3 INTRAPERSONAL HEALTH COMMUNICATION MODELS/THEORIES

Intrapersonal communication is defined as communication that occurs within an individual as an internal activity (Berry 2007:9–10). In this section, intrapersonal health communication models, which are categorised as cognitive (perceptions or beliefs which predict behaviour), persuasive and behaviour changing models are reviewed as a context for this study.

Intrapersonal models/theories focus on factors within the individual (self-concept) such as, knowledge/beliefs, attitudes, personal history (past experiences), skills behaviour and motivation (Rimer & Glanz 2005). Intrapersonal models that will be reviewed for this study include the following: the Health Belief Model (HBM); the Theory of Reasoned Action (TRA)/Theory of Planned Behaviour (TPB); Protection Motivation Theory; the Elaboration Likelihood Model (ELM); the Trans-theoretical Model (TTM); the Precaution Adoption Process Model (PAPM); and the Information-Motivation-Behavioural Skills Model (IMB). The models are discussed as they emerged in chronological order in the literature, explaining persuasive behaviour change communication for the purposes of this study. It is important to note that most of these models have emerged from social, psychological, psychotherapy and communication backgrounds, but they are used in health behaviour research and are thus appropriate for the purposes of this study (Sharma & Romas 2012; Janz, Champion & Stretcher 2002:46; Cottrell et al 2015). Practical examples are provided in relation to diabetes as an illness for the purposes of this study. Also, as explained above, intrapersonal communication is influenced by external variables that exist in the environment and thus takes place through interpersonal communication – thus reference to interpersonal communication is also included in this chapter when relating to the discussion of each model.

3.3.1 The Health Belief Model (HBM)

This model that can be classified as a model of cognitive behaviour change. Even though the HBM has been labelled a model, it fits all the criteria as discussed in table 3.1 above for being categorised as a theory instead of a model (Sharma & Romas 2012:74). The HBM was developed in the 1950s and is still used today since it is considered to be “one of the most popular models as it provides specific guidance at the micro level for planning the “how to” part of interventions” (Sharma & Romas 2012:74; Hayden 2009:31).

The HBM is a seminal model in health promotion more specifically for health promotion and health campaigns. This model explains and predicts behaviour change in terms of intrapersonal and psychological states and constructs. The individual needs to weigh the pros and cons of behaviour change which then inform a readiness to act (Glanz, Rimer & Lewis 2002; Sharma & Romas 2012:74). The model deals with preventive health actions (from the individual’s perspective).

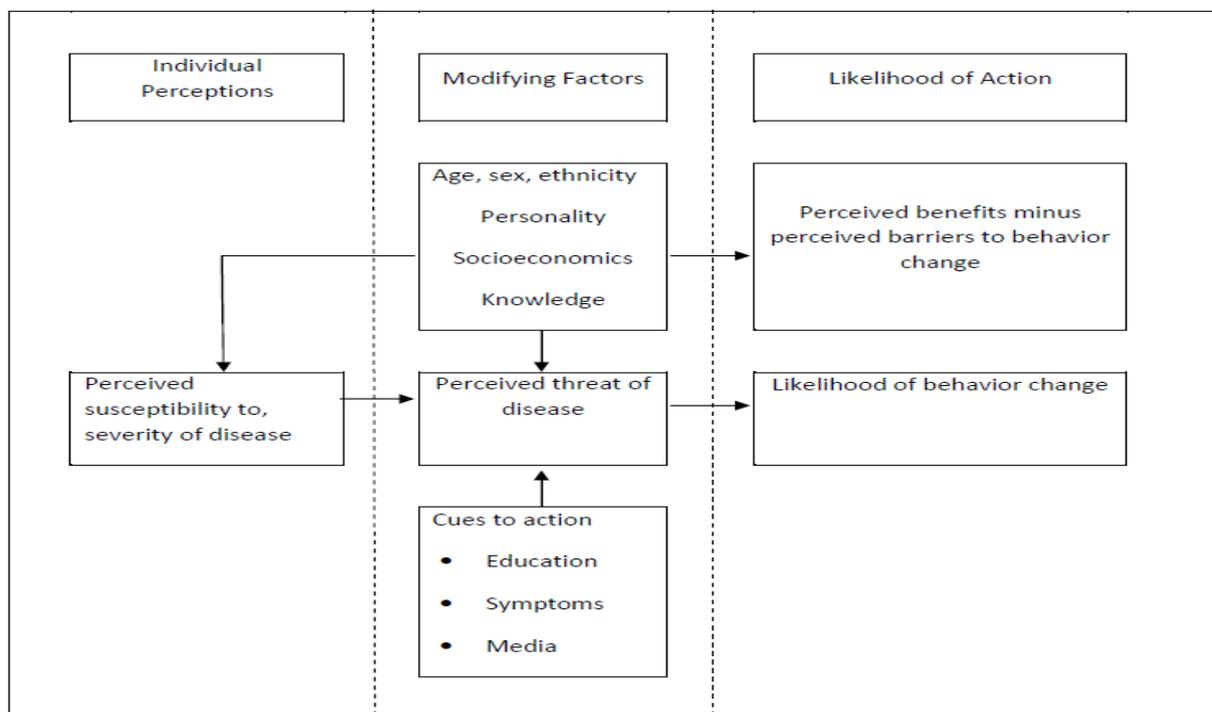


Figure 3.1: The HBM (Source: Janz & Becker 1984 in Janz et al 2002:52)

The HBM comprises the following six constructs;

Perceived susceptibility. The individual assesses his or her chances of disease susceptibility. Risk of illness plays a substantial role in motivating people to alter behaviour patterns to benefit healthy living. For example, in cases of diabetic parents, children will display more perceived susceptibility and will thus tend to maintain their weight in order to avoid becoming diabetic. These children will practise risk-reducing behaviour by trying to live healthily and control their weight since obesity is a known risk factor for diabetes (Forsyth & Goetsch 1997:112). This construct is subjective towards the individual experiencing this perceived susceptibility. The more susceptible the individual feels, the greater the likelihood of preventive measures occurring (Sharma & Romas 2012:76–77). HCPs or health educators need to work this tenet/construct in order to awaken patients to the severity of acquiring an illness such as diabetes.

Perceived severity. This construct is similar to perceived susceptibility above. The individual has a perceived perception about the severity of an illness or an actual behaviour pattern that can harm him or her. For example, with an illness such as diabetes, patients are aware that if they become diabetic it is an incurable illness that can result in death if it is not managed. Since individuals react differently to illnesses, for some a concern can be medical severity, while in another patient the concern of the impact on his or her social life, family and work might be the major one. Both perceived susceptibility and perceived severity are cognitively inclined and thus depend on the patient's knowledge in relation to the illness or specific behaviour pattern that can cause harm (Hayden 2009:31; Sharma & Romas 2012:77-78).

Perceived benefit. This construct indicates that HCPs need to display the advantages of the cause of action (or preventive behaviour patterns) in which individuals will see benefit and therefore participate. For example, if communication is sent on the symptoms of diabetes, people need to see the advantages of these methods in reducing undiagnosed diabetes which can be harmful to the individual (Hayden 2009:32).

Perceived barriers. This construct refers to the barriers that a person can foresee if behaviour change occurs. Barriers include cost factors, the person can also display

psychological barriers such as fear of pain or fear of danger with the implementation of new behaviour patterns (Janz et al 2002:48).

Cues to action. These cues refer to the actual events, people or things that motivate people towards behaviour change (Hayden 2009:33). This behaviour change model is ideal for health promotion campaigns since the media can be used to educate the masses on different aspects of health. Examples of such campaigns are world diabetes day, world AIDS day, which are global mass media campaigns aimed at educating the world on illnesses and precautionary or maintenance methods that can be implemented in order to achieve healthy living.

Self-efficacy. This relates to the belief in one's own ability to be able to take action and do something (Hayden 2009:34). An example of this construct when related to diabetes can be the need for exercise (self-efficacy), but perceived barriers (such as laziness, lack of time to exercise or obesity) that prevent diabetics from participating in such healthy living.

3.3.2 The Theory of Reasoned Action (TRA)/Theory of Planned Behaviour (TPB)

The TRA was introduced in 1967 and was later extended to the TPB in 1985 (Bernard & Krupat 1994:73). Initially, the TRA intended to understand "*the relations between beliefs (behavioural and normative), attitudes, intentions, and behavior*" (Montano & Kasprzyk 2002:67). Thereafter the extension towards the development of the TPB was added on in order to understand the relationship between attitudes and behaviour implementation. The aim of this theory is to understand and predict individual behaviour. The constructs of this theory elaborate on individual motivational factors as a determinant of a person engaging in a specific behaviour (Montano & Kasprzyk 2002:67).

3.3.2.1 The TRA

The TRA distinguishes between attitudes in two ways, namely attitude towards an object, and attitude towards one's behaviour related to the object. For the purposes

of this study, a practical health-related example is a patient's attitude towards the object (illness in this case), that is diabetes versus the behaviour in seeking a blood test to determine blood glucose levels. According to the TRA, an individual's *behavioural intention* is a vital construct in determining the behavioural pattern or behavioural action he or she will undertake. A person's *attitude* and *subjective norms* will determine whether or not behaviour change will occur. Attitude is determined by a person's behavioural beliefs relating to the outcome of behaviour change (Montano & Kasprzyk 2002:68, 71).

3.3.2.2 The (TPB)

The TPB was expanded with the constructs of *perceived behavioural control*, *control beliefs* and *perceived power* (see table 3.3 below). These constructs indicate that an individual has the ability to control his or her behaviour accordingly, since attitude towards change impacts on the decision to either implement behavioural change or not. A patient needs to see benefit in wanting to seek medical help to determine his or her diabetic status. A person needs to maintain a healthy lifestyle, diet and exercise in order to avoid becoming overweight and thus reduce the risk of developing diabetes (Sharma & Romas 2012:129).

Table 3.3: Summary of the constructs of the TPB and TRA practically linked to diabetes as an illness

TRA		
Constructs	Definition	Health-related examples for diabetes
Behaviour	This construct refers to thoughts an individual experiences relating to him or her wanting to engage in the behaviour.	In the context of this study, behaviour refers to a patient's behaviour in the health-care context for an illness such as diabetes.
Behavioural intention	Occurs within a specific target, action, context and time.	Intention is linked to behaviour, but intentions tend to change over time. For example, if a person intends to exercise to lose belly fat to reduce diabetes risk, he or she needs

TRA		
Constructs	Definition	Health-related examples for diabetes
		to make this intention and execute such behaviour in order for risk reduction to occur.
Attitude towards the behaviour	This construct refers to the like or dislike the individual displays towards a certain behaviour. Positive attitudes towards a behaviour will enable positive behaviour change to occur with ease. However, a negative attitude (or dislike) towards a behaviour change will ensure that behaviour change will not occur.	When patients display positive attitudes towards maintaining their illness by displaying full adherence to medication, positive behaviour change occurs. However, negative attitudes displayed by patients towards illness diagnosis (such as diabetes diagnosis) can result in non-adherence and the patient only ends up harming himself or herself only.
Behavioural beliefs	This construct elaborates that a person believes that certain behavioural patterns will result in certain outcomes.	If a patient maintains adherence to diabetic medication and engages in a healthy lifestyle, his or her behavioural belief will be one of a prolonged life even though he or she is diabetic. However, the latter can occur – for example, that diet change will result in the patient missing out on favourite foods. The patient brainstorms all possible options (Sharma & Romas 2012:128).
Outcome evaluations	Here the person evaluates the outcome of his or her specific behaviour patterns.	For example, if a patient exercises regularly (behaviour change), he or she deduces a behavioural belief that his or her blood glucose levels will remain constant (outcome evaluation).
Subjective norm	This construct refers to the normative subjectivity or social expectations that “significant others” portray of the person.	When linked to diabetes, significant others refer to the patient’s family members. Hence if the patient reduces intake of liquids or solids which contain a high sugar level, the patient’s family members will be proud. Significant others

TRA		
Constructs	Definition	Health-related examples for diabetes
		can help motivate a patient maintain a healthy diet, which will result in the person leading a healthy diabetic lifestyle.
Normative beliefs	This construct explains the notion of “significant others” and their behavioural expectation of the individual.	This construct is linked to subjective norm above and once again indicates the dimension of “significant others” and their importance in the health and well-being of the patient.
Motivation to comply	This construct relates to the two constructs above which pertain to the importance of “significant others” and the patient’s motivated intention to want to comply in order to please the significant others in his or her life.	Significant others such as family members can positively motivate patients towards treatment adherence.
Additional constructs: TPA		
Perceived behavioural control	The perception the person has about his or her ability to participate in the behaviour change.	The patient has the ability to promote behaviour change for diabetes and with support from significant others, the patient can be further motivated in this regard.
Control beliefs	These refer to internal and external factors that can either facilitate or hamper behaviour performance	Patients have certain beliefs about engaging in certain behaviour change patterns (these include both positive and negative beliefs).
Perceived power	The individual perceives the ease or difficulty in performing the behaviour change relating to those identified in the control beliefs.	Patients need to make changes (relating to behaviour) in small steps, examples being exercise, diet change that significant others can assist with, by removing barriers regarding negative beliefs.

(Source: Hayden 2009: 20-21; Sharma & Romas 2012:128-129; Corcoran 2013:14)

3.3.3 Protection Motivation Theory (PMT)

This theory was developed by Rogers in 1975 to initially test fear tactics and their effects on health behaviour. In 1983, Rogers extended the model to a more persuasion-oriented communication theory (Cottrell et al 2015:104). This model is closely related to the HBM since it contains similar constructs and displays intrapersonal persuasive communication. The construct perceived severity is linked the individual either engaging in behaviour change or not.

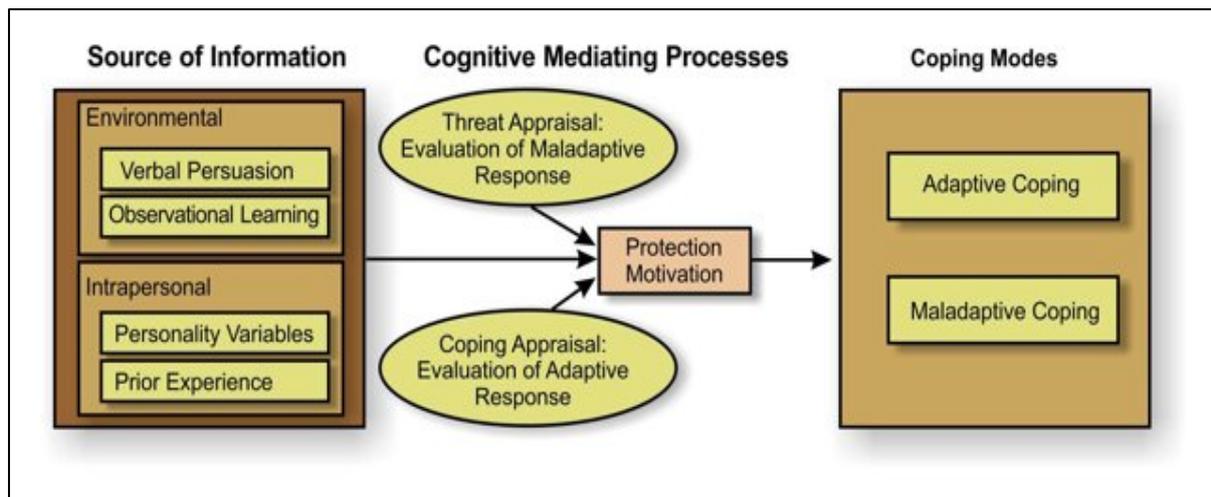


Figure 3.2: The PMT (Source: Floyd, Prentice-Dunn & Rogers 2000: 410)

According to Bui, Mullan and McCaffery (2013:522), the PMT can be classified as a model that promotes behaviour change in relation to cognitive processes for different health-related behaviours. This theory emphasises coping modes in relation to two forms namely, adaptive coping (which is beneficial to health) and maladaptive coping (which is harmful to health). This theory emphasises two appraisal processes, namely threat and coping. When protection motivation is favoured or increased, individuals engage in decisions which are beneficial to their health (since they acknowledge that the threat to their health is severe). However, when protection motivation is not favoured or decreased, intrapersonal factors (such as an individual's personality or personal experiences) ensure that the individual sees no threat to his or her health occurring (Armitage & Conner 2000:175; Cottrell et al 2015:104).

Sources of information for the purposes of this study include HCPs (verbal persuasion) and observational learning (such as looking at others and learning how

to cope or engage in healthy behaviours). The individual's intrapersonal factors also come into play and the cognitive processes of threat and coping arise by weighing the pros and cons of acknowledging the illness and maintaining treatment adherence. Protection motivation is high when the individual acknowledges that he or she has a severe health problem and sees little benefit in the maladaptive behaviour and believes that he or she can cope (Cottrell et al 2015:104). The PMT has been successfully implemented in predicting and analysing chronic care conditions for self-care management (Laugesen & Hassanein 2011:1).

3.3.4 The Elaboration Likelihood Model (ELM)

The original ELM was developed by Petty and Cacioppo in 1977. This model (see to figure 3.3 below) can be regarded as the precursor to theories attempting to explain how persuasive messages (communication) sent from the sender can either have a positive or negative impact (attitude) on the receiver. Messages are cognitively reflected on by the HCP at an intrapersonal level (Cottrell et al 2015:106).

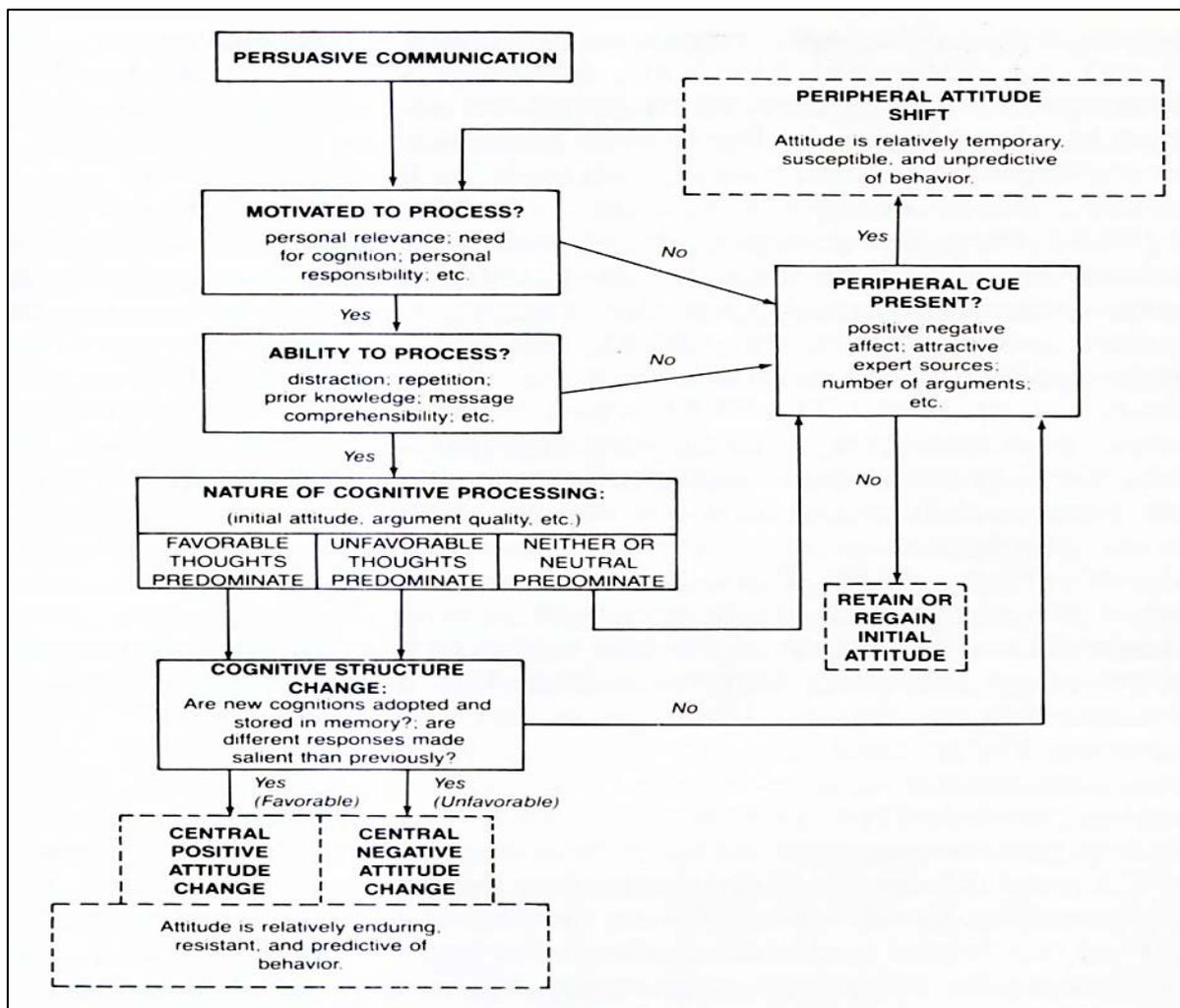


Figure 3.3: The ELM (Source: Petty & Cacioppo 1986:4; Petty & Cacioppo 1981)

The ELM is useful as a theoretical framework to understand how patients change their attitudes about their illness. Cottrell et al (2015:106) elaborate on this by emphasising that the recipients of the communicative message cognitively process the persuasive message they received and analyse it further, before choosing either a positive or a negative attitude towards change. The theoretical framework of the ELM fits perfectly into health-care communication research (even though it was developed from a social-psychological perspective), because it provides useful concepts relating to persuasive communication aimed at motivating patients towards effective understanding of their disease. This model is used in a health communication context for health behaviour change research (Cottrell et al 2015:105–106).

Research has indicated that health messages that are tailor-made to benefit individuals are far more effective in the health-care system, compared to messages

that are brand new and not already in the mental framework of the receiver, in this case the patient. A study conducted by Updegraff, Sherman, Luyster and Mann (2007:256) drew on the theoretical framework of the ELM to analyse “*the effects of message quality and congruency on perceptions of tailored health communications*”. Findings from the study clearly indicated that if a message is tailor-made for an individual and he or she sees the benefit, he or she will shift to elaboration likelihood and display a positive attitude change towards the cognitive message received. For effective health communication to occur, the HCP must address the concerns of the patient. This refers to the concerns the patient already has of diabetes, in the case of this study. If the HCP is effective in addressing the patient’s concerns, he or she can enable the patient to mentally elaborate on the messages he or she is being provided with and thus adhere to diabetic medication. The ELM is structured towards enabling a flow of information for therapeutic benefit in the case of the individual who receives the persuasive communication from the counsellor (HCP).

Other useful concepts in the ELM refer to *cognitive processing* where patients experience either favourable, unfavourable or neutral thoughts about the communication (information) provided (Petty & Cacioppo 1986:4), while *cognitive structure change* refers to patients developing either a central positive attitude change or a central negative attitude change (Petty & Cacioppo 1986:4). According to Petty and Cacioppo (1986:4–5), *attitude* can be defined as general “*evaluations*” or assumptions that pre-existed cognitively in individuals about life in general, *influence* “*refers to any change in these evaluations*”, and *persuasion* refers specifically “*to any change in attitudes that results from exposure to a communication*”. These concepts explain the tenets of the ELM and emphasise how effective communication can either favour positive or negative attitude change in human agents.

3.3.4.1 Two routes to attitude change: the central and peripheral routes

The ELM is constituted by two main routes to attitude change, namely the central and peripheral routes (see table 3.4 below). Both routes hold different end solutions for the recipient of the persuasive communication. Both routes either benefit long-term attitude change or not.

The route favoured for effective therapeutic communication that is beneficial to the patient in the case of the diabetes clinical setting, is the central route to attitude change. The central route to attitude change can be defined as a route that is favoured by the patient since he or she engages with that which the HCP has discussed or communicated to the person.

The communicator must facilitate a topic that is favoured by the patient for an effective long-term attitude shift to occur positively. If communication is not effective, then the opposite route to negative attitude change occurs, namely the peripheral route to attitude change. This route can be defined as a route where the patient is not able to be persuaded by the communicator and no mental cognition occurs, since no favourable or unfavourable thoughts occur in the mind of the person and no persuasion occurs. The message communicated is thus lost and no attitude change occurs. Persuasion is a vital component of this model: if the message is not communicated and mentally challenged in the recipient, persuasion is lost and attitude change does not occur for effective therapeutic care (Cottrell et al 2015:106–107).

Table 3.4: Summary of the differences between the central and peripheral routes to attitude change

Central route to attitude change	Peripheral route to attitude change
<ul style="list-style-type: none"> The topic (communication) is favourably processed 	<ul style="list-style-type: none"> The topic (communication) is unfavourably processed (<i>“attitude change is based on associations with positive or negative cues”</i>)
<ul style="list-style-type: none"> Persuasive communication occurs when the patient is able to process the logic behind the arguments put forward through the communication 	<ul style="list-style-type: none"> Persuasive communication is lost and attitude shifts back to the initial negative framework
<ul style="list-style-type: none"> Elaboration likelihood is high and is favoured in this route 	<ul style="list-style-type: none"> Elaboration likelihood is low and is less favoured in this route

(Source: Petty & Brinol 2012:232–235)

When a central route to attitude change occurs, elaboration likelihood is considered to be high or favoured, but when the peripheral route to attitude change occurs, elaboration likelihood is considered low. Elaboration likelihood as a concept refers to the amount of thoughtful attention that people are willing or able to invest in decision making about a particular behaviour. Diabetic patients need to be willing to invest in considerable decision making about their medication adherence and its effectiveness

in controlling their blood sugar levels, which will ensure healthy living (Cottrell et al 2015:107).

3.3.4.2 Central route processing: the role of persuasive communication

The first tenet of the ELM is persuasive communication, which is the beginning of the *process-oriented* approach which the individual enters. Communication is received from the HCP which is aimed at altering the individual patient's attitude positively towards behaviour change. Communication in this tenet refers to any type of communication, be it vocal or written communication. The intrapersonal (cognitive) context is elaborated and takes place through interpersonal communication.

Persuasive communication, according to the ELM, is aimed at altering a person's (patient's) attitude in order for him or her to see the benefit of the communication received and be persuaded to alter his or her attitude accordingly. It should also be noted that the patient will have a chance to speak to the HCP and air his or her views on the topic being discussed, since communication occurs at an interpersonal level between the parties (Heesacker & Shanbhag 2002:309). However, the argument is that this model is not fully focused towards patient-centred care; instead, communication flows mainly from the HCP and is aimed at persuading behaviour change in patients. The HCP tries to persuade the patient towards positive behaviour change, implying that the patient's perspective on his or her health-care is not of primary concern.

A study conducted by Lawton, Parry, Peel and Douglas (2005:1246) emphasised how diabetes is increasing morbidity and mortality rates globally. The study utilised qualitative research methods with participants who were newly diagnosed with Type 2 diabetes. The study yielded results that showed that patients are not fully confident in maintaining their diabetes when faced with different/unknown situations, owing to a lack of knowledge. The participants also emphasised that they required HCPs who were easily accessible and could address their concerns and answer any queries promptly. This study also noted that the limited time spent with HCPs caused a barrier to effective treatment. Thus specialist diabetic HCPs were needed, as opposed to general practitioners (GPs) found at hospitals.

3.3.4.3 Motivation to process the communication

In order for communication to be persuasive, patients must thoughtfully consider that which is communicated to them. This implies that the communication must be of *“personal relevance”* for them, in order for them to at least want to give some thought to change or alter their attitudes positively for long-term adherence.

The patient must be motivated towards a need for cognition, a process where he or she is mentally challenged to make an effort by thinking about and considering the communication received. The patient then needs to see benefits in it and want to alter his or her attitude positively (Petty & Wegener 1999:43). The HCP needs to motivate the patient into considering the knowledge or information provided. The patient needs motivation to want to consider the information provided as necessary to the benefit of treating his or her illness.

Here the HCP plays a vital role, since he or she needs to be able to consider the patient and motivate him or her accordingly. Parry, Peel, Douglas and Lawton (2006:105) clearly illustrate that communication from the HCP’s perspective is not always fully understood by the patient. Research has indicated that, even though patients are educated by the HCP on diabetes, they prefer to view the cause of their illness according to their own beliefs. HCPs cannot immediately alter the patient’s perceptions, but can use this as a method to guide the patient from his or her understanding of the illness to ensure that lifestyle changes occur for the treatment of the disease. Patients in general do not always want to take on the management of their illness – hence the HCP can support and guide them appropriately by informing them of the severity of diabetes and also of the implications of non-adherence to medication and failure to make the necessary lifestyle changes.

3.3.4.4 Ability to process the communication

In order for communication to be effective, it is not enough for a patient to be motivated to make sense of the communicated message. Instead, he or she should also be able to process and understand the communicated message for it to be effective in changing attitudes. Heesacker and Shanbhag (2002:312) add that *“several factors can alter a person’s ability to think about the topic and message,*

such as individual experiences, intelligence, distraction, and message comprehensibility". The individual must be able to decode and understand the message provided by the HCP. The message must therefore be communicated in simple, understandable language to the recipient.

For the purposes of this study, the HCP, when educating the patient about diabetes as an illness and about diabetic medication complications and side-effects, needs to communicate with the patient in comprehensible language and avoid medical jargon which may confuse him or her. The patient must be able to understand the topic discussed in order for attitudinal changes to occur. The HCP should take advantage of the two-way flow of information and engage the patient in the discussion to ensure that he or she understands what is being communicated to him or her. The HCP should ask the patient questions on the topic discussed to investigate the level of understanding on the patient's part. Marks et al (2005:273) indicate that HCPs need to use the information provided by the patient for early diagnosis and treatment. The patient is in the best position to communicate his or her physical and mental state to the HCP. Listening to the patient and communicating with him or her will ensure that communication is effective from both parties.

3.3.4.5 The nature of cognitive processing

Cognitive processing differs in different patients. The patient must be able to understand the communication received and be persuaded by it in order for him or her to be able to debate and form or create cognitive arguments with the communication. This will then enable the patient to create either more favourable thoughts than before or more unfavourable thoughts than before, and this choice will either create a positive attitude change or enable the patient to retain his or her initial attitude (Petty & Brinol 2012:231). This means that the theory posits that the individual patient must be able to understand the message first (interpersonally), in order to be able to actively engage with the topic and shift towards a positive attitude change.

3.3.4.6 Cognitive structure change

This tenet dictates that cognitive structural change must occur mentally in the patient in order for the change in attitude to be successful. If negative thoughts about the communication received are stored into memory, the patient will follow the peripheral attitude route and in the context of this study, treatment for diabetes will be ineffective (Petty & Brinol 2012: 229). The HCP must ensure that the message communicated is persuasive enough to allow the patient to cognitively store favourable thoughts in order for him or her to follow the central route towards a positive attitude change for diabetic health-care and treatment.

A point to note in the case of cognitive structure change is that patients are usually stressed out when they are diagnosed as being ill. The patient's mind frame therefore needs to be altered effectively to ensure that positive thoughts are stored mentally in order for a positive attitude change to occur. Anxiety is key, as anxious people are usually stressed. Stress, in turn, may lead to or exaggerate illness, and the HCP thus needs to motivate and persuade patients effectively towards long-term adherence (Marks et al 2005:255).

3.3.4.7 Enduring central positive or negative attitude change

A central positive attitude change results from a favourable understanding (by the patient) of the communication received from the HCP. The patient is effectively persuaded when favourable thoughts are stored in his or memory and thus an attitude change will take place. Behavioural change is thus positively influenced in the patient. Central negative attitude change occurs when the communication received cognitively creates negative thoughts in the patient and attitude and behavioural change is unfavourable (Cottrell et al 2015:107). When attitude change is positive, health-care for the diabetic patient will be favourable compared to negative attitude change, which will affect the patient's health-care negatively.

3.3.4.8 Peripheral route processing

This route results in an unfavourable, negative attitude change in an individual, which is not in the individual's best interest when related to the health situation he or she is faced with. If the patient is not motivated to see benefit in the message communicated to them by the HCP, he or she will retain his or her mental or cognitive state and develop a negative attitude towards the topic concerned (Petty & Brinol 2012:231–233). For example, if an HCP is educating a patient about the effectiveness of insulin injections to manage his or her diabetes, and the patient does not see the medical gain of the injection because of a fear of needles, for example, then a negative attitude will result from the persuasive communication received.

A different attitude change will occur in different patients because of their cognitive state. As discussed in the tenets above, if the patient does not understand or is not able to mentally process the knowledge provided by the HCP, he or she will not benefit from the message received, persuasion will not occur, elaboration likelihood will be low and the peripheral route will be followed. Thus negative attitude change will occur and the patient will not benefit from the medical treatment or advice provided by the HCP for effective diabetic treatment. Different factors affect attitude change in different patients, and these include *“individual experiences, intelligence, distraction, and message comprehensiveness,”* as discussed under the tenet of ability to process (Heesacker & Shanbhag 2002:312).

3.3.4.9 Peripheral attitude shift

This tenet explains that the patient will experience a temporary attitude change which will last for a short time. If the patient is not persuaded by the message sent from the HCP, the impact is lost and the patient will retain his or her initial attitude. The patient will not benefit much in this case because the therapeutic benefit will be lost, since elaboration likelihood will be low and a peripheral attitude shift will occur (Heesacker & Shanbhag 2002:317).

3.3.4.10 Retaining or regaining initial attitude

This tenet explains that no change occurs in the individual, and neither the central nor the peripheral route towards attitude change occurs in this case. The individual reverts to his or her initial way of thinking. The patient sees no benefit in altering his or her mental cognition in favour of the message provided. Behaviour change does not occur and the patient goes back to his or her initial way of thinking. According to Heesacker and Shanbhag (2002:317), the individual is likely to retain his or her initial attitude because of reasons such as not being motivated enough by the HCP and thus being unable to see the benefit of his or her behaviour change. Inability to store positive thoughts from the message received into his or her mental cognition results in the patient going back to his or her initial attitude/mindset. Research conducted by Redman (2001:161) clearly indicates that HCPs need to stress lifestyle change as a core goal. Managing diabetes involves a “*complex regimen*” and the patient requires assistance from family members to help survive the diabetes challenge. HCPs must alter patients’ perspectives for health-care education about diabetes to be effective.

3.3.5 Postulates of the ELM: persuasion for attitude change

The discussion below clearly explains the seven postulates of the ELM and indicates how behaviour and attitude change vary from person to person, depending on the individual’s mindset and the communication received which may create either a favourable or an unfavourable attitude towards treatment for the illness. The postulates further expand the meaning and interpretation of the ELM, clearly displaying how persuasive communication can either favour a positive or a negative attitude change in the individual. These postulates are included to emphasise the appropriateness of the ELM for aiming to alter a patient’s behaviour change positively in a medical setting for diabetic treatment adherence (Petty & Cacioppo 1986:5).

- **Postulate 1: underlying motivation.** Individuals can become subjective towards the attitudes they hold and according to Petty and Cacioppo (1986:6), “*there are a variety of standards people might use to determine*

which attitudes are correct for them". The HCP needs to emphasise positive matters for a favourable attitude change towards healthy living. The patient must want to change his or her subjectivity towards unfavourable foods for example, and their effect and negative contribution to ill-health in the case of diabetes.

- **Postulate 2: variations in elaboration.** Because all individuals are different, the effort to preserve an attitude differs from one person to the next. Here, the HCP forms the vital component in being able to study the patient and motivate him or her accordingly.
- **Postulate 3: how variables affect persuasion.** This postulate reiterates the idea of subjectiveness as evolving in the individual with regard to his or her choice of attitude change. An individual will award merit to communication he or she can understand and benefit from with regard to change. This emphasises the point of barriers such as language and cultural differences, which can negatively contribute to a patient's understanding of communication.
- **Postulates 4 and 5: relatively objective and relatively biased elaboration.** This postulate indicates that, if a person is motivated to receive a message or communication in an objective manner, he or she will do so. However, there is no guarantee that the truth will be found, and his or her subjectivity will be reduced if motivated effectively.

An individual will become biased when he or she processes a message that he or she is more familiar with, and thus will support the opposite attitude change he or she is more familiar with. Familiarity contributes to bias in the message received.

- **Postulate 6: elaboration versus peripheral cues.** When the situation at hand favours high elaboration likelihood, individuals analyse the message with either objectivity or bias, However, this postulate shows that *"following the central route to persuasion requires both motivation and the ability to elaborate a message"* (Petty & Cacioppo 1986:20). Individuals need to be motivated in order to attain high elaboration likelihood and follow the central route to attitude change. If they are motivated effectively and have the ability

to process the message received, they can follow the central route to attitude change. However, if the individual experiences low levels of motivation and is not able to process the message effectively, peripheral cues become important determinants of persuasion (Petty & Cacioppo 1986:20). Thus motivation is required to avoid bias and for objectivity with regard to the message received. Peripheral cues have the ability to either positively or negatively contribute to persuasion in the individual.

- **Postulate 7: consequences of elaboration.** Petty and Cacioppo (1986:22) state the following:

“[T]he greater organization and accessibility of attitudes and attitude-relevant information for persuasion occurring via the central than the peripheral route render people more able to report the same attitude over time, to defend their beliefs, and to act on them.”

3.3.5.1 Similarities and differences between the ELM and the Heuristic-Systematic (HSM)

The HSM is a persuasion-oriented model like the ELM, which aims at altering the cognitive thinking of individuals favourably in a given context (Chen, Duckworth & Chaiken 1999). Information is processed in a systematic manner in both of these models. However, both cater for a positive (favourable) and negative (unfavourable) attitude change in the individual. As explained above, the ELM caters for two routes to attitude change, namely the central and peripheral routes, while the HSM caters for the systematic processing and heuristic processing routes. Chen et al (1999:44) indicate that heuristics refer to information or knowledge which is pre-existent in individuals. People tend to refer to their mental pre-existent knowledge before making judgements or decisions – for example, for the purposes of this study, a patient may utilise his or her pre-existent heuristic knowledge of “the doctor knows best” in the case of diabetic diagnosis and treatment. Systematic processing is a route where an individual will analyse the message provided in depth before deciding on the judgement he or she wishes to create cognitively. Chen and Chaiken (1999:74) add that “*systematic processing entails a relatively analytic and comprehensive treatment of judgement-relevant information*”. The individual creates

judgements from the message received in a systematic manner. Both these routes entail judgements being created from the context provided.

The ELM and the HSM are similar yet different in many ways. Chen and Chaiken (1999:81) outline a few of these similarities and differences. With regard to similarities, firstly, the central route of the ELM is almost similar to the systematic route of the HSM. Secondly, both these routes require sufficient persuasive motivation from the message received before a favourable attitude shift can occur. Thirdly, both models indicate that individuals will remain subject to their own attitudes, unless they are persuaded to do otherwise. Finally, both models are persuasion-oriented and motivation is required for a favourable attitude route.

The models differ in the following ways. Firstly, the dual processing modes are exclusive to each model. Chen and Chaiken (1999:81) argue that the ELM relies mainly on accuracy for either positive or negative elaboration likelihood to occur. This is incorrect, because other factors in the model can affect the route of persuasion, while the HSM does not rely on specific motivational assumptions.

“The ELM assumes that as motivation, ability for argument scrutiny, or both increase, peripheral mechanisms become less important determinants of attitude judgement. In contrast, the heuristic-systematic model explicitly assumes that its two modes may co-occur and that both heuristic and systematic processing can have an impact on judgement when motivation and ability for argument scrutiny are high” (Chen & Chaiken 1999:81).

Secondly, motivation differs in both models. The HSM focuses on judgement for attitude change to occur, which is not the case in the ELM.

3.3.6 The Trans-theoretical Model (TTM) or the Stages of Change Model

The TTM was developed by the theorists, Prochaska and DiClemente (1984). It was created to display how behaviour change occurs in individuals because of a problem in a given context. The model provides different stages that individuals go through or experience when they enter a treatment process (Prochaska, Redding & Evers 2008; Sharma & Romas 2012:98). Individuals, who for the purpose of this study refer to

patients, are taken through various stages aimed at altering their attitude and behaviour positively for healthy living and treatment adherence to diabetic medication. The TTM has been implemented in health communication research since it is an appropriate behaviour change treatment model (Cottrell et al 2015:109; Sharma & Romas 2012:97–98).

3.3.6.1 Background to the TTM/departure from the ELM

This model is an appropriate follow-up model to the ELM, since like the ELM it also deals with altering behaviour in a patient for diagnosis and treatment adherence. The ELM postulates that either a favourable or an unfavourable attitude change occurs in the patient, while the TTM takes the patient through different stages for attitude and behaviour change to occur. The ELM emphasises different routes that a patient can choose (central or peripheral routes), while the TTM elaborates on the stages the patient can go through before he or she accepts his or her diabetic diagnosis, realises the seriousness of the disease and makes a commitment to adhere to medication on a full-time, long-term basis (Prochaska et al 2008).

The TTM comprises six stages, namely *pre-contemplation*, *contemplation*, *action*, *maintenance*, *relapse* and *termination*. When applying this model to a patient's medical treatment process, each stage contains experiences which the patient may encounter during the treatment process. It can also represent the different stages the medical provider can follow to assist the patient, from diagnosis to treatment, and then to treatment adherence (Prochaska et al 2008:98; Cottrell et al 2015:110).

In the pre-contemplation stage, patients might be unaware of their medical diagnosis but afraid to confront their problem or issue. In addition, patients in this phase are usually defensive about their condition and may even be in denial about it. At this stage the patient may feel that he or she is not in need of the medical consultation and feel as if he or she is being forced to confront the problem at hand, because cognitively he or she does not see it as a problem. If the patient remains in this stage it is problematic because he or she is in a denial phase. In this stage, the person does not want to be probed for further interest and education on his or her health condition, and this can be problematic in the case of a diabetic patient, because

early diagnosis and treatment are vital for long-term effective health-care. The HCP plays a role at this stage because he or she needs to motivate the patient for change and to persuade the patient to acknowledge that he or she is ill and in need of treatment and care. This stage is a difficult one but a vital one, because motivation to change is required at this stage. The HCP must thoroughly motivate the patient to accept the reality of his or her illness (Prochaska & DiClemente 1984:24–25; Sharma & Romas 2012:98).

In the contemplation stage, the patient becomes aware that a problem exists and that he or she requires help. According to Prochaska and DiClemente (1984:27), at this stage *“they are struggling to understand the problem, its causes, and its cures; to determine what went wrong; and how they might regain control of their lives”*. Usually, patients also seek reassurance at this stage and this can be linked to the provider-patient reassurance in relationship building.

At this stage, the patient admits to needing help and is stressed because he or she has come to a realisation that a problem exists and something needs to be done about the problem. Moreover, the patient is consulting with informative sources to become more educated on the problem, but is still not fully dedicated to commit to change. The HCP plays a key role at this stage, because the patient is admitting to a problem and wants to take some action (Sharma & Romas 2012:98).

The patient at this stage has accepted his or her diagnosis of diabetes and now needs to become educated on the severity of the illness and the healthy lifestyle he or she needs to commit to. This knowledge and information can be obtained from the HCP. The patient at this stage needs to be informed by the HCP through effective communication on diabetes as an illness. The patient needs motivation from the HCP to overcome and address the problem. The HCP must motivate the patient to move out of this stage to the next. If motivation is not adequately provided by the HCP, the patient can remain at this stage for years, which can become problematic for the HCP since the patient’s health-care will be negatively affected.

This stage has a positive link to the HCP-patient relationship for diabetic health-care since the HCP needs to work with the patient and motivate him or her to implement behaviour change. The patient comes to self-realisation and thus the HCP must take advantage of a patient’s existing cognitive frame of mind and use this to his or her

advantage by allowing the patient to see the necessity for diabetic treatment. This also ties in with the other models that will be discussed later on in this chapter. The HCP and the patient must create a developmental framework to work together, to the benefit of the patient.

In the action stage, the patient is motivated to act and has altered his or her lifestyle accordingly. Behaviour change has improved in the last six months (on average) for the individual. However, the patient is extremely confident and assumes that the therapist (HCP) needs to focus on action and not focus on the origin of the problem. Patients feel that they are highly aware of their problem and should no longer focus on the issues discussed in the contemplation stage. Patients also feel that they have sufficient knowledge on their illness, even though this might not be true and they feel confident that the change has occurred. This stage is the shortest stage of the process, but is the most progressive stage of the model and a favourable behaviour change occurs at this stage (Prochaska & DiClemente 1984:28; Gurung 2006:187). HCPs need to persuade patients to keep up the action and maintain their adherence to their diabetic medication and also to their healthy lifestyle changes, such as healthy eating, and exercising regularly will also actively contribute to patients' health.

In the maintenance stage, patients work towards maintaining that which they achieved during the action stage. The patient here will persevere to prevent any relapses. According to Prochaska and DiClemente (1984:28), "*maintenance is thus not an absence of change but a continuance of change*". At this stage, change continues to occur but the patient must not be afraid to continue with the change because of the fear of relapse. Patients are not as active as they were in the action stage above and at this stage they are working towards maintaining their behaviour change and aiming to avoid relapse. Some patients remain at this stage for long periods of time because of the fear of relapse. However, relapse can occur in patients as a result of temptations from previous lifestyles. Diabetic patients need to be persuaded to maintain their treatment adherence for their health benefit and long-term organ protection and the avoidance of amputation of limbs, for example. HCPs need to communicate to the patient the positive effects of their treatment adherence. Research has indicated that patients have great difficulty in maintaining lifestyle changes for diabetic medical conditions. Diabetes is a complex medical condition

which requires motivation and clear communication from HCPs in order to sustain health (Parry et al 2006:97).

When patients can no longer maintain their treatment adherence, the relapse stage occurs. At this stage, patients who have failed treatment adherence and the necessary behaviour change will move back into the contemplation stage.

The relapse stage *“can have a profound psychological impact on the course of change in addition to the re-emergence of the problem behaviour”* (Prochaska & DiClemente 1984:29). When a patient relapses, he or she can go back to his or her initial living patterns and this can be dangerous for a person diagnosed with diabetes and the relapse can impact severely on his or her health. Before a patient is diagnosed with diabetes, he or she undergoes several blood tests to confirm his or her diagnosis and he or she is also started with entrance level medication, depending on insulin and glucose levels as interpreted from the blood tests. If a patient relapses on diabetic treatment, he or she will need to re-start the entire treatment process from the very beginning, before new medication can be provided to him or her by the HCP. Diabetes is on the increase in South Africa and globally, as indicated in chapter 2. It is a disease that does not display its harshness on internal organs in the early stages of the illness, yet without early treatment it tends to destroy patients' internal organs, which may ultimately lead to death without consistent treatment adherence.

Relapse can affect the patient negatively on an emotional, physical as well as a psychological level. Patients will be disappointed in the relapse stage and they might even develop a negative attitude towards treatment as a whole because of the relapse. However, the HCP needs to reiterate the importance of behaviour change to the patient and persuade him or her to change his or her attitude and return for diagnosis and treatment.

The termination stage occurs when the problem is no longer a problem and the patient feels no temptation to become non-adherent to his or her medication (Prochaska & DiClemente 1984:29; Cottrell et al 2015:110). In the termination stage, the patient is no longer afraid to relapse and the individual has altered his or her lifestyle accordingly. Throughout this behaviour change process, the patient could have become attached to the HCP and thus communication is still favoured to occur

between the two parties for follow-up sessions. Even if these sessions are not that regular, they should maintain contact to ensure that treatment adherence still occurs. If the patient foresees compliance issues, he or she should consult with the HCP for a session immediately, to ensure that no relapse occurs and maintenance is restored. In the case of a clinical setting, HCP-patient contact and interactive communication are vital for disease control. According to Bartz (1999:5), misunderstanding and distrust are barriers to effective treatment relationships between HCPs and patients. If a patient trusts his or her HCP, he or she will become attached to the HCP, and follow-up sessions and causal consultations for follow-up visits will be easier on the patient from a social perspective.

In the next section, the ten processes of change of the TTM are discussed. According to Prochaska and DiClemente (1984:33), *“the processes of change, then, represent a middle-level of abstraction between a complete theory or system of psychotherapy and the techniques proposed by the theory.”* The processes of change emphasise the different coping strategies that a person would engage in to address a particular type of problem. The ten processes listed below were used as a starting point to test the TTM. However, it should be noted that additional processes emerged from different studies to add to the existing list. HCPs are meant to cognitively assist the patient by enabling him or her to fit into the different stages as he or she sees fit, and in this way the patient will be able to move forward within the stages of change and thus successfully advance in disease acceptance and treatment adherence for diabetes.

3.3.6.2 The ten-stage processes of trans-theoretical therapy

The processes of change are aimed at catering for the individual patient in trying to assist him or her to advance through the stages of change with his or her illness and alter his or her behaviour accordingly. Procheska and DiClemente (1984:36) argue that the ten processes of change were developed to assist therapists to integrate appropriate individual processes as necessary in the case of individual patients. HCPs are supposed to utilise these ten processes and integrate them appropriately in each individual's health situation. The ten stages include consciousness raising, self-re-evaluation, social re-evaluation, self-liberation, social liberation, counter-

conditioning, stimulus control, contingency management, dramatic relief and helping relationships. In the next section each process is explained and integrated with the focus of this study, which is diagnosis acceptance and treatment adherence in the case of diabetic patients.

3.3.6.3 The consciousness-raising phase

According to this process of change, a patient must become aware or conscious of what is occurring in his or her individual case. This process emphasises that as human beings we tend to avoid viewing our own problems or behaviour patterns as being problematic, and only when we are exposed to our behaviour in certain instances our consciousness of ourselves is raised. Thus in a medical setting HCPs can engage with patients by providing them with feedback on their behaviour patterns and clearly explain how they have caused further damage to their diabetes condition. The HCP needs to educate and interact with patients on their health situation, their lifestyle and how this is further harming their bodies. This process emphasises how the HCP can inform a patient through education about diabetes as an illness, its causes, effects and treatment options for healthy living (Prochaska et al 2002:103).

In the case of diabetic patients, HCPs can use informative brochures to educate the patient and show him/her what a healthy diabetic patient would look like, in comparison to an unhealthy patient. Interactive communication between the two parties can assist in raising a patient's consciousness about his/her current health condition. Diabetic patients are usually affected by many stimuli when they enter the health-care system. Examples include the physical, psychological and even emotional factors that can affect their health-care and treatment for the diagnosed illness. The HCP can help patients confront these factors through the treatment sessions. Peyrot et al (2005:1379) elaborate the point above, indicating that psychosocial factors affect diabetes management and patients have psychological problems that affect treatment adherence and care. Treatment adherence, exercise and diet are usually negatively affected because of patients' psychological status.

3.3.6.4 The self-re-evaluation phase

This process of change indicates that the individual patient re-evaluates himself or herself and realises that he or she has some sort of problem. Patients also realise that their life would be better without this problem. When this process of change is linked to diabetic patients they can re-evaluate their health condition before their diagnosis in comparison to after the diagnosis. They can also see the pros and cons of medication adherence in enabling them to be able to live life as normally as they did before their diabetic diagnosis. In this way they can be motivated by the HCP to want to adhere to their treatment. In this tenet, patients want to make rational decisions about their problem in order to move forward with a solution (Prochaska & DiClemente 1984:38).

3.3.6.5 The social re-evaluation phase

Social re-evaluation entails that patients become aware and assess the impact that a problem has on society or other people and not only on themselves. They realise that their behaviour is or can be impacting on others around them (Prochaska & DiClemente 1984:38). Socially, this tenet is valuable since the patient is now aware that his or her health-care problem is not his or her own, but rather affects society and others. In other words, the concerns of the individual social agent are amplified because of their impact on and relation to the concerns of others and of the system. Shilling (2002:623) elaborates the notion of the “sick role” from the theorist Parson’s perspective: Sicknes is considered to be a loss to society since illness contributes negatively towards the social system. Systems become dysfunctional when a person is ill. Shilling (2002) analyses Parson’s notion of the “sick role” and its link to cultural understanding of sickness. This discussion, when viewed sociologically, posits how illness cannot be viewed in isolation as pertaining to the individual only; instead, the person forms part of society and thus social consequences occur with illness. According to Twaddle (1969:106), *“illness was conceptualized as a matter of social definition which varyingly reflects cultural and individual differences in orientations toward the biological organism”*. Social structures ensure that the human agent is socially affected when diagnosed with an illness. Parson’s (Twaddle 1969:105) discussion of the “sick role” in relation to society can be summarised as follows:

Owing to illness, a person is unable to perform his or her social responsibilities. A person is unable to revert to good health upon his or her wish and rather it is known that a sick person needs to be taken care of. Being ill is not a desirable situation to be placed in, and an individual would want to get well. Finally, the person would feel obligated to seek help and needs to comply with treatment to improve his or her health condition. The idea of “others” being affected can refer to the patient’s family members, since the health concern of the patient will now become a concern of his or her next of kin.

Mayosi et al (2009:9) posit that the South African medical care system is negatively affected by non-communicable diseases and diabetes forms part of this increasing concern. The health-care system is overburdened by the increase in treatment and care for these diseases. Poverty, which is rife in South Africa, contributes to the increase of these illnesses and this is highly visible in rural areas, where the aged and the sick are often left, without any care and treatment for diabetes, among other diseases. According to Mathee, Harpham, Swart, Naidoo, de Wet, Becker (2009), health and illness can be linked to socioeconomic factors in South Africa. Poor living conditions further contribute to disease and illness since they impact negatively on people’s health and therefore increase the burden of disease. Society is negatively affected by the health-care system that this country has, and limited resources further contribute to the burden on society (as discussed in chapter 2).

Freidson (2008:273) suggests that a key factor in illness management is for the HCP to perform his or her job in providing treatment for the patient. The health-care system is similar to a business where the patient is not in all cases treated as an individual but as a customer receiving service. Freidson (2008:273) further elaborates that staff who are employed at a hospital control patients’ “well-being” while they are based within the hospital. These staff members tend to isolate the patient from society and his or her family. HCPs do not always provide detailed information about the patient’s well-being to the patient or family members. The medical system holds control over the patient’s treatment and care. In most medical settings the patient is usually ignorant about his or her medical diagnosis and treatment process.

3.3.6.6 The self-liberation phase

Self-liberation entails a patient's ability to choose. This, however, is dependent upon the patient becoming aware of the fact that a variety of options exist and he or she has the power and potential to enable his or her chosen behaviour to succeed (Prochaska & DiClemente 1984:39–40). HCPs need to inform patients about behaviour choice options that are available for diabetic treatment in the health-care system. HCPs need to educate diabetic patients via counselling about the long-term effects of non-adherence to medication on their health.

Mshunqane, Stewart and Rothberg (2012:1) conducted a qualitative study to understand patients' knowledge of diabetes as well as HCPs' perceptions of patient management of Type 2 diabetes in South Africa. The results showed that patients attending public health-care facilities in South Africa were usually from disadvantaged backgrounds. This complicated the management of diabetes through diet change, since many patients were unable to afford the foodstuffs needed to control their blood sugar levels effectively. The study found that greater health communication was needed and that the HCP needed to focus on the actual patient, instead of only wanting to manage the diabetic disease. Patients needed to be educated on self-control and quality of life by the HCP, as opposed to only focusing on curing the disease. *“Successful chronic disease management is dependent on effective, systematic and interactive communication between patients and service providers as well as the health system with which they make contact”* (Mshunqane et al 2012:3). HCPs emphasised that patients need to be educated on diabetes as a chronic illness, with the emphasis placed on the fact that diabetes can be treated and not cured. Patients also needed support to cope with their illness on a psychological level. This study also indicated that the limited time spent with HCPs could disadvantage patients, since they are unable to ask many questions and do not feel adequately treated.

3.3.6.7 The social liberation phase

This phase works in close range to the process of change discussed above. Social liberation is also linked to the patient's ability to choose, but the focus in this process

is linked to the patient's environment. This process is focused on more choice being available to minority groups who were previously disregarded or disadvantaged because they are not favoured by all of society (Prochaska & DiClemente 1984:102). An example of this could be patients who are stigmatised individuals and are oppressed by social conditions because of their health condition. Sick people should also be treated as normal people (healthy people), with equality and fairness in all circumstances. Patients who are diagnosed with diabetes should not be treated unequally because of their health condition, but they should also be liberated socially and have equal opportunities. Patient empowerment must occur and HCPs are the people in a position to empower patients who are diagnosed as diabetic. Diabetes is a disease that is on the increase, and diabetics should receive health-care priority as a social condition, as is the case with HIV and AIDS or cancer patients, in public access to treatment and care (Prochaska et al 2002:104).

Thorne and Paterson (1998:173) indicate that patient empowerment needs to occur in the medical system and a chronic illness should not be seen as a burden but as part of a human being's life. Thorne and Paterson (1998:173) analysed the "insider perspective" where patients must empower themselves to want to live long and healthy lives, by managing their illness. The "insider perspective" emphasises that over time the patient has moved out of this patient role into a partner role in the management of his or her own health-care. *"Early conceptualisations of individuals with chronic illness shift from a focus on loss and burden towards images of health within wellness, transformation, and normality"* (Thorne & Paterson 1998:173).

3.3.6.8 The phase of counter-conditioning

Counter-conditioning is a process that can motivate patients to change negative behaviour experiences into positive behaviour to their own benefit. Stimulus can affect a patient in either a positive or a negative manner, but if the patient alters his or her behaviour for the better, he or she can counter-condition the experience and enable a favourable condition to occur. Different techniques can be used by the patient to change behaviour positively. A diabetic patient can learn to control his or her sugar levels and, for example, if his or her blood sugar levels are drastically reduced, he or she can counteract this negative feeling by consuming a sweet.

Patients can also be educated on simple exercises they can engage in to counteract their diabetic condition, such as taking morning walks to help control their blood sugar levels. Patients can engage in a healthy lifestyle to counteract their medical condition (Prochaska et al 2002:103).

3.3.6.9 Stimulus control

Stimuli that remind or contribute to unhealthy behaviour must be removed and replaced with reminders that permit healthy behaviour. For example, in the case of a diabetic patient, the patient can discard all foodstuffs high in sugar content and replace these with vegetables or other appropriate foodstuffs (Prochaska & DiClemente 1984:41). Patients can engage in regular exercise, eat healthy foods and monitor their blood sugar levels within appropriate intervals to ensure that they are maintaining their health. HCPs can motivate patients' family members to empower them by helping them remove unhealthy barriers to effective care and treatment for their illness, as opposed to allowing them to view stimuli that can affect their adherence to medication negatively. Patients can also be negatively affected by society where they can feel different or socially unacceptable if they do not engage in social situations owing to their health condition.

This process of change is linked to the social liberation process discussed above. Patients should not be made to feel socially unacceptable because of their health condition – instead, their health should be their priority and they should be empowered in this manner. Social systems should be put in place to support diabetic patients. This is linked to the TRA/TPB, which emphasises that “significant others” such as family members need to be brought in from the social sector to assist patients with maintaining treatment adherence. Family members need to work with patients and support them appropriately. Society needs to be educated on diabetes and should learn not to stigmatise diabetic patients wishing to adhere to treatment and live healthy lives. Patients must not be made to feel isolated at social functions because of their diet being different to that of other people who are not diabetic. Patients must not struggle to adopt behaviour patterns that may make them appear to be different and they should rather be accepted and tolerated. Family members and friends must become educated and knowledgeable about diabetes, and thus

alter environments to produce stimuli that support diabetic patients and avoid negative health implications for them (Prochaska et al 2002:104).

3.3.6.10 Contingency management

The TTM emphasises that a patient can change behaviour gradually through the different stages that he or she encounters in the model. The theory states that behaviour change will occur with the help of the HCP. Patients must be motivated substantially to see the benefit of change for themselves as well as for society. This process of change emphasises that negative behaviour patterns can be altered through contingency management, meaning that patients must alter their behaviour change naturally in order for healthy habits to be maintained.

According to Carroll et al (2001:1), contingency management is a behavioural therapy that can be used to address non-compliance in patients. Given the context of the medical situation, HCPs can address contingency management accordingly. The HCP can motivate and reward patients' adherence to medication positively. Patients in the health-care system may also feel the need for a reward system for their adherence to diabetic medication. A technique of reward can be in the form of praise from the HCP which might positively motivate them for further treatment adherence. This process of change entails that patients alter troubled behaviour by developing contingency management behaviour patterns for their own benefit (Prochaska et al 2002:104).

3.3.6.11 Dramatic relief

This phase is dependent on the patient learning through observing, for example, what happens to other patients who are adherent or non-adherent to treatment. HCPs can aim to use a case study method to help patients who are diagnosed as diabetic to shed some light on the seriousness of their health condition. HCPs can narrate real-life situations of cases where patients were adherent to medication compared to cases where patients' were non-adherent, and display the effect that non-compliance with treatment could have on an individual in the long term. If patients can see the emotion involved in the devastating effects that non-adherence

to medication can have on a diabetic patient, they may be motivated to change their behaviour accordingly. In the clinical setting, HCPs can discuss diabetic patients who are living healthy lives with patients who are newly diagnosed with diabetes. Patients need to become aware of similar environmental situations to be awakened to the positive behaviour change that is needed for long-term healthy living (Prochaska & DiClemente 1984:43).

3.3.6.12 Helping relationships

In this process of change, the patient and the HCP must have a workable relationship. The patient must trust and feel cared for by the HCP in order for the treatment therapy to be effective. The HCP must be the stronger person in the relationship and be competent to help the patient (Prochaska & DiClemente 1984:43).

This process of change involves the notion of interactive health communication between the HCP and patient relationship which needs to be a two-way relationship filtered by trust and care for the improved health condition of the patient (interpersonal health communication will be elaborated on in chapter 4). The HCP is in the best position to alter a patient's behaviour positively for diabetes. The HCP needs to be in charge of the treatment process but also include the opinion of the patient, since the patient is the person living with the illness. Together with the knowledge of the HCP and the symptoms of the patient, suitable treatment plans can be developed for the patient. This idea of collaboratively working towards the benefit of the patient is well expressed in the models that will be discussed in the next chapter, namely the HCP-Patient Relationship Model as well as the Disease-Illness Model among other interpersonal theories of health communication.

Patients need to be supported by HCPs, "significant others" which include, their families, friends and larger social systems such as the public health-care system, where all diabetic patients should be afforded access to treatment. In South Africa, access to treatment is a concern because of the high poverty rates. The public health-care system needs to overcome these barriers and provide access at all costs. This process of change is linked to the proposed conceptual framework for extra support services to help patients cope with their illness. South Africa is a

developing country and the costs of treatment and services are high. Levitt et al (1999:946) suggest that, with the increased rates of diabetic illnesses being diagnosed in South Africa, death rates have increased too, and the costs of health-care service delivery have also drastically increased over the years (as explained in chapter 2). Treatment team members can be seen as social contributors to the patient's well-being for medical care and treatment adherence. They need to motivate patients positively to maintain behaviour changes, which are beneficial for healthy living. An individual cannot work alone to improve his or her own health-care. Support is needed from external bodies, family members, friends and, most importantly, HCPs.

Social support is needed by patients to overcome stress and feel empowered to maintain their health. Social support also provides a feeling of belonging to and being part of society. This may help patients to reduce feelings of isolation. Support also helps patients cope emotionally with their diagnosis. Moreover, social support may contribute to patients' self-esteem by allowing them to perceive themselves as part of society. Support can also steer patients in the direction of treatment adherence since family members can help them maintain their diet and exercise routine (Freund & McGuire 1991:122–123).

The TTM emphasises a therapeutic relationship which is vital for effective behaviour change towards appropriate health-care and treatment adherence. Helping relationships are important for improved and motivated health-care in patients, and support is needed from different sources to maintain health-care. This clearly explains how intrapersonal communication is influenced by this external variable (social support) which exists in the environment and takes place through interpersonal communication.

3.3.6.13 The constructs of decisional balance and self-efficacy in the TTM

The notion of decisional balance as used in the TTM refers to the understanding that an individual weighs up the pros and cons of adopting new behaviour. The patient in this case will view the benefits of changing as well as the cost of changing (Prochaska et al 2008:99). Positive behaviour change is viewed as a benefit to change. However, the cost of this change will be viewed as a negative for the

patient. The HCP can play a key role in motivating the patient to see more benefit than cost in changing. HCPs must display to patients what healthy diabetic patients can achieve with treatment adherence, as opposed to non-adherence.

This construct is linked to the ELM and the two routes to attitude change that a patient will encounter before behaviour change can be achieved. The decision lies with the patient, but he or she needs motivation from the HCP and from his or her significant other(s) to be able to see benefits in the treatment and care being offered for long-term health. The patient must be motivated to alter his or her behaviour accordingly.

Patients need to be self-efficient when faced with challenging situations. Self-efficacy as a construct refers to patients coping with risky situations and not being tempted to alter their behaviour negatively. Patients need to be able to overcome temptations when faced with challenging situations. This construct holds that patients must be able to cope with tempting situations and not relapse into these situations, so that the healthy behaviour change remains. A patient must be confident to overcome a tempting situation and not relapse (Prochaska et al 2008:99, 102).

3.3.7 The Precaution Adoption Process Model (PAPM)

The PAPM was developed circa 1992 (an updated version from the original developed in 1988) by Weinstein and Sandman (2008) and is similar to the TTM discussed above since both models are stage models. However, they are applied differently. This model includes seven stages a person goes through from being unaware towards maintaining action with regard to behaviour change for specific elements (Gurung 2006:189). The PAPM is used to introduce an adoption towards new precaution or abandoning a risky behaviour such as avoiding foods with high sugar content. This model, unlike the TTM, does not make provision for gradual development of behaviour change patterns. Table 3.5 indicates the seven stages of the PAPM.

Table 3.5: The seven stages of the PAPM

Stage	Explanation of the theoretical constructs	Application to diabetes as an illness
Stage 1: unaware of the issue	Individuals are unaware of the issue or medical behaviour.	Levels of undiagnosed diabetes are higher in African countries as compared to diagnosed diabetes. In this stage, patients are totally unaware of the medical condition. However, if some information is given (example, when the individual learns something about the illness) they are no longer unaware of it)
Stage 2: unengaged by issue	Individuals are aware of the illness but they are unengaged.	Even though patients are aware of the situation (medical issue) they are unengaged by it. Thus patients continue to live the way they do.
Stage 3: undecided about acting	Individuals are undecided about acting at this stage. However, they are considering if they should act or not. At this stage, individuals either remain in this stage, or they decide to act and therefore move to the next stage; or they refuse to act and move to stage 5.	In the case of diabetes, individuals can relate to some of the symptoms they are experiencing (relating to the risky behaviour that they are engaging in). However, they are still contemplating either acting or seeking medical assistance or not (and ignoring the symptoms).
Stage 4: decide not to act	After stage 3, if individuals decide not to act they move to this stage.	If patients do not want to seek medical care for controlling this risky behaviour they come to this stage and do not take any further action.

Stage	Explanation of the theoretical constructs	Application to diabetes as an illness
Stage 5: decide to act	After stage 3, individuals who contemplate action and decide to implement behaviour change enter this stage.	Patients who realise the importance of seeking treatment enter stage 5 and thus enter the health-care system.
Stage 6: acting	Behaviour initiating occurs in this stage.	The patient seeks medical care and is in the process of being treated.
Stage 7: maintenance	Individuals maintain their illness at this stage.	The patient seeks medical care and maintains treatment adherence. However, it should be noted that this decision-making process is not applicable to all decision-making processes such as if immunisation is only required once in a life time.

(Source: Gurung 2006:189; Weinstein & Sandman 2002:125; Cottrell et al 2015:110-111)

3.3.8 The Information-Motivation-Behavioural Skills Model (IMB)

This model was developed by Fisher and Fisher in 1992 specifically for HIV/AIDS prevention. Owing to the appropriateness of this theoretical foundation in practical implementation of AIDS prevention programmes, the model was used in other risk reduction behaviours. Cottrell et al (2015:107) explain that *“according to this model, the constructs of information, motivation, and behavioural skills are the fundamental determinants of preventative behavior”*. Like most of the models discussed in this chapter, the IMB is also cognitively inclined towards behaviour change. Individuals need to be provided with relevant information which is enticing towards the situation or condition at hand and can therefore guide them towards personal preventive behaviours (Cottrell et al 2015:107). Preventive behaviour change can either be implemented or not, meaning that even though individuals are aware of health issues or health risks, they can still choose to be demotivated towards behaviour change.

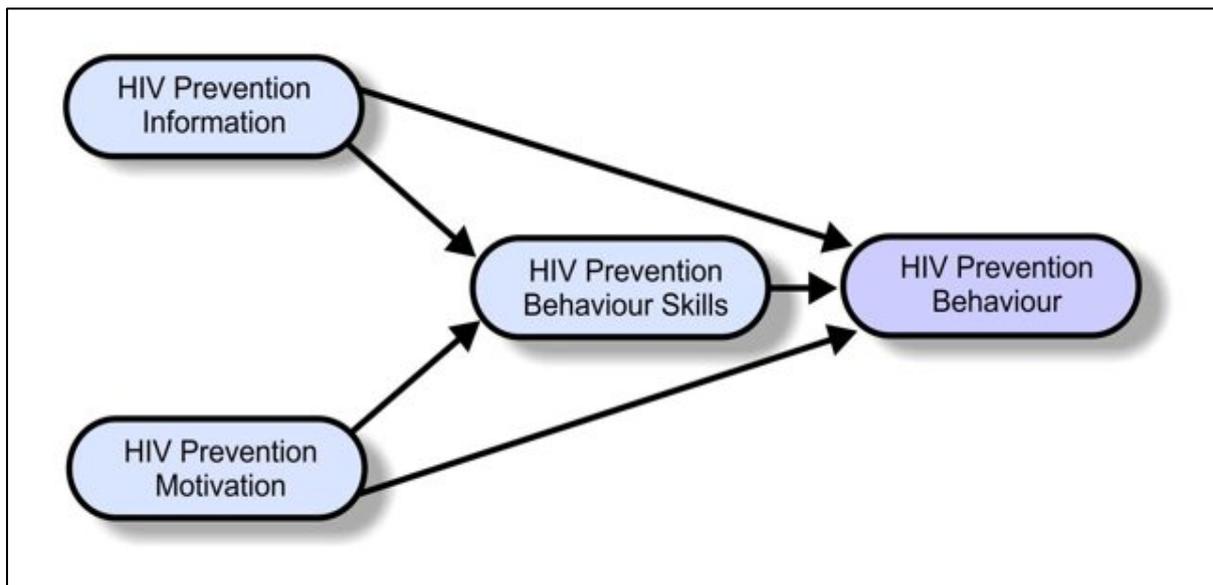


Figure 3.4: The IMB (Source: Fisher & Fisher, 1992:465)

According to the IMB, two types of motivation exist, namely personal and social motivation. Personal motivation refers to the individual at an intrapersonal level, while social motivation refers to the inclusion of social support towards implementing behaviour change. Behavioural skills are another important construct of this model: “[T]he IMB model also indicates that people must possess behavioural skills to engage in preventative behavior. The behavioural skills component of the IMB model includes an individual’s objective ability and his or her perceived self-efficacy to perform the preventative behavior” (Cottrell et al 2015:107).

Osborn and Egede (2010:49) conducted a study where the IMB was implemented in diabetes self-care (DSC) for behaviour change activities relating to the illness. The reason for making use of this particular model in relation to self-care was because of the validation of the IMB being a comprehensive health behaviour change framework. The IMB dictates that in order to perform a specific health-related behaviour, a person needs to be informed or aware of the behaviour (for example, a patient is required to display a positive attitude towards the behaviour). In the case of Osborn and Egede (2012:50), *information* referred to diabetes knowledge and *motivation* referred to personal attitudes and social support. Osborn and Egede (2010:53) concluded that these three factor are crucial in positively motivating

patients to implement diabetes self-care (i.e. positively altering behaviour change towards diabetes self-management).

Gavgani, Poursharifi and Aliasgarzadeh (2010:1868) conducted a study where the IMB was also used in relation to diabetes self-care. This research indicated that diabetes is a chronic illness where patients can easily become despondent and develop beliefs that they are not able to implement and maintain behaviour change. This study concluded that individual patients need to be catered for in the medical system (patient-centred care) for an illness such as diabetes:

“[T]herefore increasing motivation and teaching behavioral skills according to their individual life styles, are extremely beneficial for these patients. IMB model can be an appropriate method for improving the self-care behaviors in patients suffering from type 2 diabetes” (Gavgani et al 2010:1872).

3.4 CRITIQUES OF THE SELECTED INTRAPERSONAL HEALTH COMMUNICATION MODELS

The models discussed above all relate to cognitive behaviour change and persuasive communication for health-related issues. For the purposes of this study, different health communication models were reviewed in order to contextualise the focus of the study. Even though these are intrapersonal models none of them are fully patient oriented or patient-centred and lack the inclusion of the whole person in their larger social context. The notion of social inclusion as a positive contribution to health behaviour change is expanded on in chapter 4 in order to contextualise the conceptual contribution of this study. These models cater for behaviour and persuasive communication to an extent, but they are limited in the context of this study. Critiques for the different models included in this chapter are discussed below.

The HBM focuses on media integration as a cue to action in changing habitual unhealthy behaviour. The focus of the HBM study was on health communication from the vantage point of HCPs and patients, and media integration per se is not included. Also linked to this critique, the HBM focuses on media campaigns for illness avoidance and does not fully focus on long-term behaviour change for illness

management. This intrapersonal model is also critiqued for the limited constructs or tenets it displays. Sharma and Romas (2012:85) explain that “*cultural factors, socioeconomic status, and previous experiences also shape health behaviors, and those factors are not accounted for in the model.*” Bernard and Krupat (1994:72) also note the organisation of the model as not being fully appropriate since it aims to understand or account for behaviour solely in terms of attitudes and beliefs and therefore does not take into account social and environmental factors that influence individuals’ behaviours.

The TRA/TBP takes socially relevant behaviours into account, but its chief focus is the measurements of beliefs and attitudes on a cognitive level (Bernard & Krupat 1994:73). This model is not fully patient oriented. It does not cater for a two-way flow of information between HCPs and patients in which both parties aim to obtain health-related goals. This model caters for social factors and this is the reason why it was included in the literature review. It predicts behaviour change but does not explain how it actually occurs and behavioural modification needs to be understood in health education. The TRA/TBP, like the HBM, is also critiqued for failing to address elements such as “*personality-related factors, cultural factors, and demographic variables, which also shape behaviour*” (Sharma & Romas 2012:132). The model is further critiqued for not distinguishing between perceptive behavioural control and actual behavioural control which individuals experience. Perceptive behaviour does not always occur in actuality. Diabetic patients may perceive cognitively that a healthy diet will promote a healthy lifestyle, but they may not always consume healthy foods because of this perception. Thus perceived behavioural control does not always produce actual behaviour.

The PMT has also been critiqued for containing limited constructs for defining cognitive behaviour change in different health contexts. According to Rogers (1975:110), the model does not cater for all possible factors that can effect persuasion in a fearful situation. The model needs to cater for the time (duration) it takes to implement coping modes after sources of information are obtained. Rogers (1975:110) also notes that the “response-cost factor”, that is, the pain an individual experiences in implementing the behaviour change needs to be taken into account in this model. For example, in diabetic patients the pain in having to alter their entire lifestyle (diet, exercise among other challenging factors) needs to be taken into

account before coping modes are achieved. Patients do not necessarily listen to the HCP's communication with ease; instead, deep cognitive mental processing needs to occur before they fully adhere to treatment. The model thus neglects these factors and needs to be expanded in order to cater for substantial mental cognition in order to work towards effective behaviour change. The model does cater for sources of information, which refer to HCPs who can advise and interact with patients for medical care, Hence it does make some provision for interactive health communication which can be directed towards implementing patient-centred care.

The ELM was critiqued from the discipline of psychology. Accordingly, Johnson and Eagly (1989:290) note that different types of involvement occurred in the ELM before attitude change occurred, namely *value-relevant involvement* (the recipients' enduring values), *outcome-relevant involvement* (the recipients' ability to attain desirable outcomes) and *impression-relevant involvement* (the impression made by the recipient on others). The authors postulate that the ELM caters for only outcome evaluation and ignores a person's values. According to Booth-Butterfield and Welbourne (2002:161), "*outcome involvement and value involvement affect the persuasion process in different ways*". Johnson and Eagly (1989:290) state that both these involvement processes affect the processes of persuasion and attitude change differently (Booth-Butterfield & Welbourne 2002:161–162). Petty and Cacioppo (1990) argue against this critique by stating that there is no reason to separate these two categories of involvement, since the tenet, "*motivated to process*", caters for these involvements in the category of "*personal relevance*", as indicated in the ELM.

From the field of communication studies, Stiff (1986) conducted a meta-analysis to analyse how argument quality and source credibility can effect attitude change at different levels of involvement. Stiff (1986) identified 19 variables from different studies, and classified these variables under central or peripheral variables in the meta-analysis. Stiff (1986) further argued that the findings were better suited to the Elastic Capacity Model (ECM) rather than to the ELM. According to Booth-Butterfield and Welbourne (2002:162), "*it is important to note that the ELM predicts that several other variables – not only involvement – will influence elaboration likelihood and consequent attitude change*". Stiff (1986) argued that the ELM only focused on involvement. However, he neglected to demonstrate how the ECM would cater for other variables such as knowledge, need for cognition, accountability and distraction.

Petty, Kasmer, Haugtvedt and Cacioppo (1987) argued that Stiff was incorrect in his judgements and found many flaws in Stiff's methodology.

The ELM was criticised for precluding "*multi-channel processing*", meaning that between the two categories of attitude change, namely the central and the peripheral route, a trade-off occurs between the messages received which influence attitude at different levels of elaboration likelihood. According to this, central trade-off has misled researchers into assuming that the ELM implies that messages received can be processed in a multi-channelled manner. This means that individuals will only refer to peripheral cues of a message received if elaboration likelihood is low, and to central cues of a message if elaboration likelihood is high (Stiff 1986; Booth-Butterfield & Welbourne 2002:163).

The ELM was further critiqued by Hamilton, Hunter and Boster (1993:62) regarding incorrect predictions in relation to boomerang effects relating to persuasion. When individuals receive messages, they formulate more negative attitude change when they are receiving persuasive communication. Yet no boomerang effect occurs when they are experiencing many positive thoughts, and they may still be persuaded negatively. ELM theorists again intervened and indicated that the ELM is not only one-sided, but indicates that when people have negative thoughts towards the communication received, they will become more negative towards the message received (Booth-Butterfield & Welbourne 2002:164).

Booth-Butterfield and Welbourne (2002:164) indicated that some critiques claimed that the ELM lacked detail and was therefore an unusable theory, while others stated that the two central routes to attitude change were not methodologically and theoretically separated. However, many of these criticisms were demonstrated to be misguided and the ELM was considered a usable theoretical model, which included a strong theoretical grounding and thus stood the test of time and was used in many further studies.

A critique of the TTM is directed towards the six steps of change. In other words, patients cannot change their behaviour in the limited time conceptualised between each stage. Patients do not go through the stages in a singular process. Instead, they can go backwards and forwards between the stages. Thus adherence, for example, cannot be achieved by going via stage 1 to stage 6 in a linear manner

(West, 2005:1036). Like the TRA/TPB critique discussed above, behaviour change is not planned (immediately) and implemented within such limited time frames. Individuals are affected by different situations, and thus planning (as indicated per stage) does not always work out in health-care behaviour change contexts.

Another critique of the model is that individuals are not motivated in the model, that is, they receive no reward for succeeding or progressing with their behaviour change. Human nature is such that reward (for the purpose of this study, reward refers to gratification that can occur in the HCP-patient relationship when the HCP praises the patient for adherence) is needed to motivate patients to keep up with their treatment adherence. Even though the process of change, namely contingency management, aims to cater for this reward system to some extent, this is not an actual tenet in the original model, but merely a process that the HCP can integrate when necessary (West 2005:1037).

Since contingency management is a process of change, it is one of the coping strategies that patients can encounter in order to move through the different stages of change. Hence not all patients will encounter this process of change. For patients who do experience this process of change, HCPs can motivate and them accordingly. HCPs need to acknowledge and gratify these patients with praise through interactive communication. However, it can be argued that given the HCP-patient ratio at South African hospitals, time limits occur between HCP-patient sessions. The argument therefore resurfaces that patients cannot move through the stages of change in such a linear manner and with such ease. Patients are individual human beings and each patient reacts differently when placed in a different stage of the model. This model is thus inflexible and does not cater for adequate movement throughout the stages. Patients cannot alter and permanently maintain behaviour change so effectively within six stages.

The TTM is also critiqued for not containing a stage or construct where patients experience negative attitude change unlike the ELM or other behaviour change models. Thus a need exists for a more comprehensive behaviour change model to be developed where patient-centred care (on an intrapersonal level) occurs in the medical system (Freeman & Dolan 2001:230). When linked to health behaviour change, more factors need to be considered in aiming to keep the patient adherent

to medication and to see the value in changing his or her behaviour for the benefit of his or her individual's health. Hence the point of patient-centred care re-emerges.

The PAM is critiqued for displaying health behaviour change occurring in a linear manner, similar the TTM above. The stages are also not well defined since they seem limited and do not take into consideration past behaviour patterns of the individual which can impact on present behaviour patterns. Thus the critique arises whether or not a stage that caters for past behaviour should be included. Also, stage 4 is critiqued for looking like an "add-on" because if a patient does not decide to act, what happens next? Stage 4 seems incomplete since the patient then has no further stage to go to. For example, if the patient decides not to seek medical care to control the risky health situation, he or she falls off the stages completely since there is no stage that displays where the patient goes to next (Weinstein, Sandman & Blalock 2008:20).

Also, all patients are different and thus individual care needs to be catered for and is currently lacking in this model. Weinstein et al (2008:21) elaborate on this point by indicating whether patients who make partial progress towards a health-care goal (example: diet change, or implementing exercise into their daily routine or any other lifestyle change in relation to diabetes as an illness) should be grouped with patients who are fully compliant to the set goal or rather be placed with patients who made no progress towards the goal at all. The model does not cater for individual patients in the medical system.

Even though the IMB was initially developed for HIV/AIDS it was later used for other illnesses including diabetes, as discussed above. This model caters for the individual's perspective to health-care similar to the HBM and the PMT discussed in this chapter. It indicates that people require behavioural skills as well as motivation before preventive behaviour can occur, thus emphasising that interpersonal communication is required for prevention to occur. This model was included in the literature review since it emphasises the need for interactive communication as well as the social dimension of health-care which will be elaborated on in chapter 4. However, it can be critiqued since it displays a limited number of constructs and does not cater for patients who are not skilled in relation to implementing behaviour change. Information also has to be specific to the population being addressed. This specificity needs to be elaborated on in the model since social factors can impact on

health-care in relation to patient-specific health-care which is linked to the idea of patient-centred health-care and individuality that needs to be catered for in the medical system. This will be elaborated on in chapter 4.

On a whole, the stage models (TTM and PAPM) are limited since behaviour change does not occur in such a linear fashion, as indicated in the stages explained above. Even though all the models/theories reviewed in this chapter focus on behaviour change (from a health communication perspective), at an intrapersonal level they are lacking because they do not cater for a patient-centred approach to diabetes health-care and treatment adherence. The TRA/TPB, IMB and the HBM do include the social context to health-care, but this factor is not fully elaborated on, since the TRA/TPB is more focused towards measurement of beliefs/attitudes, while the HBM is more focused towards cues to health campaigns while the IMB does include social support for implementing behaviour change and is thus included in the literature review. All the models explain health behaviour change that occurs at a cognitive intrapersonal level where the person experiences beliefs and attitudes at a cognitive level that can either implement positive or negative behaviour change. Most of the models indicate that persuasive communication as well as information and motivation are required for health behaviour change to occur.

3.5 CONCLUSION

This chapter introduced part 1 of the literature review chapters which were included in order to contextualise seminal health communication models (from a behavioural and cognitive perspective) for the purposes of this study. The various health communication models and theories were outlined and explained in detail, in order to emphasise communication dynamics in relation to diabetic health-care. The various models were critiqued in order to indicate what is lacking in relation to current health communication models and theories (that have been used in relation to health-care factors for behaviour change at a cognitive intrapersonal level).

The purpose of this chapter was to emphasise the intrapersonal level from the individual's perspective in relation to diabetes health-care. However, the chapter included discussions relating to HCP-patient communication in order to emphasise

or explain that intrapersonal communication is linked to the individual (cognitively). However, these intrapersonal factors are influenced or determined by different external variables in the environment (which are elaborated on in chapter 4) and take place through interpersonal communication. The next chapter provides part 2 of the literature review in order to explicate the social dimension of health-care, thus demonstrating health communication at an interpersonal level.

CHAPTER 4

LITERATURE REVIEW PART 2: INTERPERSONAL HEALTH COMMUNICATION MODELS/THEORIES: THE SOCIAL AND CULTURAL CONTEXT

4.1 INTRODUCTION

This chapter discusses interpersonal health communication models and theories in chronological order as they developed. For the purposes of this study, as explained in the previous chapter, both intrapersonal and interpersonal models and theories of health communication are discussed in order to acknowledge what already exists in the field of health communication before a conceptual contribution for diabetic health-care which displays interactive (HCP-patient and HCP-HCP), patient-centred health communication in the social context can be proposed.

In the previous chapter, intrapersonal health communication models were reviewed but it was noted that none of the models fully adheres to patient-centred care, which is an important aspect of diabetes health-care. In this section of the literature review, the aim is to discuss existing interpersonal health communication models and theories analysing or noting interactive health communication between HCP-patient relationships as well as the inclusion of social and cultural factors in relation to diabetes health-care. The literature is reviewed in relation to the social context, namely culture and family as required for diabetes health-care in patient-centred care (as for the purposes of this study). Different cultural and family-oriented and interpersonal health communication models are reviewed, indicating the constraints of these models and the need for a comprehensive single model that covers diabetes health-care in a social context.

4.2 FACTORS THAT IMPACT ON HEALTH BEHAVIOUR

Illness and disease affect the physical, social, environmental and medical spheres of life. In the section below different factors that impact on health behaviour are discussed in a social and cultural context for the purposes of this study.

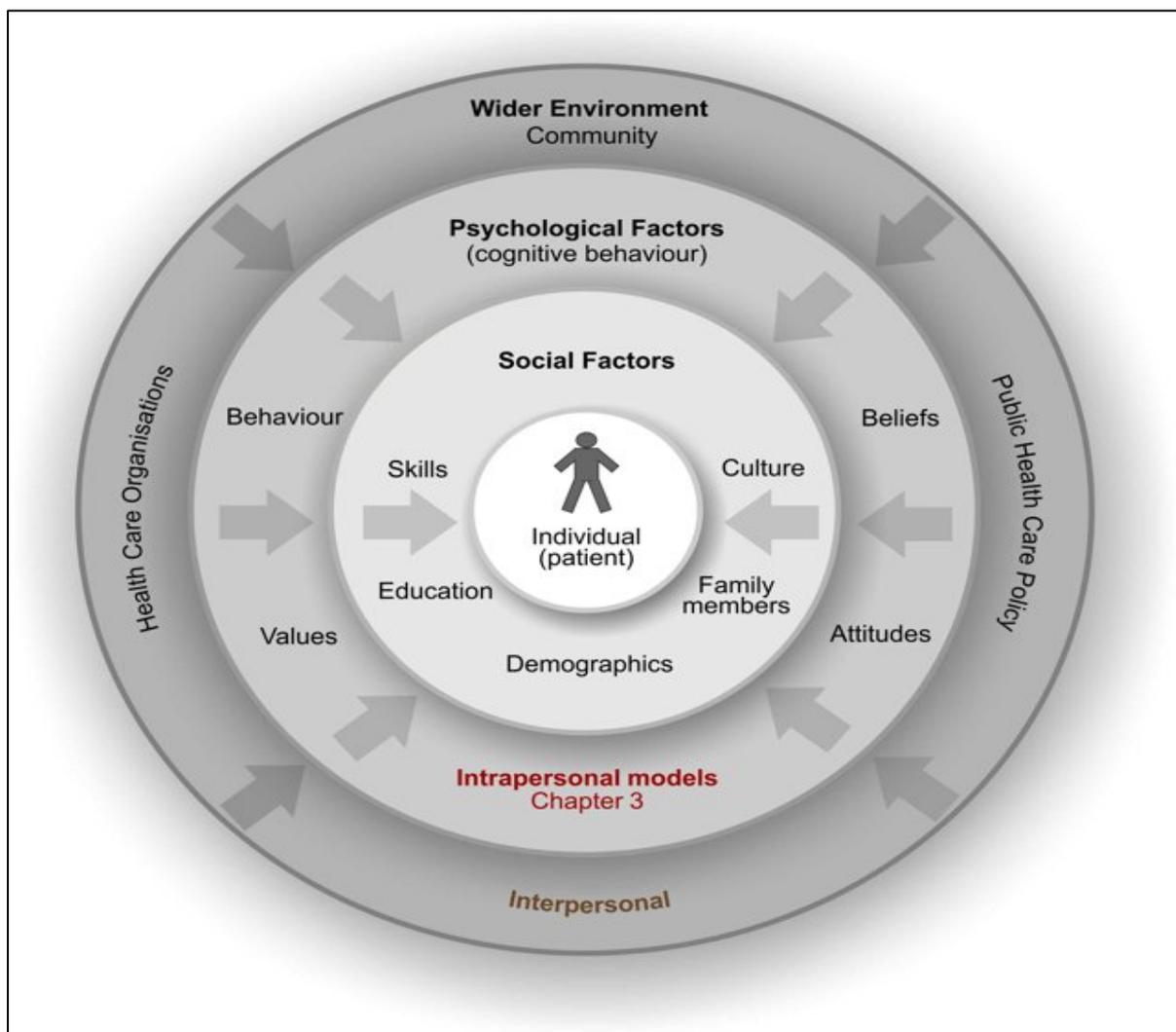


Figure 4.1: Factors that impact on health behaviour (Source: Adapted from the socio-ecological model: Simons-Morton, McLeroy & Wendel 2012: 45; Corcoran 2013:31)

4.2.1 Socioeconomic status

Socioeconomic status contributes to health in relation to levels of education, income and occupation. Levels of education greatly impact on knowledge skills in relation to understanding diseases. Socioeconomic status also affects health-related behaviour. This factor impacts on language usage when related to educational background of individuals and how they relate to health communication messages. Limited

education means that individuals are not able to secure good jobs which, in turn, may influence social status (De Haan 1996:26–27; Hayden 2009:3; Corcoran 2013:35).

4.2.2 Skills and education

Health communication is aimed at educating people about health behaviour and health-related issues. New information increases knowledge in relation to illness, but without skills, knowledge cannot be used to implement behaviour change. In the case of diabetes, patients require skills to implement healthy living in order to manage the illness (Hayden 2009:3). When patients do not receive enough education about illness management, they are unable to promote lifestyle modification behaviour (Parker, Steyn, Levitt & Lombard 2012:1).

4.2.3 Culture

Rose (2011:21) asserts that *“culture is an integrated pattern of learned beliefs and behaviours that can be shared among groups”*. Cultural beliefs impact on the health-care received. According to Elder-Vass (2012:38), *“culture consists of institutionalized practices and intelligibilia: artefacts from which we may decipher meanings”*. Culture contributes to human social meaning and cultural factors thus need to be catered for in health-care systems. Even though culture is acknowledged in the literature as contributing to effective patient care, in South Africa specifically, cultural tolerance is not fully implemented in public health-care since, as discussed in chapter 2, the public health-care system still adheres to biomedical care even though policy statements claim that patient-centred care should be implemented. This is in contrast to private health-care systems where patients are more easily catered for since medical facilities are more patient oriented or user friendly due to the cost factor involved in producing such services (adapted from Boshoff & Gray 2004:20).

Culture and ethnicity affect health communication since individuals are grounded by different ethnic and cultural beliefs. Even though individuals may have the necessary

education (information) and skills, they still do not always alter their behaviour towards maintaining effective health since their culture dictates the way they should behave (Corcoran 2013:36). Hayden (2009:3) emphasises this point as follows: *“[B]ehavior is significantly influenced by culture. In every culture there are norms, or expected, accepted practices, values, and beliefs that are the foundation of behavior.”*

4.2.4 Attitudes and beliefs

When individuals have different beliefs about illness, for example, they develop attitudes. As explained in the intrapersonal models/theories discussed in chapter 3, attitudes can be either positive or negative and they dictate whether or not behaviour change will be implemented for illness management (Hayden 2009:4).

4.2.5 Demographic factors

Demographic factors include age, gender, size and distribution of populations. Diabetes is an illness that is prevalent to middle-aged to old people as discussed in chapter 2 (De Haan 1996:24–25).

4.2.6 Family member

The term “family member” refers to an individual member or a group of members who are genetically related to a patient. For the purposes of this study, the family context is a vital support system which needs to be included in the social context of the health-care system in South Africa. Shillitoe (1988:160) notes the importance of question of family for diabetes treatment: *“[C]ooperation between family members is likely to increase the ease with which good control may be attained.”*

4.2.7 Health-care organisation

For the purposes of this study, the *health-care organisation* refers to the public health-care system in South Africa as detailed in chapter 2. In South Africa, public health-care is provided at affordable rates to individuals, unlike private health-care service delivery which costs thousands of rand. Apker (2012:31) explains that “*public health efforts also centre on the health needs of large populations rather than smaller groups of individuals*”. The government provides public health-care services to all patients, and there are large numbers of public health-care facilities located around South Africa’s nine provinces.

4.2.8 Community

A *community* refers to a social network of groups of people, organisations that display certain norms and standards which exist in a formal or informal manner (Cottrell et al 2015:100).

4.3 ACKNOWLEDGING EXISTING MATERIAL AND CURRENT RESEARCH IN HEALTH COMMUNICATION RELATED TO PATIENT-CENTRED CARE AND THE SOCIAL AND CULTURAL CONTEXTS OF DIABETES HEALTH-CARE

4.3.1 Patient-centred care: the context of diabetes

Patient-centred care is acknowledged as an important aspect of health-care communication (Pereira, Amaral, Ribeiro, Paro, Pinto, Reis, Silva, & Krupat 2013: 36). According to Coulter and Ellins (2006:7), “*patient-focused interventions are those that recognise the role of patients as active participants in the process of securing appropriate, effective, safe and responsive healthcare*”. For the purposes of this study, interactive health communication takes place in the HCP-patient relationship and encompasses patient-centred care. Interactive communication ensures that patient-centred care is catered for since it allows the patient to actively participate in his or her health-care decisions. For the purposes of this study, interactive health communication can be explained as patient-centred

communication, which occurs on a two-way (interpersonal) level, between the HCP and patients for diabetes diagnosis and treatment purposes (Bury 1998:5–9).

The table below elaborates the core aspects of patient-centred care as expressed by Coulter and Ellins (2006:12) and has been adapted in relation to diabetes as an illness for the purposes of this study.

Table 4.1: Core aspects of patient-centred care

Catering for the individual (patient-centred care)	Link to diabetes as a health-care concern (for the purposes of this study)
Patient's knowledge	Knowledge of diabetes as an illness, core symptoms, treatment options available, ability to display skill towards knowledge usage.
Patient's experience	The active patient, HCP-patient interaction, patient's personal (individual) experience of the illness, cognitive state of mind (existing attitudes, beliefs relating to implementing behaviour change or not) existing barriers to illness diagnosis and treatment adherence (culture and social elements).
Health-care service and cost of care	For the purposes of this study, South African public health-care facilities are accessed (see chapter 2 for the context of the South African public health-care system).
Health behaviour and health status	Health communication models as discussed in chapter 3 and in this chapter display how health behaviour is affected in relation to being diabetic.

(Source: Coulter & Ellins 2006:12)

According to the National Aging Research Institute (2006:1), patient-centred care is viewed as a partnership between the HCP and the patient and it should express a relationship of care, value, and mutual respect. From the biomedical framework as discussed in chapter 2, the HCP is the carrier of knowledge in the treatment team, while the patient is the actual person living with the illness. Respect should therefore be shown by the HCP to the patient in this regard.

The National Aging Research Institute (2006:1) explains the notion of patient-centred care in relation to a partnership in the HCP-patient relationship as follows:

- The HCP should “learn” about the individual patient by interactively communicating with him or her and ensuring that a relationship of trust is built. This is linked to the biopsychosocial approach discussed in chapter 2.
- It is an interactive HCP-patient relationship where communication occurs at a two-way level and thus power and responsibility for medical care are shared.
- Regarding accessibility and flexibility, the HCP should be available in the medical system to assist the patient when a need arises.
- Health-care issues should be viewed as a whole from the patient’s perspective. This is in relation to the patient’s cognitive state of mind and the attitudes and beliefs the patient displays in relation to the broader social factors that can affect treatment adherence.
- Health-care services need to implement patient-centred care environments where the staff are intent on effective service delivery.

Even though patient-centred care is acknowledged by the literature as discussed in chapter 2 from the biopsychosocial perspective, it is not fully implemented in intrapersonal models as discussed in chapter 3. Research indicates that patient-centred care models as well as service delivery are required in health-care. Medical care needs to incorporate individuals and their concerns in aiming to treat the whole person. Theories and models are required to advance in the direction of patient-centred care (Mead & Bower 2000a:71; Makoul & Clayman 2006:301; Legare, Stacey, Graham, Elwyn, Pluye, Gagnon, Frosch, Harrison, Kryworuchko, Pouliot & Desroches 2008:1).

With an illness such as diabetes, self-care is a vital component of disease management (as discussed in chapter 3). As far as patient-centred care is concerned, patients can become active in their own medical decisions and thus live healthy lives with diabetes. Tailor-made treatment plans ensure that diabetes care is patient-centred in its approach towards catering for the whole person (including the social and cultural context) (Guy 2005:7). The patient’s cognitive mind-set needs to be catered for since each individual reacts differently to his or her diabetes diagnosis and requires unique lifestyle changes in order for treatment adherence to occur. In chapter 3, various health communication models were reviewed, but individuals

experience different attitudes and beliefs towards implementing behaviour change. Patients need to see the pros of implementing positive behaviour change to their benefit and this can be done with the help of the HCP during interactive communication sessions. Health communication models need to include patient-centred care as well as the social, psychological and medical perspectives to health-care.

4.3.2 The social context of diabetes health-care: culture

Worldwide, different cultures view health and well-being differently. According to Gurung (2006:93), *“most health behaviors are learned when we are young and are strongly influenced by our cultural surroundings. Both cultural background and developmental processes correspondingly both influence health.”* Culture from a social context (for the purposes of this study) refers to HCPs catering for the individual, from a patient-centred care approach on an interactive/interpersonal level by practising cultural tolerance in diabetes health-care service delivery.

Various studies acknowledge the need for cultural awareness in producing effective diabetes health-care at a local and international level. Because cultural competence is required in multicultural ethnic settings, different models need to be merged in order to create an effective model (Campinha-Bacote 2002:181). Much of the research done in relation to the social context of health communication makes use of one or more health communication models as a theoretical base for research. Nursing research has also acknowledged that cultural factors (or culture-specific care) need to be integrated in managing health-care for diabetes at an individualised level (Fleming & Gillibrand 2009:146–147; Osman 2012:29). The issue of transcultural nursing is elaborated on in section 4.3.3 below.

Netto, Bhopal, Lederle, Khatoon and Jackson (2010:248) note the importance of cultural sensitivity for health promotion interventions in Pakistani, Chinese and Indian communities. Culture is a key factor that needs to be catered for in tailor-making interventions in order for effective understanding to occur among different ethnic groups. Five principles for adapting behavioural interventions in minority groups were identified in Netto et al's (2010) study. In first and second place are using community resources to increase accessibility to the health promotion intervention and

identifying barriers that can hinder access to participation in the intervention. Thirdly, communication strategies should occur in the language that is understandable to the community. Fourthly, cultural and religious values should be included in the interventions in order to further promote behaviour change. Fifthly, cultural identification should be accommodated when planning interventions to ensure that success is attained since cultural familiarity occurs and thus behaviour change is successfully induced by the targeted groups.

Betancourt, Green, Carrillo and Ananeh-Firempong (2003:118) indicated that cultural competence is needed in American health-care systems. Terms such as *cultural sensitivity*, *responsiveness*, *effectiveness* and *humility* have emerged and different models for operationalising cultural competence have been created. However “*no one has yet reviewed the literature and developed a more comprehensive approach to thinking about and implementing cultural competence in health-care at multiple levels from multiple perspectives*” (Betancourt et al 2003). Internationally, culture is seen as something that needs to be catered for in health-care settings (adapted from Airhibenbuwa and Obregon 2000:9; Kreuter & McClure 2004:450; Larkey & Hecht (2010:114); Wilson, Alam, Latif, Knighting, Williamson & Beaver (2012:1) and Schiavo 2014:84–85). In America, cultural competence is affected by many health-care challenges which include sociocultural barriers such as “*organizational (leadership/workforce), structural (processes of care), and clinical (provider-patient encounter) levels*” (Betancourt 2003). Cultural interventions such as culturally diverse material, HCP training towards cultural sensitivity and language-appropriate material need to be developed in order to accommodate racial and ethnic disparities in health-care.

According to Casillas, Paroz, Green, Wolff, Weber, Faucherre, Ninane & Bodenmann (2014: 6–7) providers need to be updated and educated on the diversity of cultures that exists. Cultural competency needs to be improved among providers. Factors such as HCP training, diversity of work force and provider awareness towards local cultures contribute to personal patient care in the health-care system. This study found that cultural competence is favoured in contributing towards individualised patient care, but more education, training and knowledge are required in order for cultural competency to occur in health-care.

According to Betancourt (2006), HCPs need to be guided and become equipped with different tools and skills which enable them to provide quality care in multicultural health-care settings. In order to develop patient-centred care, HCPs need to assess *“core cross-cultural issues; exploring the meaning of the illness to the patient; third, determining the social context in which the patient lives; and fourth, engaging in negotiation with the patient to encourage adherence”* (Betancourt 2006:998). All these factors call for individualised patient care which is a core requirement for diabetes treatment.

According to Elder, Ayala, Parra-Median and Talavera (2009:227), Latino culture dictates that health communication efforts *“need to focus on family, cultural traditions, and collectivisms while attending to acculturation, language, generation and national origin”*. Health communication dictates HCP-patient relationships need to be interactive for the service delivery of health-care to be effective. Language may be a barrier in effective communication between the HCP and the patient because of cultural diversity in health-care settings. Language barriers were noted in many studies conducted in relation to diabetes management in Pakistan, India and other Asian countries (Osman 2012:31; Netto et al 2010:252). Rockhill (1987) clearly points out in this regard that *“literacy is power”* and that patients need to be communicated with in simple understandable language that they can relate to. Levels of education can impact on language barriers. This point is elaborated on by Karliner, Perez-Stable and Gildengorin (2004:182), and in their study, clinicians noted that language differences affected effective understanding of patients' symptoms as well as treatment options to ensure effective health-care for patients.

Effective communication as well as an understanding of a patient's cultural background can greatly contribute to effective patient care and treatment adherence. Banerji (1989:178), arguing from a social health-care stance, stated that culture plays a vital role in health-care and treatment in any community. Culture forms the basis of health-care in South Africa and it determines how a community will react to an illness, as well as the manner in which health options will be measured. With regard to health options, many South African communities utilise traditional medicine because of their specific traditional beliefs. According to Herselman (1996:157), many Black South African patients seek traditional health-care remedies or believe that witchcraft, spirits or sorcery give rise to ill health. In such cases, the agent views

the notion of traditional health-care as a cultural structure that occurs in the treatment system in the social context. This point needs to be noted in the health-care system for effective treatment and care of illnesses to occur.

The debate on biomedicine versus cultural (traditional) medicine is ongoing. In South Africa, many black people seek herbal remedies for the cure of illnesses such as HIV/AIDS. Medicines made from herbs, plants and roots are also consumed for other illnesses including diabetes. According to Richter (2003:7), biomedical medicine is characterised *“with diseases of the physical body only, and are based on the principles of science, technology, knowledge and clinical analysis.”* Cultural beliefs are not generally catered for in biomedical health systems. The point of knowledge (HCPs’ perspective) and educational material need to be developed in order to tolerate culture as a discourse to health-care in public health-care system.

Another barrier to the utilising the health-care system is the cost factor. South Africa is still characterised by an unequal distribution of wealth. Coovadia et al (2009:817) reiterate how the public health-care system has had its fair share of trials and tribulations in South Africa. Inequality and poor management have led to a dysfunctional public health-care system. Previous policies in the apartheid system ensured that racial and gender discrimination occurred. Benatar (1997:891) emphasises how, after the establishment of democracy, South Africa underwent a social and a political transition to legitimise new systems. Governmental systems in power had to transform the systematic challenges occurring in the medical system to ensure that health-care was reformed. The limited health-care budget further contributed to the burden of the system. Bradshaw, Norman, Pieterse and Levitt (2007:705) indicate that the increase of diabetes is a rising concern in South Africa and the disease is adding to burdens for the country. Steyn and Levitt (2006:246) list the barriers or challenges that South Africa faces in terms of health-care service provision for chronic diseases since 1994, namely staff shortages, poor staff morale, severe overcrowding, lack of patient-centred care interventions, untrained specialist staff, HCP-HCP conflicts in illness management and inadequate communication skills between staff and patients and HCP-HCP teams. Lack of interactive communication between the HCP-patient relationship has led to poor chronic care, non-adherence to medication since patients are not empowered and do not have

enough knowledge of disease management to implement effective behaviour change.

Public health-care in South Africa adheres to conventional biomedical health-care service delivery and treatment options as discussed in chapter 2. According to Petersen (2000:321), *“while the vision for restructuring health-care in South Africa is based on a comprehensive primary health-care system, care at the primary level remains largely biomedical in orientation.”* According to Campbell-Hall et al (2010:611) *“[W]estern biomedical health services (including private practitioners) form part of the government-sanctioned public health-care system. Traditional practitioners (including diviners, herbalists and faith healers) provide an alternative culturally embedded system of healing.”*

Discourses of health-care in Southern Africa and South Africa tend to include cultural treatment options for illnesses. According to Mduluz (2007:vii), *“divergent regulations, cultures, and languages hamstring efforts to find a single approach to patient-outreach communications. What will work in a developed country, may not be culturally acceptable in Africa, legal in South Africa, or meet ethical standards in the North or West Africa.”* Thus collaborative health-care is required between the cultural and biomedical treatment systems in order for effective care of illnesses to occur. Busia (2005:919) explains this point clearly: *“today’s society has differing views about sickness, but to the traditional African, sickness is understood as a complex interaction of physical, physiological, psychosocial and spiritual factors”*.

In South Africa, a traditional medicine policy does exist which is acknowledged by the WHO (Summerton 2006:65). Even though the policy is legalised in principle, not much practical implication has occurred for all illnesses. The focus was more inclined towards HIV/AIDS (Summerton 2006:65). Traditional healing systems from the perspective of different cultures may need to be implemented by HCPs when treating patients from diverse backgrounds. Although herbal plant medicines are available and are currently used for diabetes treatment in South Africa, there are concerns about safety and standardisation of these treatment methods (Deutschlander, Lall & Van de Venter 2009:363). According to Summerton (2006:65), *“efforts to address the infrastructural needs of traditional healing systems should be optimised in order to improve the quality and effectiveness of traditional health-care for that segment of*

the population who opt to utilise traditional healing and medicine to meet their health-care needs.”

According to Leventhal, Weinman, Leventhal and Phillips (2008:492), aspects of culture, social relationships, lifestyles, representations of illness and treatment options as well as planning for illness prevention and illness management all affect the patient and the diagnosed illness. When regarding culture and health as influencing on one another, personal lifestyles and how processes such as urbanisation may impact on these and produce illnesses such as diabetes should be considered. Cultural practices impact on personal traits in relation to treating an illness such as diabetes (Leventhal et al 2008:492).

The need for cultural concerns to be addressed in health-care is noted, but no single model relating to health communication (from a persuasive cognitive behaviour change perspective as for the purposes of this study) encompasses this social dimension coherently as the conceptual contribution for this study aims to propose (Oomen, Owen & Suggs 1999:220; Greenhalgh 1997:10; Williamson & Harrison 2010:761; Ferzacca 2012:419). Patient-centred care ensures that cultural concerns are addressed during interactive HCP-patient sessions for diabetes treatment. Kreuter and McClure (2004:440) emphasise *“the general limitation of conceiving culture as a categorization variable that is relatively simple and fixed, rather than complex, dynamic, and adaptive system of meaning.”*

Culture to an extent completes an individual and thus cultural tolerance must be catered for in the health-care system. A need is noted to move away from treating disease only towards treating the person (as discussed in chapter 2) as expressed by Ferzacca (2012:415) in relation to diabetes and culture: a *“sense of evolutionary change is present, the point remains fairly consistent that culture is a mostly independent variable to which biology may be resistant, accommodating, or, at the very least, responsive”*. Culture has become a part of diabetes as an illness and thus the culture of biomedicine as a paradigm apart from the sufferers meaning of symptoms, needs to be explored (Ferzacca 2012:418).

In the next section, different cultural models from the literature will be explored in relation to health-care. This section is included to review what already exists in the literature in the form of actual models for the purposes of this study, since the

conceptual framework aims to develop a single health communication model that incorporates culture as a construct/tenet to diabetes health-care in the HP-patient relationship.

4.3.3 Models relating to culture and health-care: a review of the literature

From a review of the literature, different cultural models do exist which are mostly focused on cultural inclusion or cultural competence from a nursing perspective (Bastable 2008:301). Transcultural nursing practice is acknowledged in the literature as an important component of health-care practice for diverse cultures (Habayeb 1995:224; Gary, Sigsby & Campbell 1998:272; Beukes, Nolte & Arries 2010:5; Cioffi 2013:249).

The following four models and one approach will be reviewed in relation to cultural sensitivity for the purposes of this study:

- the Nurse-Client Negotiations Model (1980s)
- the four-step approach to providing culturally sensitive care (Price & Cordell 1994)
- the Culturally Competent Model of Care (Campinha-Bacote 1995)
- the Model of Six Cultural Phenomena (Giger & Davidhizar 2004)
- the Cultural Framework of Patients' Verbal Communication Approach versus Avoidance (Kim, Klingke, Sharkey, Park, Smith & Cai 2009)

4.3.3.1 The Nurse-Client Negotiations Model

This model (refer to figure 4.2 below) explains how care should be implemented for culturally diverse audiences. Even though this model was developed in the 1980s, it caters for cultural sensitivity and is thus still used today. The nurse and patient negotiate *health, illness and treatments* according to cultural factors (Bastable 2008:303). The model aims to merge the medical context with the social context as follows: the nurse (scientific perspectives) and the patient (popular perspectives) with regard to their beliefs relating to health, illness and treatment. The theoretical models reviewed in the section below were all developed internationally (outside of a South African context).

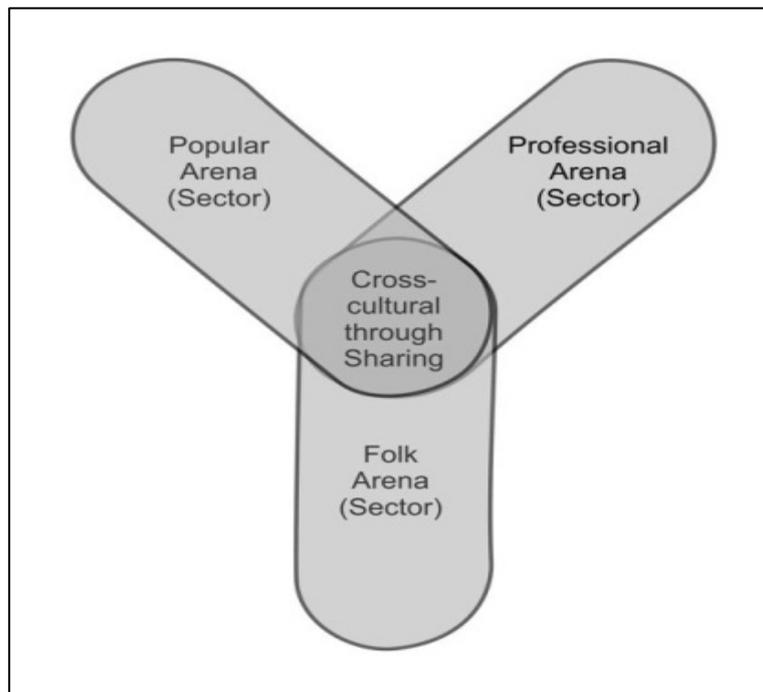


Figure 4.2: The Nurse-Client Negotiations Model (Source: Anderson 1987:8)

The model comprises the following three arenas:

- **The popular arena.** This sector includes the family, social network and community perspective to health-care.
- **The professional arena.** This sector comprises of scientific medicine from a biomedical perspective as discussed in chapter 2.
- **The folk arena.** This sector caters for other healing methods from a non-scientific perspective such as traditional healers, for example.

This model caters for cultural dimensions from the perspectives of both the nurse and the patient. From a HCP-HCP perspective, each nurse displays his or her own cultural values without sharing them with the team of nurses. A nurse's cultural view may hamper the manner in which he or she displays these beliefs to patients and their family members. This model caters for interactive communication that can occur at an interpersonal level between the nurse, patient and his or her family members. *Cross-cultural caring* occurs with interactive communication in this model. According to Bastible (2008:250), "each arena (sector) in the model can be viewed as a sociocultural system with its own values, norms of behavior, beliefs, and ways of explaining health and illness". This model then caters for the social context of health-care with reference to both cultural beliefs and the family context between the nurse-patient/family relationship only.

4.3.3.2 The four-step approach to providing culturally sensitive care

This approach was developed in 1994 to assist nurses to provide culturally sensitive patient care (Bastille 2008:303).

This model includes the following four steps that a nurse should follow in order to correctly implement culturally sensitive care:

- ***Examine personal culture.*** The nurse needs to examine his or her own personal culture in relation to the situation at hand.
- ***Familiarity with client culture.*** The nurse is required to learn and understand the cultural perspective or belief from the patient's perspective before treatment or care is implemented.
- ***Identify adaptations made by client.*** The nurse is required to identify the cultural adaptations followed by the patient.

- **Modify client teaching based on data from previous steps.** The nurse is required to then educate the patient on the health-care situation in relation to cultural sensitivity with regard to the cultural knowledge gained from the patient (from the previous steps). The nurse is required to respect and treat the patient from his or her cultural system as adhering to his or her values, beliefs and behaviour patterns (Bastille 2008:249).

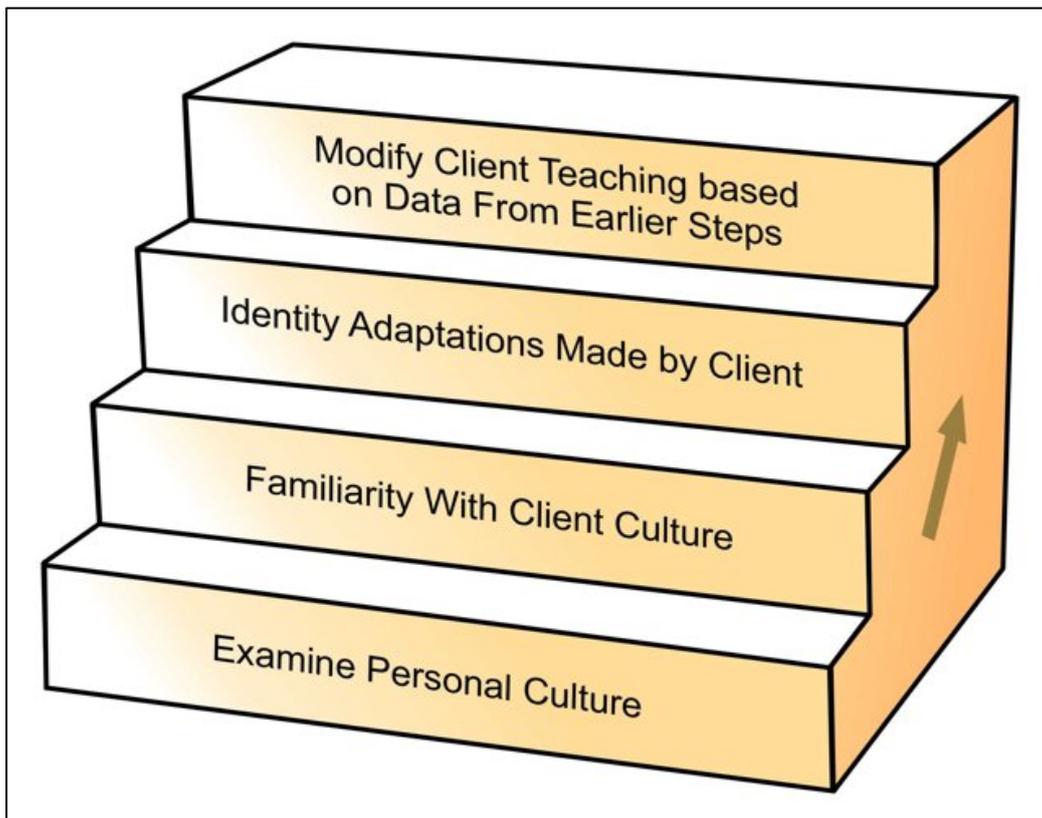


Figure 4.3: The four-step approach to providing culturally sensitive care (Source: Price & Cordell 1994:164)

4.3.3.3 The Culturally Competent Model of Care

According to this model, cultural competence can be defined as “a set of congruent behaviours, attitudes, and policies that enable a system, agency, or professional to work effectively in a cross-cultural situation” (Bastable 2008:251). The health communication models and theories discussed in chapter 3 emphasise health behaviour in relation to cognitive beliefs and attitudes that individuals possess in relation to either implementing a specific health behaviour change or not. However,

they lack social dimensions such as cultural tolerance which the models in this section (4.3.3) discuss.

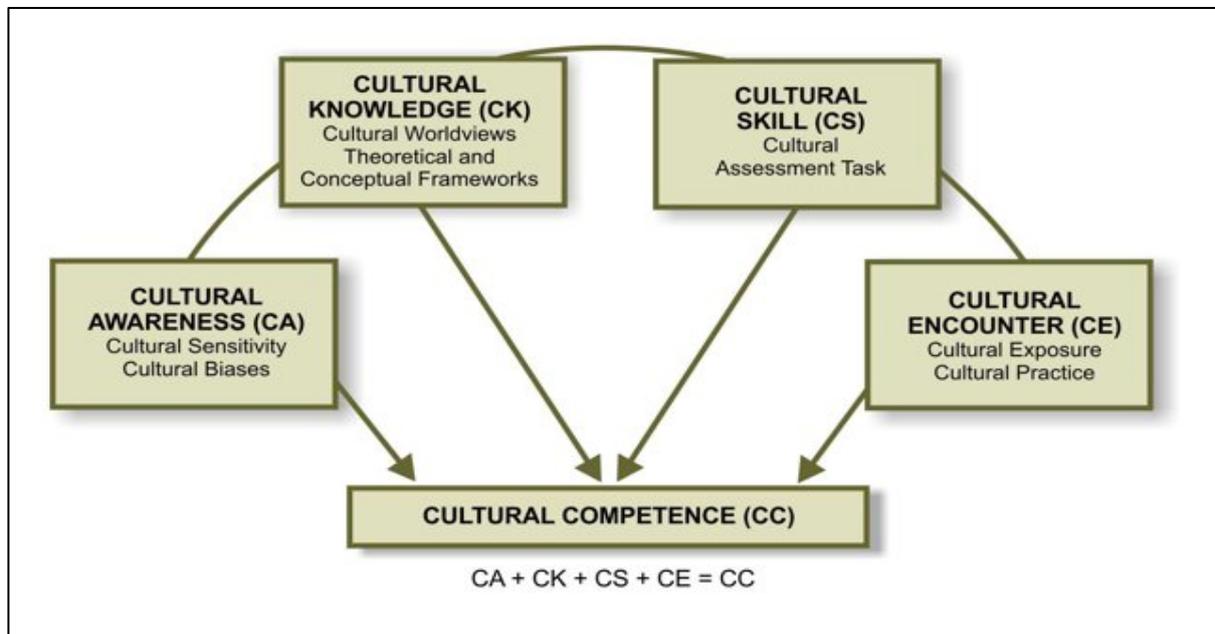


Figure 4.4: The Culturally Competent Model of Care (Source: Campinha-Bacote 1995:20)

The Culturally Competent Model of Care was developed to educate nurses on how to conduct a sensitive cultural assessment. This model includes four constructs, the first of which is *cultural awareness*, which explains that nurses need to become aware and more sensitive towards other cultures by displaying tolerance and reducing bias when providing medical care to culturally diverse audiences. The second construct *cultural knowledge*, emphasises that nurses should be provided with knowledge and education in relation to culture from a world-view perspective. Finally, *cultural skill* indicates that nurses need to acquire skill on how to conduct cultural assessments while *cultural encounter* motivates nurses to interact with diverse communities in order to gain more exposure to cultural interactions with different cultural backgrounds (Bastable 2008:251).

4.3.3.4 The Model of Six Cultural Phenomena

Figure 4.5 below provides an illustration of the Model of Six Cultural Phenomena. This model caters for the “culturally unique individual” who is attended to by the nurse. Yet again this model only emphasises that nurses should acknowledge

cultural tolerance in their service provision. The first three constructs catered for in the model include communication (in relation to nonverbal and verbal communication as it is interpreted in different cultures); personal space; and social organisation in relation to the person’s cultural behaviours, religion and beliefs. The fourth construct refers to time and how it is interpreted differently in different culture. Environmental control refers to the health-care system and the type of treatment the patient receives (the patient evaluates this system); and finally, biological variations link back to the person, that is his/her body, genetics, physical and psychological attributes (Bastable 2008:303). Only these six constructs are noted as cultural phenomena that nurses need to take note of when treating culturally diverse individuals.

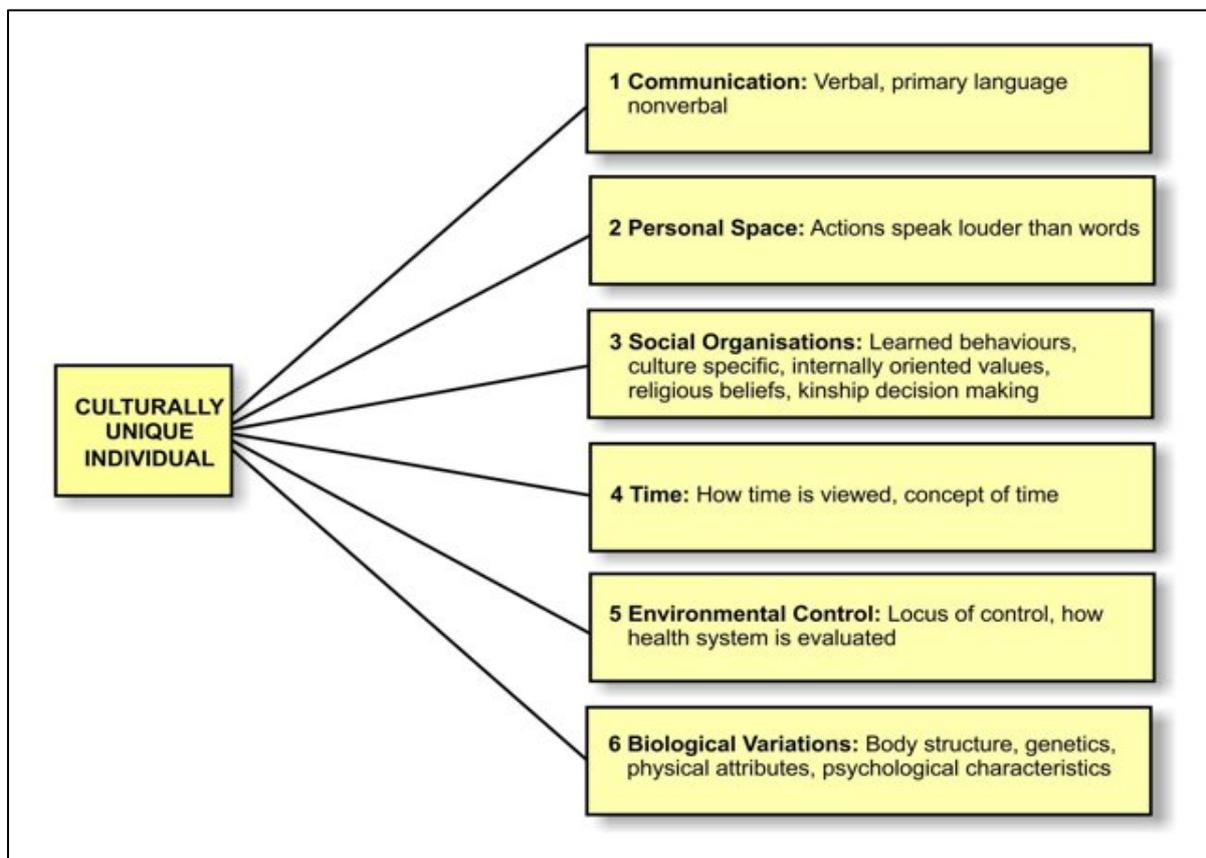


Figure 4.5: The Model of Six Cultural Phenomena (Source: Giger & Davidhizar 1995)

4.3.3.5 Cultural Framework of Patients’ Verbal Communication Approach versus Avoidance

This model was developed by Kim et al (2000) and aims to test how cultural orientations impact on patient’s assertiveness to interact with medical professionals. The model emphasises that *“culture and self-constructs are casual antecedents to*

patients' beliefs about verbal communicativeness" (Kim et al 2000:262). The model emphasises that self-constructs (either independent or dependent) emerge from cultural beliefs and values. As indicated in the literature discussed in section 4.3.2 above, culture is acknowledged in health-care communication, but independent models that display a comprehensive health communication framework are lacking. This model explains communication in a medical context from the patient's perspective and posits that patients can either experience two categories of efficacy in relation to the *patient participation beliefs* (this is in relation to the individual's cultural background) which are either positive or negative. Based on *participation belief*, the patient selects the *communication approach or avoidance outcome* which indicates if he or she will then assert interactive communication with the HCP or avoid standing up to the HCP and remain subservient (Kim et al 2000:269). It should be noted that this model was developed internationally and was tested in Hong Kong, the mainland USA and Hawaii. It is patient-centred but lacks HCP-patient interaction for health-care and treatment purposes.

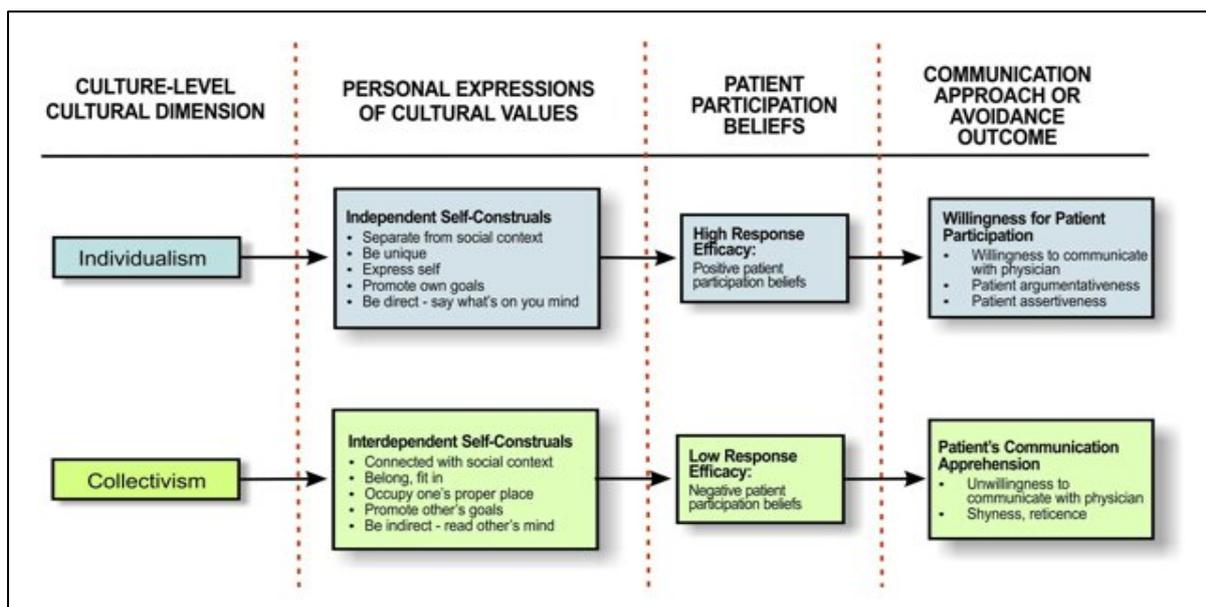


Figure 4.6: Cultural Framework of Patients' Verbal Communication Approach versus Avoidance (Source: Kim et al 2000:269)

4.3.4 Critiques of the cultural models reviewed

The models discussed above are linked to specifically nurse-patient relationships for cultural tolerance in health-care service delivery. The four-step approach to providing

culturally sensitive health-care as well as the Culturally Competent Model of Care are more suited towards nurses curriculum where education in relation to these constructs needs to be taught to nurses in order for them to be able to practice culturally tolerant care for a diverse range of patients (adapted from Marcinkiw 2003:174; Cuellar, Brennan, Vito & De Leon Siantz 2008: 143; Starr, Shattell & Gonzales 2011: 86). The notion of transcultural communication has been acknowledge as a vital component of interpersonal communication in the nurse-patient relationship (Douglas & Pacquiao 2010:5; Husband & Hoffman 2004:1) The Nurse-Client Negotiations Model caters for interactive health communication in the nurse-patient relationship at an interpersonal level. Once again, this model is limited only to nurses and is not applicable to all HCPs (eg doctors or other treatment team members) (adapted from Chang & Kelly 2007:416). The Six Cultural Phenomena Model caters for patient-centred care, but the model is still limited in acknowledging health-care as a completely comprehensive and coherent framework (where both the HCP and patient are included in the relationship) (adapted from Truong, Paradies & Priest 2014:1).

Cultural factors need to be included in health communication models as actual constructs that impact on health-care and treatment adherence. The notion of patient-centred care re-emerges as a vital construct that is required in the HCP-patient relationship in order for diverse audiences to be catered for in a culturally sensitive manner. The Cultural Framework of Patients' Verbal Communication Approach versus Avoidance is limited in the sense that it avoids constructs that display how interactive communication can occur in relation to the HCP catering for the patient's cultural background (adapted from Kirkham, Smye, Tang, Anderson, Blue, Browne, Coles, Dyck, Henderson, Lynam, Perry, Semeniuk & Shaper 2002:222). According to this model, the patient needs to stand up for himself or herself and select the communication approach in order for his or her cultural beliefs to be catered for in the medical system. The HCP does not naturally aim to cater for patient-centredness. The literature reviewed in 4.3.2 above clearly acknowledges a need for culture as a dimension to be incorporated into health-care. The need for cultural context is noted, but no single conceptual framework caters for this in relation to health communication from a diabetes perspective.

4.3.5 The social context of diabetes health-care: family

With regard to diabetes, self-care patients are affected by social and psychological barriers as explained in some of the persuasive behaviour models discussed in chapter 3 (HBM, TRA/TPB and the IMB). Thus when patient-centred care is practised, medical personnel need to be educated on cognitive barriers that can affect service delivery (Mohebi, Azadbakht, Feizi, Sharifirad & Kargar 2013:1). Chapter 3 provided a review of health communication models that dealt with cognitive behaviour change in order to contextualise the conceptual contribution for this study. Social support in relation to the context of family (as for the purposes of this study) relates to assisting diabetic patients at the social, psychological and cognitive levels in working towards coping with their illness and maintaining treatment adherence as well as lifestyle changes relating to diabetes as an illness.

Social relationships impact greatly on patient care since they contribute to patient support and the ability to cope and maintain an illness such as diabetes. According to Bond and Bond (1994:112), *“when a person gets ill it is generally the family that copes. The family will offer remedies and advice; it will take over those roles that the ill person is no longer capable of and it will provide the care necessary until recovery or for long-term support.”*

According to Ross, Mirowsky and Goldsteen (1990:1059), *“a family is more than just a collection of people who might expose each other to infections and pollutants. A family is an economic unit bound by emotional ties.”* The patient receives treatment from the health-care system, but his or her illness is viewed in the social context, which includes the family. Northouse and Northouse (1985:108) mention two problems that family members are faced with, namely exclusion from the treatment process and limited involvement with the patient’s illness. Villagran, Goldsmith, Wittenberg-Lyles and Baldwin (2010:229) argue that involving family support in the treatment process helps the patient to feel more at ease and also directs him or her more clearly towards the treatment plan concerned. Family members render more support which the patient requires with diagnosis of their illness.

According to Clarke (2001:193), the social aspects of health-care posit family as playing an essential role in treatment for a patient. Family is regarded as the

mainstay of informal health-care which is readily available for patients. Sociology sees family as a social system which provides stability and care, and instils values in individual members of the family. Family can be seen as a social structure that impacts on the patient's health-care in the social context. The role of the family therefore needs to be accounted for in the sociology of public health-care in the medical system.

According to Shillitoe (1988:141), *“there can be little doubt that social support is a strong contributor to wellbeing. For most people the family is the main source of social interaction and support.”* With a disease such as diabetes the patient can feel isolated since the disease can impact on the social structure of the family. Diet changes, altering lifestyles and maintaining treatment adherence can impact on the social sphere and family structure. Many studies conducted note that self-care for diabetes as an illness is a cognitive process that patients experience mentally. However, if social support (in relation to family members) is included in this self-care process, patients will more willingly implement behaviour change (in the form of treatment adherence, diet and lifestyle change and so on) (Rad, Bakht, Feiza and Mohebi 2013:1; Mohebi et al 2013:346; Rosland & Heisler 2012:221; Morisky, DeMuth, Field-Fass, Green & Levine 1985:35).

The need for family to be included in health communication from a diabetes perspective (as for the purposes of this study) is noted in the literature as discussed in this section, but no single framework exists which incorporates this social element. Theories and models do exist and are discussed in section 4.3.6 below, but this need exists in isolation to a comprehensive framework.

4.3.6 Models/theories relating to the social context of health-care: a review of the literature

In this section, different interpersonal models and theories will be reviewed which emphasise the social dimension of health communication (as for the purposes of this study). The biosychosocial model discussed in chapter 2 (section 2.9.2) introduced the inclusion of the social context to health-care which moves away from conventional biomedical practice. In the section below, different interpersonal theories will be discussed which emphasise the social dimension as a related

construct to health-care. The literature reviewed above (section 4.3.2 and 4.3.5) acknowledges the need for the social context in relation to culture and family as contributing factors towards patient-centred care and treatment adherence, behaviour and lifestyle changes in relation to diabetes as an illness. According to Glanz, Rimer and Lewis (2002:164), *“humans are social creatures who are sustained and affected by interactions with their environments, including other people.”* As discussed in section 4.2 above, health behaviour is affected by the social context of the human being since illness is not viewed in isolation to the biology of the individual subject.

4.3.6.1 Social Cognitive Theory (SCT)

SCT is a well-established social theory used in health communication research for researching the social cause of action. This theory also aims to explain human behaviour in relation to the following three dimensions: personal, behavioural and environmental factors (in relation to family) that impact on behaviour change in relation to health-care (Sharma & Romas 2012:174-175). According to this theory, *“people’s capacity to regulate their own functioning and shape the course their lives take is a core feature of social cognitive theory”* (Bandura 2012:360). Diabetic patients have the ability to regulate their own health behaviour patterns which can shape the course their illness will take in relation to either managing their diabetes or implementing non-adherence patterns that will only harm them in the end. This model caters for the social context which is acknowledged in the literature as being a contributing factor to diabetes self-care.

The SCT is made up of the following constructs/tenets:

- **Knowledge.** This refers to the individual obtaining information and education on the risks and benefits of the health behaviour. Knowledge is necessary for behaviour interventions but does not necessarily ensure that behaviour change will be implemented (Sharma & Romas 2012:181).
- **Outcome expectations.** This refers to the outcomes a person expects if he or she engages in behaviour change. For example, in the case of diabetes, if a person exercises and eats healthily he or she would expect to be able to

manage his or her diabetes well. A likely outcome is expected of a certain behaviour intervention (Cottrell et al 2015:113).

- **Outcome expectancies.** These refer to the values that people place on the expected outcomes (Sharma & Romas 2012:182; Cottrell et al 2015:113). In the case of diabetes, patients can be questioned on the importance they attribute towards managing their diabetes in order to be able to live longer.
- **The environment and the situation.** The environment refers to factors that can affect the person but are also external to the person such as the family. The situation refers to the cognitive factors that the person holds in relation to the environment, that is, how he or she perceives his or her family situation (Baranowski, Perry & Parcel 2002:168).
- **Self-efficacy** This refers to the confidence or belief individuals display in their ability to perform the desired behaviour change (Sharma & Romas 2012:183; Baranowski et al 2002:169). If people are not confident in themselves, behaviour change will not occur. The HCP is thus required to intervene here and motivate the patient accordingly – hence the need for a comprehensive health communication model that includes both the HCP and patient in relation to altering behaviour change for illness treatment.
- **Self-efficacy in overcoming impediments.** When a person engages in behaviour change relating to a specific situation he or she experiences barriers in this regard. This construct thus refers to the confidence a person displays in overcoming these obstacles with regard to the given situation (Sharma & Romas 2012:184). Cognitive barriers can emerge in diabetic diet control where a person can become depressed because they are excluded from meals and now need to eat food that is different from that of family members.
- **Observational learning.** This entails learning through looking at and observing the behavioural acquisitions of other people (Baranowski et al 2002:169).
- **Emotional coping responses.** This entails the ability of a person to be able to control the emotional and psychological states of the new behaviour change (Sharma & Romas 2012:184).

- **Reciprocal determinism.** This relates to the interaction of the three dimensions of this theory, namely the person, the behaviour and the environment in which the behaviour change occurs (Baranowski et al 2002:169).
- **Goal setting or self-control.** According to this construct, people set goals and implement them accordingly. If planning occurs, self-control and behaviour change will occur with ease (Sharma & Romas 2012:184). In relation to diabetes, patients need to set goals in order to alert their lifestyles accordingly towards managing their diabetes, and small steps towards these goals will ensure that behaviour change occurs with ease.

4.3.7 Critiques of the SCT

This theory, like the intrapersonal models and theories discussed in chapter 3, emphasises health behaviour that occurs at a cognitive level. However, the SCT stands out from these model/theories in that it caters for the social dimension to health behaviour in individuals where personal deterrents are linked to social structures (similar to the TRA/TPB, IMB). However, this theory is criticised in that it displays no particular order and constructs are not well defined as to what occurs at which time (Sharma & Romas 2012:187-188). The design does not clearly explain how behaviour change occurs in individuals (unlike the TTM or the PAMP as reviewed in chapter 3). A further argument is that this theory contains too many constructs which cannot all be tested in given contexts. The theory is also criticised because it was created for learning and is therefore more suited to children (Sharma & Romas 2012:187). However, this theory was included in the literature review since with illnesses patients need to learn or educate themselves with knowledge relating to the disease (diabetes for the purposes of this study) and therefore HCPs can aim to educate them with interactive health communication that caters for the social dimension to health-care. As indicated in the literature, the social component needs to be incorporated into the medical context to ensure that patient-centred care is practised (Sharma & Romas 2012:187–188; Baranowski et al 2008:181).

Other social models do exist in the literature namely, the Social Network Theory (SNT) and the Social Capital Theory (SCT), which are not applicable to this study, since they are specifically focused on networks and communities. The SNT explains multiplexed relationships that can impact on the individual and the focus of this study refers to the family structure impacting on diabetes health-care as discussed in section 4.3.5 above. Communication for the purposes of this study refers to interactive communication that occurs in the HCP-patient relationship for diabetes health-care. The family is a structure that impacts on diabetes self-care and family support needs to be incorporated into medical care that is patient-centred. The network concept that this theory explains is not related to the focus of this study (Cottrell et al 2015:113–114).

The SCT focuses more on communities as opposed to the individual and is thus not included in detail in this literature review. Also with regard to the SCT, social capital per se does not impact on health behaviour (social capital refers to structures in the community such as civic participation, network norms and trust), which are not suited to the purposes of this study since the focus relates to HCP-patient interaction for health-care and treatment (from a health communication perspective) (Cottrell et al 2015:115).

4.3.8 A family framework for diabetes self-management behaviour

In their research, Fisher, Chesla, Bartz, Gillis, Skaff, Sabogal, Kanter & Lutz (1998:599) developed a framework for intervention in relation to Type 2 diabetes and the inclusion of the family. This study indicated that four factors are linked to self-management behaviour and Type 2 diabetes, namely the characteristics of patients (this construct is in relation to family characteristics and patient characteristics which impact on each other); the amount of management of stress (stress is in relation to work and finances among other barriers that all family members experience in general); the characteristics of providers and provider-patient relationships; and the characteristics of the social network/context in relation to the family.

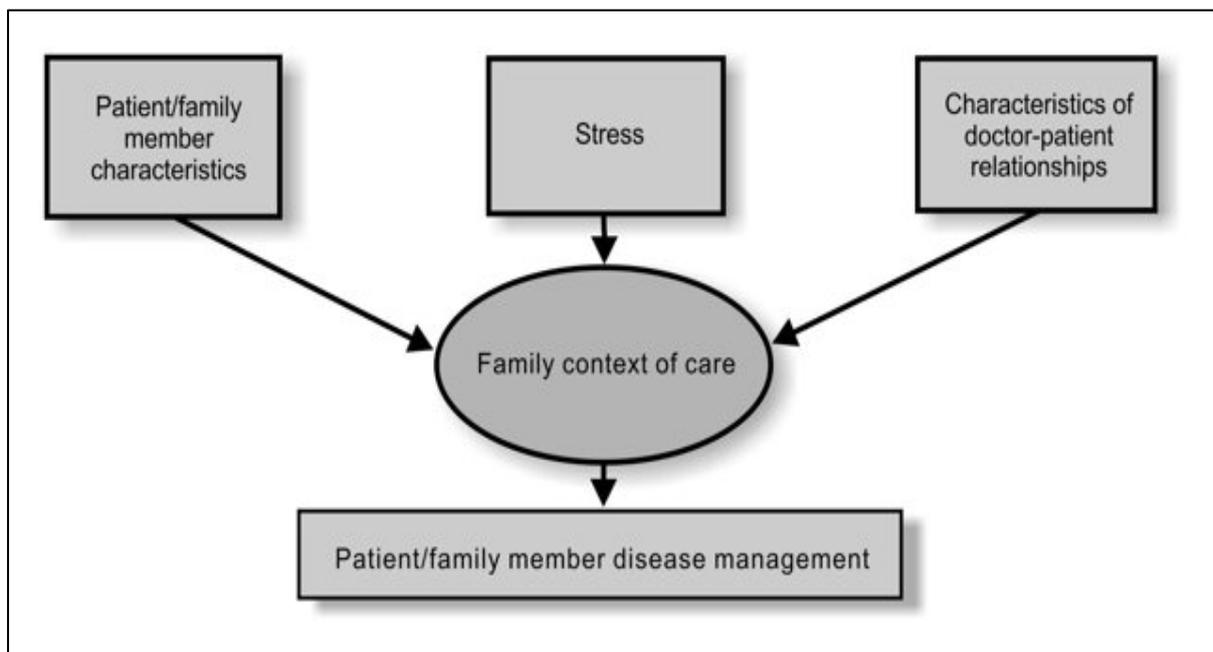


Figure 4.7: A family framework for diabetes self-management behaviour (Source: Fisher et al 1998:602)

This framework explains that the patient impacts on the family, and vice versa, from a family-centred approach, that is, the family's situation affects the patient as well, which can then affect health-care for diabetes. The focus of this study is to include a construct "family" (from the social dimension of health-care) in relation to the patient's diabetes for support in managing the illness and not how the family's stress or family's characteristics affect the patient (family context). The aim is to develop a

conceptual framework that displays interactive health communication in the HCP-patient relationship in the social context. The focus of the conceptual framework is on patient-centred care and not family-centred care as indicated in Fisher et al's (1998:599) framework below. Figure 4.7 illustrates this framework.

4.4 HEALTH COMMUNICATION MODELS RELATING TO HCP-PATIENT AND HCP-HCP RELATIONSHIPS

In the section below, health communication models that display HCP-patient and HCP-HCP communication are discussed. These models are a departure from the interpersonal social and cultural cognitive theories and models discussed above to emphasise HCP-patient and HCP-HCP communication relationships for the purposes of this study. The aim here is to develop a comprehensive conceptual framework displaying interactive communication for diabetes care.

4.4.1 HCP-patient model that illustrates potential barriers to effective communication

The most vital ingredient in health service and delivery is effective communication that occurs at a two-way level and communication that comes from both the HCP and the patient. For treatment adherence to be maintained, patients need to understand the information communicated to them. For behaviour change to be effective, patients must understand the message communicated to them. Research has indicated that negative relationships between HCPs and patients in the medical system contribute negatively to treatment adherence and an increase in patient dissatisfaction with the medical system (Northouse & Northouse 1998:79). This model (see figure 4.8 below) was developed by Northouse and Northouse in 1985. The tenets of the model were added from previous research conducted by theorists in the field of health communication. The purpose of the model is to highlight possible factors that can hinder treatment adherence between HCPs and patients in the medical system. This model is an effective model that contributes to therapeutic

health-care between the two most important parties in the health-care system – the HCP and the patient.

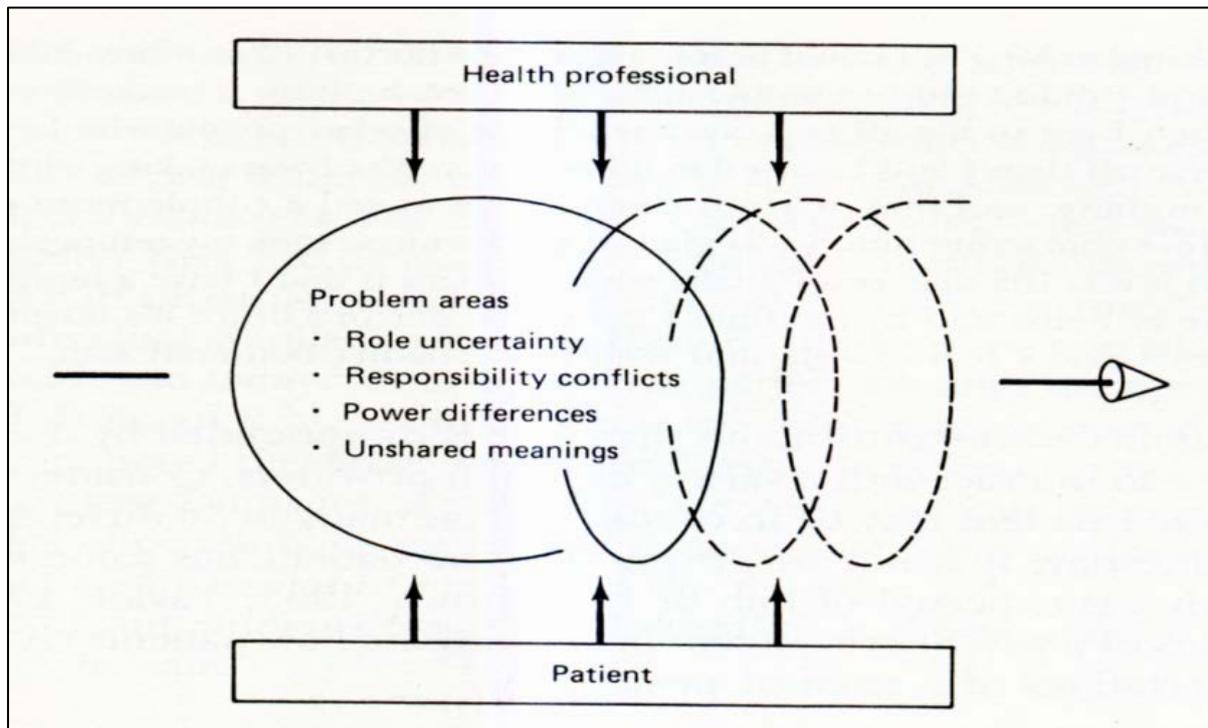


Figure 4.8: Potential barriers to effective communication in professional-patient relationships (Source: Northouse & Northouse 1998:80)

4.4.1.1 Role uncertainty

Role uncertainty is frequently a barrier that can hinder effective communication between HCP and patient. Often both the roles of the HCP and the patient are not clearly defined in the medical health-care system (Northouse & Northouse 1998:80).

In the conventional biomedical health system (as explained in chapter 2), the HCP, compared with the patient, is in a superior position in the development of a treatment plan. Roles in the health-care system need to be clearly defined in order for treatment adherence to be clear and effective for long-term health-care goals. The role of patients in society is a challenging one; they are usually “normal” human beings who are then confronted with a serious health-care issue and usually do not know how to respond in these circumstances. They are removed from their conventional roles as workers and family members, to being people who are confronted with an illness. Socially, being ill is viewed as a personal matter and patients usually isolate themselves from society when they are ill. A diagnosis

usually ends up with physical and emotional pain and patients are usually in an anxious and distant state of mind. Social expectations usually affect the role of a sick person (Clarke 2001:44).

HCPs must utilise the idea of “grief work” or “therapeutic listening” to assist patients to cope with a newly diagnosed illness. For HCPs this is usually a time-consuming part of their job, but sitting down with patients and listening to them can greatly improve their acceptance of their illness. On a daily basis HCPs are faced with chronic conditions and therefore they are immune to these diagnoses and treatment measures. However, patients are affected negatively by diagnoses at a social, physical and emotional level, as discussed above. Hence the notion of “grief work” counselling from the HCP to the patient can assist the public health-care system significantly (Reynolds 1996:17).

Another concern for patients might be that they are ignorant of the medical health-care system, and are therefore afraid to talk to HCPs and ask for help. This is where communication needs to flow in two directions and a trustful relationship needs to be established between the HCP and patient in order for treatment to be effective. Wynia and Osborn (2010:103) argue that communication in the medical system must be patient-centred in order for it to be effective and beneficial to the individual patient (as discussed in section 4.3.1 above).

4.4.1.2 Responsibility conflicts

The responsibility of managing one’s own health plays a crucial part in health-care. Conflicts often arise in the medical system where the HCP and patient are in conflict about whose responsibility it is to maintain the patient’s health-care. Does the onus fall on the patient, since the individual is the actual person living with the illness? Or is it the responsibility of the HCP since he or she has knowledge about diagnosis and treatment (Northouse & Northouse 1998:83 – 84).

In the medical health-care system, responsibility should fall on the shoulders of both the HCP and the patient for effective long-term treatment adherence to occur. This tenet emphasises the fact that modern health-care is moving towards a “holistic health-care” approach where patients need to take responsibility for their own health-care in the medical system. This holistic approach works well for interpersonal

communication which can facilitate effective behaviour change. In South Africa, treatment and care for diabetes need to move to a more patient-centred approach where patients have the ability to contribute to their own medical situation. However, given the challenges of the public health-care system as detailed in chapter 2, HCPs still take the lead in medical care (Mayosi et al 2009:1–2).

A qualitative study conducted by Pooley, Gerrard, Hollis, Morton and Astbury (2001:324) analysing patients' and HCPs' management of diabetes, indicated that HCPs and patients need to work as teams for the improvement of diabetes health-care. HCPs need to empower patients to adhere to medication. However, patients also need to be responsible for their own diabetes management. A major barrier to treatment adherence for diabetes care was the fact that patients found it difficult to take full responsibility for their own health-care and they needed to be pushed by the HCP. Both HCPs and patients in this study acknowledged that more time was needed with diabetes patients during informative sessions and ample time had to be given to explaining and discussing individuals' health-care and treatment.

4.4.1.3 Power differences

Medical norms may hold that the HCP is always held in a superior position relative to the patient when it comes to treatment of and care for an illness. The conventional biomedical framework posits that the doctor always knows best, while patients are meant to be subservient in treatment and care due to their lack of medical knowledge. Hugman (2009:52) argues that social status and occupation can play a major role in subservience to HCPs owing to ideological conventions of the HCP being more educated and of a higher social status compared with the patient. However, a counter-argument could be that patients are the people living with the disease, so they may be in a better position to discuss the symptoms they are experiencing to help guide the HCP for treatment procedures (Northouse & Northouse 1985:89–90).

4.4.1.4 Unshared meanings

In the medical health-care system, HCPs and patients are individuals that view illnesses differently, meaning that a patient is an actual person living with a disease

while a HCP is a person merely diagnosing an illness in a patient. HCPs see a disease and aim to treat it, while patients experience more than just a disease and, as discussed in the tenets above, their role is altered when they become ill. Apart from being themselves, they now have to carry a further burden in society of being diagnosed as diabetic, for example. Patients experience emotional stress relating to the illness, and not only physical pain, as the HCP might assume. Communication must occur between the HCP and the patient to ensure that an understanding occurs on both sides. HCPs should communicate effectively yet simply with patients and they should assume that patients have no prior knowledge of the medical condition diagnosed, and should therefore aim to educate patients to the best of their ability in order to overcome unshared meanings in treatment adherence (Northouse & Northouse 1985:93–94).

Wynia and Osborn (2010:102) analysed how health literacy contributes to effective communication in medical settings, and they found that if patients do not understand the message that is communicated to them, their levels of understanding reduce and the essence is lost. Communication aimed at educating patients about health-related matters must be clear and patient-centred for it to be effective.

Another form of effective communication that HCPs can utilise to educate and communicate with patients is via “cognitive therapy”. With this kind of intervention the HCP can assist patients to focus on the positives to counter negative feelings they may experience during the early stages after diagnosis. Illness can cognitively affect patients, which can lead to more ill health because of added stress or anxiety. This technique can therefore assist and improve health in diabetic patients (Reynolds 1996:17–18).

4.4.2 The Disease-Illness Model

This model (see figure 4.9 below) was developed by Levenstein et al in 1989. The theorists’ idea was to develop a patient-centred approach to health-care in the medical system. The diagram below represents a patient-centred clinical interview, which was later developed along the same framework into the Disease-Illness Model. This model was intended to cater for patient involvement in diagnosis and

treatment. The illness framework includes social factors such as ideas, expectations and feelings. Abbott and Payne (1990:6) postulate that the sociology of health posits that people want to maintain their health – they are faced with challenges, but they need to overcome them and maintain their health. People who are diagnosed as ill become concerned about their daily lives and thus choose health-care services to try and make their illness manageable. A more humanistic approach was included in the patient’s agenda, while HCPs’ agendas followed the typically ordered medical approach to diagnosis and treatment.

Weston, Brown and Stewart (1989:147) argue that “*effective patient care requires attending as much to patients’ personal experiences of illness as to their diseases*”. This is the core idea of this model, namely understanding the patient as a person. This ensures that the HCP is able to find suitable solutions to medically assist the patient in a caring manner. The HCP must understand the personal, lived experience of patients by trying to understand their ideas, expectations and feelings as cues/leads to unpacking methods of trying to assist them to cope with their illnesses and lives in general.

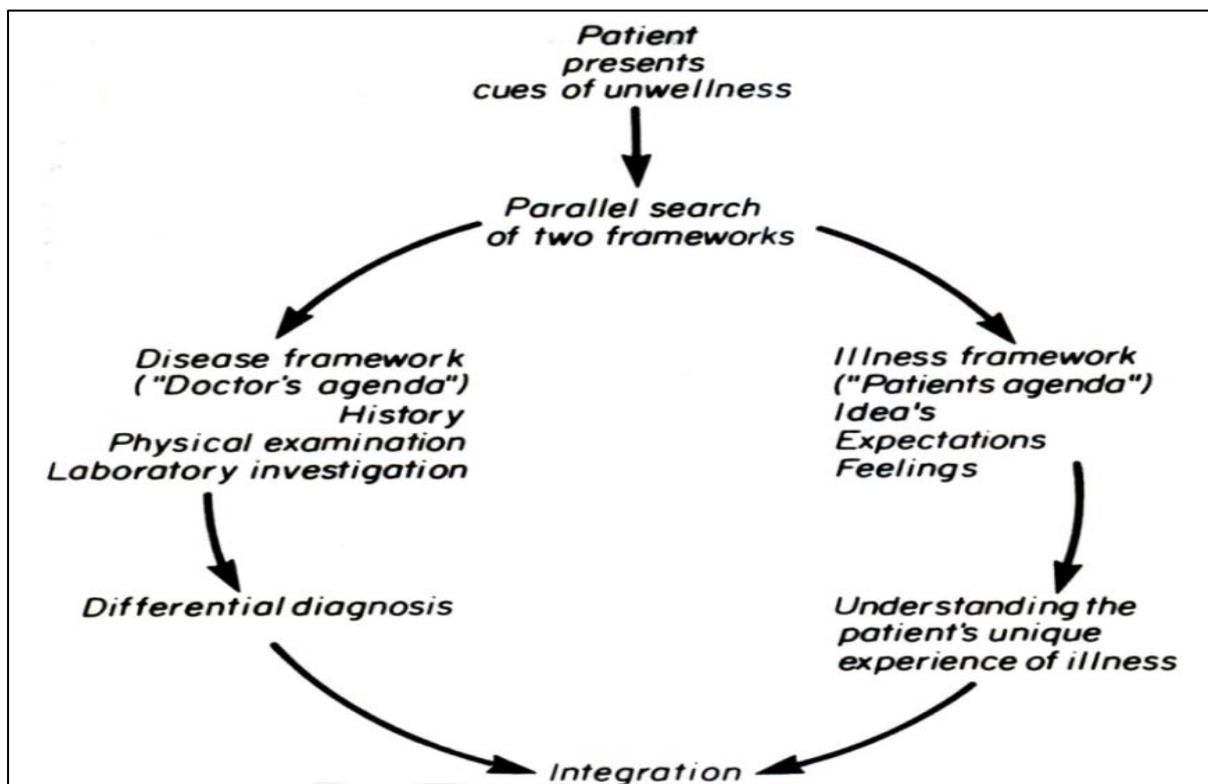


Figure 4.9: The Disease-Illness Model (Source: Levenstein et al 1989:109)

4.4.2.1 Summary of the model

This model focuses on the patient and unpacks the concepts of disease and illness in relation to the medical practitioner treating the patient. Silverman, Kurtz and Draper (2005:63-64) argue that:

“disease and illness normally coexist but one of the great fascinations of medicine is how the same disease can cause remarkably different illness experiences in every individual. The variation between each patient’s reaction to their [sic] similar symptoms or to a common diagnosis is enormous.”

The statement above clearly indicates that each individual patient is a unique case in the health-care system. No two patients experiencing the same pain will tell their story of an illness in the same way. This model caters for the individual and his or her agenda, which includes ideas, expectations and feelings which could assist the HCP to understand the individual’s unique experience of his or her illness.

This model details the core focus of the evolving conceptual framework. A health-care model needs to cater for the patient in a medical setting. Health communication must be interactive in the health-care system for treatment to be effective. Hugman (2009:16–17) states in this regard that *“effective communication takes place only when there is interaction between the parties, when the sender seeks a response and the recipient is actively engaged”*. Both the HCP and the patient need to be actively engaged in conversation in order for the HCP to obtain leads or clues from the patient regarding his or her experience of the illness. In the case of diabetes, each patient’s experience of living with this illness is unique and HCPs need to listen to patients in order to develop effective treatment plans that cater for their lifestyles.

4.4.2.2 Ideas

This tenet emphasises that patients have preconceived ideas about their illness, the symptoms they are experiencing and how they diagnose their condition. Patients usually feel subservient to explain these symptoms to the HCP and therefore act in a passive manner towards the HCP. The HCP must encourage the patient to open up

(Levenstein et al 1989:112). Hugman (2009:51) emphasises the importance of education in the health-care environment. Levels of education can negatively affect the HCP-patient relationship in relation to openness. This is clearly visible in the South African public health-care system, where many patients who access public health-care facilities are generally from disadvantaged socioeconomic backgrounds, having received little or no formal education. Illiteracy is high in South Africa and this adds to the uneasiness of patients with regard to communicating effectively with HCPs.

Hugman (2009:51) points out how levels of education can alter interpersonal communication in the health-care system owing to a lack of medical knowledge from the patients' perspective, but that lived experiences from their perspective can alter their confidence to speak up and express their opinions about the illness they are diagnosed with. A point noted in his discussion emphasises *“educational achievement is not necessarily an indicator of knowledge or intelligence in relation to health and medicine”*. HCPs need to motivate patients to communicate their thoughts and feelings on their illness. This discussion ties in with the notion of “social distance”, which can be defined as the wide variety of dissimilarities that exist between HCPs and patients. Society has placed great emphasis on the superiority of HCPs in always “knowing best”. Street and Epstein (2008:257) add that *“clinician-patient differences in beliefs about health use of language, and health-related values create the risk of misunderstanding or bias”*. Social distance can lead to inadequate treatment and diagnosis being created because of inadequate communication being channelled through the HCP-patient relationship.

4.4.2.3 Expectations

The patient has certain expectations from the consultation with the HCP. The patient expects the HCP to help him or her during this consultation (Levenstein et al 1989:112). Patients would prefer that HCPs enter their world for the duration of the consultations. A relationship needs to be built between the HCP and the patient for effective health-care and treatment adherence (Silverman et al 2005:119-123). In treatment and care for diabetes, HCP-patient relationships need to be built over time to ensure that patients trust HCPs enough to inform them if they have defaulted on

treatment. Silverman et al (2005:119) also posit that the analysis of non-verbal communication in the interview session for diagnosis will display non-verbal communication by the HCP and the patient. HCPs can use these non-verbal actions as clues for further understanding the patient. Also, the patient will have certain expectations of the HCP in the form of non-verbal cues such as a simple smile, a warm welcome, a shake of a hand and all these factors will enable the patient to judge the care the HCP has for him or her as an individual. Non-verbal communication can contribute to building trust in the HCP-patient relationship.

Socially there is the expectation that HCPs are available to help the ill and save lives. This belief is also closely linked to the medical system: patients expect HCPs to treat and either cure or help them manage their illness.

4.4.2.4 Feelings and fears

During consultations with the HCP, feelings of anxiety relating to the unknown of the illness or diagnosis lie inside the patient, either unconsciously or consciously. The HCP-patient relationship can also be a feared relationship from the patient's perspective owing to the traditional biomedical approach where the HCP knows best (Levenstein et al 1989:112–113). In the medical system, the notion of the self and self-awareness is vital and patients need to understand themselves adequately in order for them to be able to engage in interpersonal relationships in health-care settings. According to Suchman (1998:14), in order for individuals to be fully present in a relationship they need to be aware of their own feelings and act in accordance with them. In line with humanistic (fear, anxiety) and socialistic values (being perceived as ill in society), it is natural for patients who enter the medical system for diagnosis and treatment to be anxious beings. The fear of the unknown exists with diagnosis and treatment options. Banerji (1989:178) explains from a social perspective that individuals who belong to communities are embedded in these communities and their way of life. Hence from a social health-care perspective, an individual will perceive a health problem in a certain manner and thus judge treatment options available from a specific point of view, related to his or her community. In the case of diabetes, an individual will fear, for example, based on his

or her preconception of an illness associated with sugar levels being imbalanced or the inability to live a normal life, because he or she cannot consume certain foods.

4.4.2.5 Summary of the disease framework: “doctor’s agenda”

According to Levenstein et al (1989), the disease framework or the so-called “doctor’s agenda” explains the typical medical route which HCPs follow in order to diagnose and treat patients, similar to the conventional biomedical framework in health-care (see chapter 2). The doctor interviews the patient for a conventional historical medical background to learn his or her family history. This assists the HCP to reach diagnosis from this information. Thereafter, a conventional physical examination occurs to analyse the patient physically. This is followed by laboratory investigations, and in time a diagnosis is reached (Levenstein et al 1989:109).

Berry (2007:46) postulates that HCPs conventionally followed a paternalistic view to medical care, as illustrated above. However, over time, the patient’s perspective was gradually catered for in the medical system, as indicated in this model. The HCP was conventionally interested in getting the job done by confirming the diagnosis. The patient used to be a subservient individual who received treatment, with no ability to intervene and add his/her opinion. Minaire (1992:373) clearly expresses this view as follows: *“Illness is the clinical situation of a patient suffering from a disease. Little consideration is usually given to the sufferer in this concept, much more being given to the disease itself.”* The point is reiterated that disease is not the only concern –the person living with the illness is equally important. The HCP has the ability to cure, without any actual lived understanding of the individual’s feelings or fears associated with the illness.

4.4.3 HCP-HCP Model illustrating potential barriers to teamwork relationships

This model was developed in 1985 by the theorists Northouse and Northouse to illustrate the barriers that can exist in HCP-HCP relationships which might hinder effective teamwork. The model (see figure 4.10 below) illustrates three problem areas that can exist in HCP-HCP relationships, namely *role stress*, *insufficient*

interdisciplinary understanding, and autonomy struggles. Teamwork is essential for effective patient care. If HCPs do not work collaboratively, patients are disadvantaged. According to Ghaye (2005:33):

“the fundamental processes for developing reflective health-care teams are collegial and public ones. This involves honest dedication to self-critique and continuous improvement and a willingness to take some risks when advocating for positive change.”

In the modern health-care system, teams need to work together, the role of each team member needs to be clearly differentiated and ongoing training must occur for effective disease management. This model works well as a departure from the HCP-Patient Interaction Model, since HCPs face barriers to effective treatment and care as displayed in this model and in order for the patient to become the priority for effective service delivery, teams need to improve their work relationships for effective patient care. According to Johns Hopkins Medicine (2011b:19), teamwork is essential for effective diabetes care and research indicates that *“basic health-care is more complicated in people with diabetes, it’s better to have a team of professionals who have specialized knowledge about various aspects of the disease”*. Doctors and nurses, among other medical team members, must work collaboratively to ensure effective long-term diabetes treatment adherence in patients.

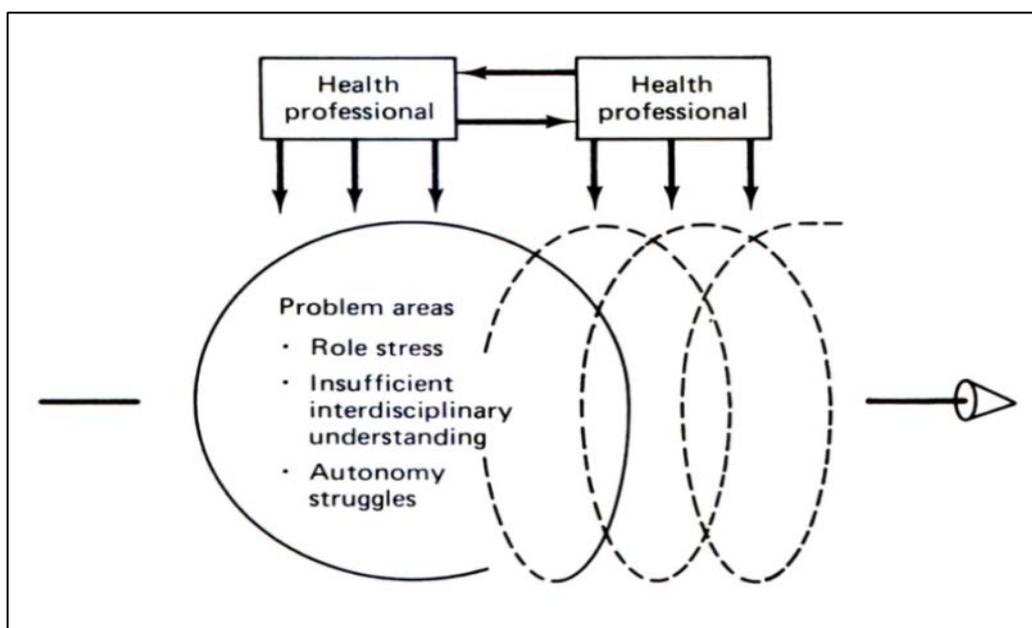


Figure 4.10: Potential barriers to effective communication in health-professional to health-professional relationships (Source: Northouse & Northouse 1985:96)

4.4.3.1 Role stress

In the health-care system, HCPs encounter role stress in the following ways: the nature of the health profession; and being stressed because of the type of work they are engaged in on a daily basis. Attending to sick patients on a daily basis and diagnosing and communicating to patients about life-threatening health issues can affect HCPs negatively. This tenet emphasises two categories, namely role conflict and role overload. Role conflict refers to conflict that occurs in the actual role the HCP performs – for example, nurses are overburdened with numerous tasks that are sometimes not even related to the nursing profession (Northouse & Northouse 1998:94-95). Doctors are overburdened with numerous tasks not only limited to actual medical care for the patient.

According to Feldman, Novack and Gracely (1998:1626), managing diabetes care indicates how the role of the HCP becomes problematic in providing effective health-care for the patient. Managed care affects patient-provider relationships since the ideal of placing the patient's interest first does not occur. The role of the HCP shifts from providing conventional health-care towards managing finances relating to health costs. HCPs are constantly faced with role overload since they need to perform more than one responsibility in the health-care system and HCPs are also faced with emergencies on a daily basis, which further adds to the unpredictability of their work load. Role overload contributes to stressful conditions for HCPs since they are constantly busy and faced with challenges. Price and Hooijerg (1992: 649) argue that HCPs who are faced with role stress are affected psychologically since they are faced with the same medical setting on a daily basis, which includes attending to sick patients continuously, which leads to emotional and psychological distress. Kelloway and Barling (1991:294) indicate that key contributors to role stress include *emotional exhaustion* and *depersonalisation*, which can also lead to burnout in HCPs owing to the nature of the work they are involved in. Role conflict also contributes to emotional exhaustion in HCPs since conflicting roles in the health-care system can affect HCPs emotionally.

As indicated in chapter 2, the South African public health-care system is faced with major challenges such as staff shortages and economic constraints, which contribute negatively to health-care service delivery. Role stress is a factor that many HCPs face in South Africa, since they are overburdened with work in the public health-care

system. Narayan, Gregg, Fagot-Campagna, Engelgau and Vinicor (2000:82) indicate that diabetes is a global health concern impacting on cost owing to the increase in diagnosis. In order to overcome role stress in the form of conflict and overload, collaborative teamwork needs to occur in health-care relationships. HCPs must work together and also support each other for work overload to be reduced. According to Baggs (1998:184), *“collaboration implies an interaction that is contemporary, with input and responses from each participant, allowing for a synergistic building to better care delivery”*. Teamwork is essential for effective patient care and can be a contributing factor towards reducing role stress in the South African public health-care system.

4.4.3.2 Insufficient interdisciplinary understanding

This tenet emphasises how a lack of interdisciplinary knowledge between treatment team members in a medical setting can cause a hindrance to effective treatment care for the patient. If HCPs are not able to communicate effectively with each other the patient will be disadvantaged. HCPs should educate themselves on the core duties that each HCP performs. For example, a nurse is not responsible for administrative duties in a clinical setting: instead, a clerk is responsible for admin-oriented tasks. The role of each HCP should be acknowledged in order for conflict to be avoided in teamwork. Interactive communication must occur to avoid conflict situations (Northouse & Northouse 1985:100-101).

A study conducted by Kettunen, Poskiparta, Kiuru and Kasila (2006:12) indicated that positive change can occur as a result of active nurse-patient relationships in primary health-care. From this study, it is clear that nurses are now also involved in counselling, and not only psychologists or medical doctors. As indicated in chapter 2 and previously in this chapter, challenges in the medical system cause restrictions on patient-doctor consultation time owing to staff shortages in the South African public health-care system. Nurses are now involved in providing counselling to patients, and medical doctors need to become aware of these added responsibilities of nurses so that conflict can be avoided. Doctors cannot provide individualised planning per individual patient for diabetes treatment owing to time constraints, but nurses can spend more time with patients.

4.4.3.3 Autonomy struggles

Freedom in the medical system is limited by the qualification level of a HCP, and all medical professionals do not have freedom of authority with patients. The highest held authority figure in the medical system is usually the medical doctor and he or she has the autonomy to self-direct or self-govern patients (Northouse & Northouse 1985:103). Nurses and all other HCPs usually do not have the authority to admit and discharge patients, whereas the medical doctor does have this type of authority. This means that because of autonomy struggles, problems can occur in the medical system between HCPs. Ghaye (2005:191) argues that medical professionals should share skills and knowledge in order for the working environment to be effective. Teamwork “connection” ensures that effective learning and understanding of individual job descriptions occurs. The process of *connectedness and sharing* can be achieved through practising the *key team attributes* listed below:

- creating and sustaining trust
- building team cohesion
- meaningful communication
- supporting each other.

HCPs need to overcome their autonomy struggles through teamwork and adherence to the key team attributes listed above. Foy, Hempel, Rubenstein, Suttorp, Seelig, Shanman & Shekelle (2010:255) argue that interactive communication ensures effective patient care because of collaborative teamwork:

“Interactive communication methods include initial joint patient consultations, regular specialist attendance at primary care team meetings, and telepsychiatry with primary care physicians, scheduled telephone discussions, and shared electronic progress notes”.

4.5 CRITIQUES OF HEALTH COMMUNICATION MODELS

The health communication models explained in section 4.4 above display barriers that can affect wider HCP-patient and HCP-HCP relationships in the medical environment. The HCP-patient relationship needs to cater for patient-centred care as catered for in the Disease-Illness Model. This model is a combination of the biomedical and biopsychosocial models as discussed in chapter 2 (Levenstein et al, 1989). However, this model caters for patient-centred care but needs to include more cognitive aspects from the patient's perspective that can affect health-care (adapted from Mead & Bower 2000b:1087; Mead & Bower 2002a:51). Also, this model needs to incorporate the social dimension to health-care-related to the individual patient being treated, that is, family support and cultural tolerance (Ong, De Haes, Hoos & Lammes 1995: 903, 905). The model is lacking in that it does not include the element of teamwork support in medical care as illustrated in the HCP-HCP model. According to Mechanic (1998:xi), *“many persistent problems in medical care arise because of failures in communication with patients and their families, ambiguity of authority, breakdowns in communication and coordination among professional caretakers, and poor teamwork”*. HCPs need to speak to one another when dealing with patients and teamwork must occur with treatment processes. Different health-care professionals need to collaborate to ensure that effective care and treatment are achieved for the patient (adapted from Deneckere, Euwema, Lodewijckx, Panella, Mutsari, Sermeus & Vanhaecht 2013:99–100).

4.6 CONCLUSION

This chapter reviewed existing models and theories in relation to the social and cultural context of diabetes health-care. The literature was reviewed explaining and acknowledging the need for patient-centred care, culture and family as a context for diabetes health-care. This chapter explicated the social dimension in relation to patient-centred care, culture and family in relation to diabetes. The literature explained that these factors are acknowledged and noted as being important in health-care service delivery, but the cultural, family and health communication

models lack comprehensiveness. In the next chapter, the conceptual framework will be developed with the aim of counteracting these limitations as reviewed in chapters 3 (part 1) and 4 (part 2) of the literature. In the next chapter conceptual framework is developed and presented.

CHAPTER 5

TOWARDS A CONCEPTUAL FRAMEWORK: A MODEL OF HEALTH COMMUNICATION DYNAMICS FOR PATIENT-CENTRED CARE

5.1 INTRODUCTION

The preceding chapters reviewed various health communication models in relation to intrapersonal and interpersonal communication (related to the social context: culture and family) for the purposes of this study. The aim of this chapter is to build a conceptual framework expanding the health communication models reviewed in chapters 3 and 4. A model is developed from a synthesis of the literature reviewed which related to health communication (from a cognitive behavioural change perspective), culture and family models, HCP-patient and HCP-HCP relationships. This synthesis elaborates constructs that are lacking in the literature towards developing a single, comprehensive model.

In the theoretical models reviewed in chapter 3 the focus was on cognitive behaviour change with regard to individual patient's experiences, attitudes and beliefs, relating to an illness which, for the purposes of this study, was diabetes. Many factors impact on health behaviour as explained in chapter 4 (section 4.2). In order for patient-centred care to be practised in an interactive way, healthy communication must occur in the HCP-patient relationship in the treatment and management of diabetes.

The reason this model was developed from the literature for a South African public health-care context specifically, was to move away from the conventional health-care professional-oriented care-approach (as practised in this country and discussed in chapter 2) towards a more patient-centred care approach (where individuals from diverse backgrounds are catered for) to work towards effective diabetes management. As indicated in chapter 2, diabetes as an illness is on the increase with more undiagnosed cases, and this is a major concern for South Africa.

5.2 A MODEL OF HEALTH COMMUNICATION DYNAMICS FOR PATIENT-CENTRED DIABETES CARE

As explained in the literature cognitive behaviour change impacts on people's mental ability to decide whether or not they should engage in positive behaviour change. A person experiences communication that occurs within the self as an internal activity. This type of communication is important in health-care since it impacts on how individuals will manage their illness by either seeking help (or not) and by maintaining treatment adherence or becoming negligent towards medication. Any conceptual framework needs to take into account the whole person at an individual level, where the patient is catered for in the (public) health-care system. For an illness such as diabetes, patient-centred care needs to be incorporated into HCP-patient sessions, which must be interactive in nature, in order for the patient to be able to communicate his or her concerns to the HCP regarding his or her individual beliefs, and values in relation to cultural concerns that may arise in the treatment process. Even though patient-centred care is acknowledged and noted in the literature, it is lacking in most of the health communication models as discussed in chapter 3: instead, the focus is on an individual from a cognitive perspective. These models and theories focus on persuasive communication as opposed to interactive, dialogical communication.

Social factors such as culture and family are also acknowledged in the literature (as discussed in chapter 4) for inclusion in diabetes care. However, the social models discussed lack constructs and do not display how the HCP caters for these key factors in service delivery. The cultural and family models reviewed in the literature either emphasise culture from a nursing perspective specifically or are more suited to nursing curricula. The family models acknowledge family at two levels, namely the family is accounted for as a whole in relation to the patient, and how the family affects the patient and vice versa. The context of this study was to incorporate family as a support system in public health-care as acknowledged in chapter 4 (section 4.3.5). The literature was thus reviewed in order to create or develop a conceptual framework that displays communication dynamics at a comprehensive level, which moves away from the biomedical health-care perspective to patient-centred approach for South African public health-care facilities in relation to diabetes care.

Figure 5.1 below represents the theoretical constructs that were synthesised from the literature in order to develop a comprehensive health communication model for diabetes health-care in South Africa.

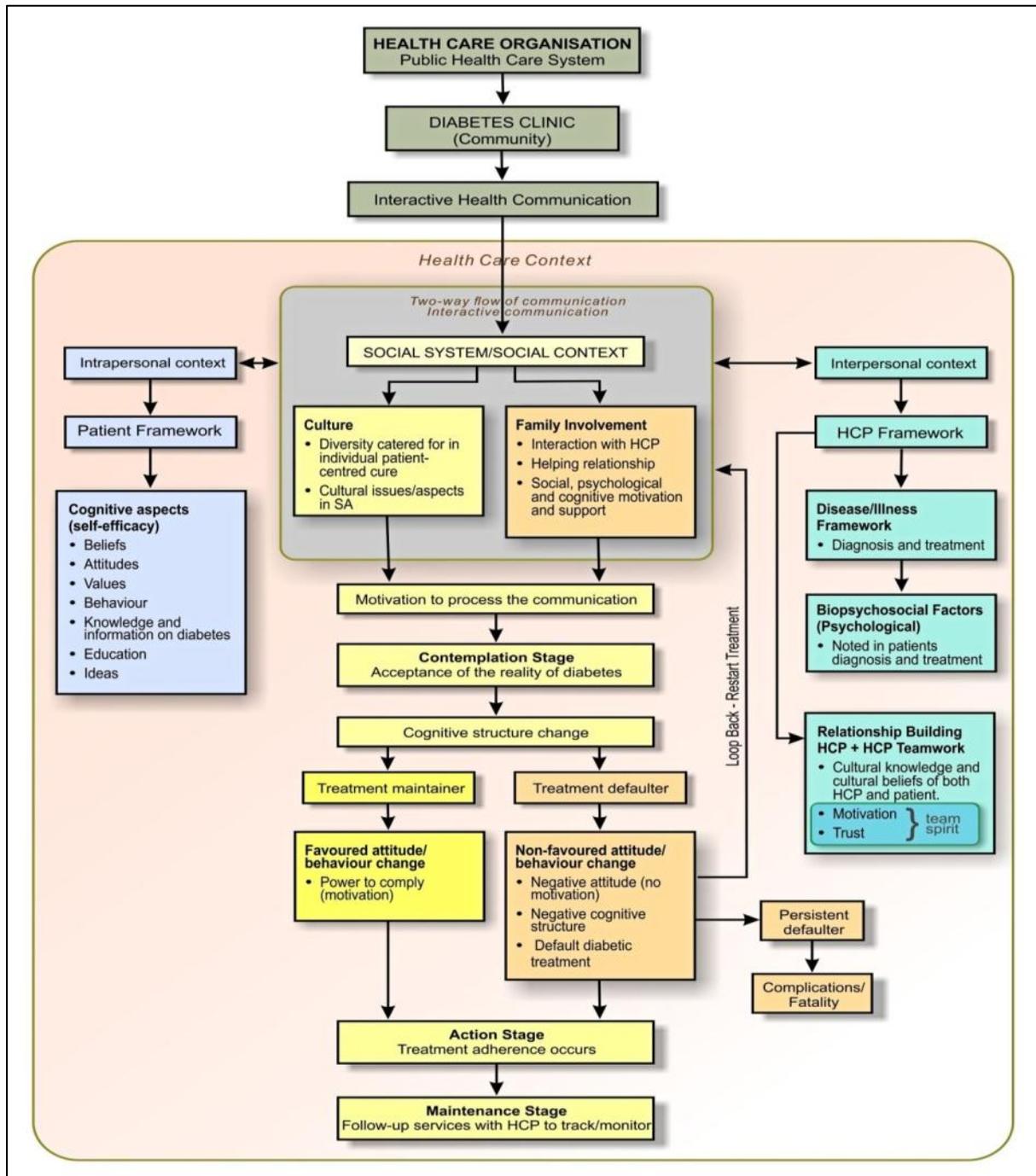


Figure 5.1: A model displaying health communication dynamics for patient-centred diabetes care

In the sections below a full explanation will be provided of the constructs/tenets of the conceptual model developed. This model was synthesised from the literature

reviewed in chapters 3 and 4. The key theoretical statements from the respective models and theories reviewed which contributed to the development of this comprehensive health communication model include the following: intrapersonal communication (patient context); interpersonal communication (HCP-patient/HCP-HCP context); the social system which consists of the constructs such as culture and family (which form the core of the model); and persuasive behaviour change communication.

The health-care organisation included in this model refers to the public health-care system as contextualised in chapter 2. A need exists for South African public health-care to try and move away from the inconsistencies of the past such as inadequate or limited health-care facilities, medicine and staff shortages, which have impacted negatively on public health-care service delivery, towards a more patient-centred approach to managing diabetes as an illness in South Africa. As discussed in chapter 2, the public health-care system is structured towards biomedical health-care. A shift needs to occur towards patient-centred care which caters for the social context in relation to the individual patient being treated. The diabetes clinic refers to the community “care centre” in the hospital where patients receive diabetes care.

The construct/tenet *interactive health communication*, occurs in the HCP-patient relationship where the HCP persuades and educates the patient on diabetes as an illness. Interactive health communication (as a process) occurs via the two communication contexts, namely intrapersonal communication and interpersonal communication that occur in the social context for diabetes health-care. These two contexts will be explained below.

5.2.1 Intrapersonal communication context

The intrapersonal context can be understood as a cognitive, internal process regarding the individual patient’s beliefs, attitudes and values, and it displays behaviour patterns according to these psychological ideas. These cognitive processes affect the patient’s behaviour or behavioural intention relating to diabetes health-care and treatment adherence patterns. The whole person (patient) needs to be catered for in the health-care system in order for patient-centred care to occur.

Psychological and cognitive factors relate to self-efficacy in patient care. Individuals need to be educated on diabetes in order to be able to make informed decisions about their treatment and care. The intrapersonal context includes the *patient's framework and cognitive factors* (pertaining to self-efficacy).

5.2.1.1 The patient's framework

Each patient's framework is unique to him or her while being treated for diabetes in the public health-care system. This framework emphasises patient-centred care since it centres on individuality in relation to the social context of health-care (the central context of this model). Even though patient-centredness is acknowledged in the literature as a contributing factor to diabetes care, most of the seminal intrapersonal health communication models discussed in chapter 3 avoid this inclusion. The literature reviewed in chapter 4 indicates that patient-centredness is required in the medical system in order for treatment adherence to occur while the social context of health-care needs to be emphasised in order to cater for diversity in treatment care.

5.2.1.2 Cognitive factors

Patients have cognitive feelings about their diagnosis and illness. Psychological factors such as beliefs, attitudes, values, ideas, expectations and knowledge of the illness can impact on behaviour change patterns the individual patient seeks to follow. Patients experience cognition at an intrapersonal level and these factors need to be catered for in the medical system since they impact on patient behaviour change patterns. The health communication models discussed in chapter 3 emphasise cognitive behaviour change patterns that patients experience and act upon. These cognitive feelings are linked to the social context of health-care and need to be communicated to the HCP. Cognition is related to self-efficacy and patient-centred care, where the individual is treated medically and biopsychosocially.

5.2.2 Interpersonal communication context

Communication in the health-care system must occur at a two-way level between both in HCP-patient relationships and HCP-HCP relationships in order for patient-centred care to be practised in the medical system. The interpersonal context is made up of the following tenets/constructs: *relationship building*, *the disease framework* and the *biopsychosocial factors* catered for by the HCP in relation to individual patient care. These are explained below.

5.2.2.1 HCP framework

The HCP is the health-care provider/health-care professional who provides medical care and support to the patient. The HCP emerges from the interpersonal context of this model because he or she needs to practise interactive communication which occurs in a two-way, dialogical communication pattern with the patient for diabetes diagnosis, lifestyle analysis, treatment adherence and the inclusion of the social context with regard to treating the individual patient. The HCP needs to reassure the patient about his or her health and illness, and this is therefore a vital communicator in this model.

5.2.2.2 Relationship building: HCP-HCP teamwork

Relationship building is related to this context since interactive communication needs to take place in the HCP-HCP relationship in order for effective teamwork to occur. The team spirit needs to display characteristics such as motivation, trust and care in order for optimal patient-centred care to occur. Teams of doctors, nurses, and other health-care professionals/providers need to communicate interactively in order for individual patients to be catered for. HCPs need to educate themselves with cultural knowledge and cultural beliefs in relation to the individual patient as well as their own personal bias with regard to how they perceive other cultures.

5.2.2.3 The disease framework

This construct emphasises the biological or biomedicine aspect of health-care in relation to diagnosing and treating illnesses from the HCP's perspective. The HCP's medical knowledge is incorporated into the treatment system in order for effective patient care to occur. The HCP discusses health-care diagnosis and treatment options available with the patient. Patient-centred care is practised in this phase as well and the social context or social system remains at the centre of the entire model.

5.2.2.4 Biopsychosocial factors

Biopsychosocial factors include the psychological issues that the individual patient experiences in relation to his/her cognitive state of mind (this construct/tenet links to construct/tenet 5.2.1.2 "*cognitive factors*" as discussed above). This construct/tenet was included in the interpersonal context since the doctor needs to assess the psychological (cognitive) factors which are affecting the individual patient before the HCP can motivate the patient to accept his or her illness and work towards treatment adherence. These factors work in direct relation to the patient's social context which forms the centre of this communication model since it impacts on patient-centred care for diabetes.

5.2.3 The social system/social context

The social system or social context forms the central construct/tenet of this model since it includes the constructs of culture and family in an interactive patient-centred health communication model for diabetes care. This comprehensive approach is often lacking in single models discussed in chapters 3 and 4.

Social factors are noted in health-care service delivery for diabetes (as explained in chapters 3 and 4), but they exist in isolation or are of limited nature (limited constructs) in existing health communication models. The social system must expand the social context to health-care which, for the purposes of this study, includes culture and family as separate constructs of health-care.

5.2.3.1 Culture

The patient's cultural beliefs and values affect health-care (as reviewed in chapter 4). HCPs must be tolerant towards diverse cultures in order for treatment adherence to be effective. The notion of patient-centred care is reiterated together with interactive health communication since patients can communicate these concerns if they are given a chance to do so. Thus individual treatment plans can be created to ensure that patients adhere to their treatment regimes.

5.2.3.2 Family

Helping relationships in the form of social and psychological motivation are required from family members for diabetes care. As reviewed in the literature in chapter 4, family support contributes to effective diabetes self-care and management of this illness. Family members can advise the patient effectively towards achieving treatment adherence.

5.2.4 Motivation to process the communication

This tenet explains that after both the patient and the HCP communicate in an interactive manner in the social context, the individual patient's cognitive mind-set is taken into consideration together with the disease framework (illness and treatment options). The patient is motivated by the HCP to absorb the communication at this phase of the model, which then leads to the next phase where the patient accepts the diabetes.

5.2.5 Contemplation stage

At this stage, the patient contemplates his or her illness and accepts that he or she has been diagnosed with diabetes and understands the reality of the illness. This construct leads to the next important phase in the model since the patient (after being educated, interactively communicated with and individually catered for in the

social context) decides on the cognitive structural change route he or she will follow with regard to his or her diabetes treatment patterns.

5.2.6 Cognitive structure change

This is a crucial construct/tenet of this model since the patient's cognitive mind-set will determine the structural change route followed. If the patient feels that he or she was persuaded and motivated sufficiently by the HCP, a favoured attitude will occur and behaviour change will be inclined towards maintaining treatment adherence and managing the illness. However, if a non-favoured or negative attitude occurs cognitively, the patient will not comply and treatment adherence will not be maintained since he or she will default and not see the merit in taking his or her diagnosis seriously. This patient will be picked up as a defaulter when he or she returns to the diabetes clinic (or when he or she is ill and requires medical help) and will need to re-start the entire process. This model caters for both a favoured and non-favoured route to attitude and behaviour change since two types of patients need to be catered for: treatment maintainers and treatment defaulters.

5.2.6.1 Treatment maintainer: favoured attitude/behaviour change

If this route is selected, the patient will favour behaviour change with a positive attitude by displaying the power to comply. The patient will be motivated effectively in the social context and a positive cognitive structural change will be managed by the individual in his or her own treatment plan.

5.2.6.2 Treatment defaulter: non-favoured attitude/behaviour change

Contrary to the route above, if this route is selected by the patient, no behaviour change will occur since the patient will hold a negative attitude towards his or her diagnosis and treatment adherence plan. If no motivation occurs, a negative structural change is implemented and diabetes medication is defaulted. The patient needs to re-start the entire process when he or she returns to the diabetes clinic. HCPs will communicate with the patient to understand why default occurred and

endeavour to restructure the treatment plan according to the individual's further needs.

5.2.6.3 Persistent defaulter

The treatment defaulter who experiences a non-favoured attitude or behaviour change has two options: he or she can either choose to change his or her attitude and follow the "loop back" to re-start the treatment process from the social system/context (where support is provided); or he or she can *persistently default* by refusing to change his or her attitude, which would then lead to further medical *complications and fatality*.

5.2.7 Action stage

Both the treatment defaulters and the treatment maintainers eventually reach this stage where they take action and work towards managing their diabetes by maintaining treatment adherence. The HCP will continue to work with the patient until he or she reaches this stage. Defaulters need to revert back to the initial stages of the model in order for the treatment process to start all over again. Alternatively, their condition deteriorates significantly and they are hospitalised.

5.2.8 Maintenance stage

At the stage, the patient is coping well with his or her diabetes and is living a healthy lifestyle. The stage theories were criticised in chapter 3 for being too linear in maintaining health-care. However, this model is comprehensive and incorporates both the HCP-patient relationship and the HCP-HCP teamwork approach towards managing diabetes in the social context relating to patient-centred care. The HCP and the patient do follow-up sessions to track or monitor patient management of diabetes. If problems are picked up or lifestyle changes occur, they are addressed in these follow-up sessions to ensure that treatment adherence is maintained by the individual.

5.3 CONCLUSION

In this chapter, a comprehensive conceptual framework was developed for diabetes health-care in South Africa. The model was synthesised from the literature in order to develop a single health communication model that displays interactive HCP-patient communication emphasising patient-centred care by incorporating the social context of diabetes health-care. In the next chapter the research methodology will be discussed.

CHAPTER 6

RESEARCH METHODOLOGY

6.1 INTRODUCTION

This chapter explains the methodological orientation for this study. A qualitative case study design was used to conduct in-depth research at Stanger Hospital's diabetes clinic. Yin's (2014) protocol was adapted together with Stake (2000), Punch (1998), Tesch (1990), Patton (1999) and Morse et al (2002) for case study research, data analysis and data interpretation, methods of triangulation, and the question of reliability and validity was used to justify the selected approach and its application to the single case study research conducted. The specific data gathering techniques that were used included non-participant observation, in-depth interviews and documentation.

In this chapter, detailed descriptions of the selected geographical area and data collection techniques with reference to the three methods of data collection, are discussed in detail. Furthermore, access and negotiation procedures are outlined and sampling procedures and recruitment of the patients and health-care professionals (HCPs) are explained. A discussion is provided on the question of sample sufficiency in relation to sample size in qualitative case study research and its application to the selected research conducted. The manner in which the data was analysed and interpreted is outlined according to Tesch's (1990 in Poggenpoel 1998:343–344) protocol for qualitative research designs. The issue of reliability and validity is examined, while case study protocol and pertinent ethical aspects of the study are detailed in relation to confidentiality, informed consent and the question of debriefing. Finally, triangulation and its enhancement of the credibility and validity of the data collected are explained.

6.2 METHODOLOGICAL ORIENTATION: QUALITATIVE RESEARCH DESIGN

A qualitative research design was selected to collect data for this study. The reason for opting for a qualitative approach was to cater for the following factors, as outlined by Frankel and Devers (2000:253):

- **Inductivity.** The logic informing a qualitative research design is often inductive in nature, which explains how the research design and process should flow. Inductivity is viewed as a process which gives rise to or brings about the logic explaining how specific and complete the research design and process will be. According to Frankel and Devers (2000:253), *“the qualitative researcher’s task often consists of describing and understanding people and groups’ particular situations, experiences, and meaning before developing/and or testing more general theories and explanations”*.
- **Emergent and flexible research design.** With a qualitative research design, data generation is an open, flexible process. In order to understand communication dynamics in HCP (health-care provider/professional) and patient relationships for diabetes care, a flexible design was required where data could be induced. Thus data collection began when the fieldwork commenced. Relationships needed to be built between the researcher, the research participants and the actual field. By engaging with the field, immersion in the hospital setting could occur so that data collection and data saturation could take place. Thus, from day one, occurrences in the field impacted the ongoing phases of data collection.
- **Non-linearity.** This concept can be explained as a process where data generation and data analysis occur simultaneously. Non-linearity allows for rich data in a medical setting to be gathered, with analysis occurring from the start of data collection. In this way, the data generated can be used to answer the selected research questions of the study without first completing the collection of data.

A qualitative research design is defined as a methodology that produces detailed descriptions of the phenomena under investigation. According to Hansen (2006:4), qualitative research is sufficient to understand the social world. This methodology

assumes that there is no single reality or truth in order to understand the constructs under investigation. A qualitative methodology is best suited to studying human phenomena, because human beings are socially constructed. In the current study, immersion by the researcher ensured that lived experiences were gathered from diabetic patients.

Medical research is becoming more accepting of qualitative research methods to conduct in-depth analyses of medical settings as opposed to statistical data which can be generalised to different cases but lack an individual understanding of phenomena. The move towards qualitative research is justified by Malterud (2001:487) who states the following:

“Medical research needs diversity. We need to prevent methodological separatism and supremacy if the field of medical knowledge is to be expanded, not just strengthened or divided. Responsible application of qualitative research methods is a promising approach to broader understanding of clinical realities ... medical doctors should be reminded that scientific knowledge is not always the most important or relevant type of information when dealing with people.”

Many studies conducted at clinics have made use of qualitative case study methods to collect data in different medical contexts, examples being Bellin, Geiger and Gibson (1969), Nelkin (1973) and Strole, Langner, Michael, Opler & Rennie (1962).

To illustrate the value of using the qualitative methodology, several studies by other researchers were considered in the context of diabetes research based on HCP-patient relationships and communication dynamics for diabetes care. A study by Campbell Pound, Pope, Britten, Pill, Morgan and Donovan (2003) made use of ten qualitative studies of adult patient perspectives on diabetes. Lawton, Ahmad, Hanna, Douglas and Hallowell (2006:1003) conducted qualitative research to understand patients' experiences and views on service provision for diabetes treatment. They found that culturally sensitive services were a requirement by these communities (Pakistanis and Indians) in order to facilitate effective communication. Language and communication of culturally sensitive information were important with regard to these patients.

Wens, Vermeire, Van Royen, Sabbe and Denekens (2005:1, 9) conducted qualitative research to analyse GPs' perspectives on barriers and solutions to Type 2

diabetes patients' adherence to treatment. They found that GPs needed communication skills to ensure that patients' expectations were met for treatment adherence. *"GPs seem to be in need of communication skills to integrate the various expectations of physicians and patients regarding diabetes care"* (Wens et al 2005:1).

The study by Oftedal, Karlsen and Bru (2010:1500) aimed at analysing how support from HCPs assisted patients with Type 2 diabetes towards self-management of the disease. Focus groups were used to collect data from 19 adults (patients). The findings indicated that HCPs needed to be empathetic towards patients, tailor individual treatment plans and provide ongoing support to patients receiving treatment. Motivation from HCPs could ultimately lead patients to self-management of their diabetes.

These examples of studies using a qualitative approach to health-care indicate that in-depth information can be obtained by using a qualitative research paradigm, making it a suitable approach for this study.

6.3 A CASE STUDY APPROACH

According to Yin (2014:4), a case study approach is used when one needs to conduct an in-depth analysis in order to understand a particular social phenomenon such as the analysis of communication dynamics at a specific clinic. According to Yin (2014:17), a case study adds value to the overall study for the following reasons:

- It copes with the technically distinctive situation in which there are many more variables of interest than data points.
- It relies on multiple sources of evidence, with data needing to converge in a triangulation fashion.
- It benefits from the prior development of theoretical propositions to guide data collection and analysis.

A case study approach therefore enables the researcher to study a phenomenon in depth in its real-world context. According to Rowley (2004:211), *"an important strength of case study research is that it investigates a phenomenon in its context."*

This is why it recommends itself for use in professional research.” This allows the HCP’s and patients’ relationships to be studied in their real-world (medical setting) context. According to Yin (1999):

“for case studies, data collection may-and-should-involve a broad variety of techniques, not just a single technique such as conducting a site visit ... In using multiple sources of evidence, the goal during the data collection process is to amass converging evidence and to triangulate over a given fact.”

Multiple data collection methods, which included a semi-structured interview schedule and a non-participant observation schedule and documentation were used to collect data at the clinic. The semi-structured interview schedule was guided by theoretical propositions which guided the data collection and data analysis phases. As the fieldwork proceeded, documentation emerged as a third data collection method to further triangulate data collected in the field.

According to Yin (2014:51–52), the selection of a single case study design is appropriate under several circumstances, which include five rationales that can assist researchers. These include the following:

- **A critical case.** This involves clear circumstances in which propositions are believed true, which allows for the determination of whether propositions are true or correct or if other explanations are more relevant.
- **Unusual.** This entails a specific case deviating from everyday norms. It is worth documenting findings in this case since it reveals insight about processes.
- **Common.** These cases capture circumstances and conditions of everyday situations and provide insight about social processes.
- **Revelatory.** Such cases provide the opportunity to observe and analyse a phenomenon previously inaccessible to inquiry.
- **Longitudinal case.** This involves studying the same case at two or more points in time, to analyse how conditions and processes change over time.

The following reasons were used to justify the selection of a single case for this research: unusual, common case and revelatory.

The unusual case is beneficial in clinical research where findings can assist with analysing and gaining insight into disorders or processes that deviate from the norm. Regarding diabetes, research findings are worth documenting in order to reveal insight into aspects of health communication for this illness.

With regard to common case, this study was conducted at a single clinic which provided an in-depth approach to understanding HCP-patient communication for diabetes care and treatment. The data provided explanations for understanding communication dynamics and its ability to either facilitate or hamper treatment adherence patterns for diabetic patients in a provincial health-care setting that occur on a daily basis. The social context at this specific clinic and its geographical area were analysed in relation to diabetes health-care and patient adherence patterns.

Regarding the question of revelatory, no previous research had been conducted at Stanger Hospital's diabetes clinic as the clinic had been previously inaccessible for research owing to the fact that no separate diabetes clinic had existed. Instead, diabetes patients were consulted at the hospital's out-patient department. Hence the revelatory reason or rationale further justified the single clinic selection in order to conduct an in-depth analysis. In the past, diabetes-specific activities could only be accessed with difficulty as diabetic patients were mixed with other patients using out-patient facilities. The remaining reasons for using a critical and longitudinal case did not apply here because the study was not intended to test propositions for truth or to analyse the case in a longitudinal manner in order to judge how conditions or processes change over time.

Rowley (2004:211) emphasises the point that "*case study research starts with an analysis and description of the situation in one organization*". This justifies that a case study approach can be conducted at single site organisations, such as a diabetes clinic in the case of this research study.

Yin (2014:29) identifies the following five components that a case study approach should include:

- ***Its research questions.*** These refer to the actual research questions to be answered in the form of "who, what, where, when, how and why" (Yin 2014:29) (see chapter 1). Yin (2014:9, 14) states that a case study's research questions are more specifically how and why. These

relate to contemporary events over which the researcher has no control.

- ***Its propositions, if any.*** According to Yin (2014:30), “each proposition directs attention to something that should be studied within the scope of the study.” Propositions are viewed as a basis for reasoning or a starting point for further investigation from known facts. Propositions shape the focus of the study together with the specific research questions which help narrow the study’s perspective. This study did not make use of propositions since it followed a qualitative research methodology which was open and flexible. In addition, it did not use a specific basis or any known facts as a starting point for the research.
- ***Its unit(s) of analysis:*** The units of analysis refer to “who” or “what” is being studied (Babbie & Mouton 2001; Trochim 2006). The units of analysis in the current study included the HCPs’ staff members (treatment team) and the patients (multiple individuals) who made use of the diabetes clinic for medical treatment and care. According to Brewer and Hunter (2006:88), the units of observation and units of analysis can differ in studies, or they can be the same. For the purposes of this study, the HCPs and the patients were regarded as the units of analysis as well as the units of observation (see table 6.1 below).
- ***The logic linking the data to the propositions.*** According to Yin (2014:35), this component assists with the study’s data analysis steps, which include: pattern matching, explanation building, time-series analysis, logic models and cross-case synthesis. The data collected should be assembled or combined with the initial propositions of the study. Even though Yin (2014) makes provision for different data analysis procedures as outlined above, this study made use of Tesch’s eight steps for interpreting and analysing data, which are discussed in section 6.9 below.
- ***The criteria for interpreting the findings.*** According to Yin (2014:36), this component arises in case study research when quantitative,

statistical analyses are used to analyse data collected and it is therefore not applicable to this study.

6.3.1 Types of case studies

Case study research design is distinct from other research methods because it does not include a formal design. However, Yin (2014:50) suggests that having some notion of a formal design can make the study stronger and easier to conduct. Yin (2014:50) identifies different types of case study designs namely, single case and multiple case designs. Each type aims at analysing the context of the case. However, the boundaries between the case and the context are often blurred and indistinctive. The design for this study was the single case with the units of analysis/units of observation being patients and HCPs.

As opposed to Yin's four types of case study design, Stake (2000) identifies three types, namely the instrumental, collective and intrinsic case study. The instrumental case study is aimed at providing insight into an issue or revising a generalisation. The focus is not the actual case, but something else. A collective case study refers to a study that includes a number of cases in order to investigate a general phenomenon (Stake, 2000). In this instance, the study can be categorised as an intrinsic case study where research was conducted to gain an in-depth understanding of the selected case with no intention of generalisations or theory building beyond the single case. This study focused on understanding communication dynamics at the diabetes clinic located at Stanger Hospital. The purpose was to understand how communication in the HCP-patient relationship and the HCP-HCP teamwork relationship contributed to positive or negative patient care and treatment adherence in the context of diabetes.

The table below provides an explanation of case study research (analytical features) as it was applied to this study:

Table 6.1: Case study analytical features as applied to the study

Case study research: analytical features	Applied to the selected case study
Each case has boundaries which must be identified at an early stage of the research.	Case study: Stanger Hospital's diabetes clinic: <ul style="list-style-type: none"> • HCP-patient communication dynamics • HCP-HCP teamwork relationships • Patient treatment adherence patterns • Interactive communication: facilitation or hampering of effective treatment adherence
Each case will be something in which the researcher is interested. The unit of analysis/unit of observation must be defined at the outset in order to clarify the research strategy.	The researcher was interested in conducting research at this specific diabetes clinic since no previous research had been conducted there. Interest was focused on understanding communication dynamics for diabetes as an illness. <ul style="list-style-type: none"> • The units of analysis/units of observation were patients and HCPs
Case studies seek to preserve the wholeness and integrity of the case. In order to achieve some focus, a limited research problem/research goal must be established that is geared to specific features of the case.	Against the background of the rising burden of diabetes, effective management of the disease has become essential to reduce complications and morbidity. Effective communication is central to this. <p>In this study, a case study research approach was used at Stanger Hospital's diabetes clinic to assess the quality of HCP-patient and HCP-HCP communication dynamics in disease management.</p> <p>A health communication model was developed (from a variety of other models) to explain the health communication process at the research site.</p>

(Source: Punch 1998)

6.4 GEOGRAPHICAL AREA OF THE CHOSEN RESEARCH SITE

The research was conducted at the Stanger Hospital's diabetes clinic. The hospital is located in central Stanger, an urban area surrounded by many rural areas. Stanger is a small developed town with only one public hospital but with many clinics located in surrounding areas. Stanger was renamed KwaDukuza in 2006, and the hospital falls under the ILembe district municipality in the KwaZulu-Natal Province of South Africa. The hospital hosts many different clinics, such as the diabetes clinic, an AIDS clinic and a maternity clinic, among others.

This research site was selected because the researcher is familiar with the area. A need also existed in Stanger for research at the local hospital in order to improve facilities and for the District and Department of Health in KwaZulu-Natal to become aware of service delivery and health concerns in the Stanger area. These needs came to the fore during previous research conducted by the researcher during her master's research at the AIDS clinic. The Department of Health in KwaZulu-Natal expressed its approval that research on diabetes care had been planned for this specific hospital. The District Manager revealed that no previous research had been conducted at the diabetes clinic at the hospital or in the entire district area.

The majority of people, who would normally access public health-care at the hospital, are involved in informal trading to make a living. Most of the population are black (68%) and indian (28%), with the white (3%) and coloured population (1%) in the minority. The estimated population is 250 000 (KwaDukuza Municipality 2011). The language spoken in this area is either English or isiZulu (KwaDukuza Municipality 2011). Language was not an obstacle for the researcher since she recruited only English-speaking patients for the research, although as explained in chapter 1 (see section 1.8), the language issue was noted as a limitation to the study. The justification for recruiting only English-speaking patients was so that the researcher could fully understand, interpret and analyse the data collected first-hand and avoid the use of interpreters or translators who might hamper the meaning of the data collected. Also, the sampling techniques, namely convenience and purposive, allowed for participants to be recruited based on the inclusion criteria for this study (see section 6.7.2 below). Patients were conveniently selected who were available at the clinic and willing to participate in the study. Even though the researcher was not fully fluent in isiZulu, she had a fair understanding of the language, which facilitated obtaining the gist of conversations conducted during the observation phases. However, the nurses assisted when help was needed with translation.

6.5 CRITERIA FOR INCLUSION OF PARTICIPANTS

In the sections below, the population characteristics of the patients and HCPs are explained together with the biographical data of the research participants. Detailed

information related to the processes involved in accessing the field (permission requests), the recruiting of participants and the fieldwork experiences are expanded on in section 6.7 below.

6.5.1 Population characteristics: patients

The following criteria were used for patient selection:

- The patient had to be diagnosed with either Type 1 or Type 2 diabetes at the time of recruitment.
- The patient had to be receiving treatment (either tablets or insulin injections) at the time of recruitment.
- The patients had to fill in an informed consent form and be willing to participate in the research.
- The patient could be either male or female.
- The patient could belong to any race (bearing in mind the races more prone to the illness as well as the racial profile of the selected geographical area).
- The patient had to be 18 years and older in order to be able to grant informed consent to participate in the study.
- The patient had to be English speaking.

Table 6.2: Biographical details of the research participants in the study

Pseudonym	Age	Race	Gender
Howard	72	Indian	Male
Ria	48	Black	Female
MJ	56	Indian	Male
Betty	46	Indian	Female
Frans	61	Black	Male
Isaac	43	Indian	Male
Stefan	75	Indian	Male

Pseudonym	Age	Race	Gender
Moses	49	Black	Male
Kevin	52	Indian	Male
Ruby	58	Indian	Female
Mo	49	Black	Male
Sarah	59	Indian	Male
Priya	39	Indian	Female
Vivian	37	Indian	Female
Harry	67	Indian	Male

A detailed description of each individual research participant is provided in chapter 7. The issue of race is included here to emphasise the susceptibility, of specifically, the Indian and black race groups to diabetes as an illness. The composition of the sample adhered to both convenience and purposive sampling techniques as explained in section 6.7.2 below. Patients who were available at the clinic and adhered to the inclusion criteria were conveniently selected.

6.5.2 Population characteristics: HCPs

The following criteria were used for selection of participating HCPs:

- The HCP had to be employed at the diabetes clinic at the time of recruitment.
- The HCP had to be providing medical care to patients at the diabetes clinic.
- The HCP had to provide verbal consent to voluntary participation in the study.

Table 6.3: Biographical details of the diabetes team (HCPs)

Health-care provider (HCP)	Qualification level/diabetes specialisation	Age	Race	Gender
Medical doctor	General practitioner (GP) (with a keen interest in diabetes)	47	European (Christian)	Male
Student nurse 1	Student nurse (general)	28	African (Zulu)	Female

	nursing)			
Student nurse 2	Student nurse (general nursing)	26	Indian (Hindu)	Female
Enrolled nursing assistant (ENA)	Enrolled nursing assistant (ENA)	40	African (Zulu)	Female
Staff nurse	Staff nurse (solely working with diabetic patients since 2004)	55	Indian (Hindu)	Female
Professional nurse	Professional nurse since 2007 (general nursing)	32	African (Zulu)	Male
Chief professional nurse	Chief professional nurse (solely working with diabetic patients since 2004)	50	African (Swazi)	Female

A detailed description of each individual research participant (HCP) is provided in chapter 8.

6.6 THE CASE STUDY PROTOCOL

Yin (2014:84) provides a four-step protocol that case study research should follow in order to increase reliability in this type of research (as indicated in the action column in table 6.4 below). As the chapter proceeds, each of these protocols will be discussed in detail as adhering to the case study approach.

Table 6.4: The case study protocol as applied to the study

Section	Action	Evidence	Application
A	Overview of the case study (Prepare/plan)	<ul style="list-style-type: none"> • Objectives • Issues 	Explore and describe communication dynamics
B	Data collection procedures	<ul style="list-style-type: none"> • Ethics • Presentation of credentials to the field • Logistics 	Access to patients/HCPs (population/sample/unit of analysis/unit of observation)
C	Data collection questions	Level 1: questions put to specific interviewees	

Section	Action	Evidence	Application
		<p>Level 2: questions asked about individual care</p> <p>Level 3: questions asked about the patterns of findings</p> <p>Level 4: questions asked about the entire study</p> <p>Level 5: normative questions about policy and conclusions</p>	
D	A guide for the case study report	Outline, format, documentation	Tesch's eight steps for data analysis

(Source: Yin 2014:85–86)

6.7 ACCESS, NEGOTIATION AND SAMPLING TECHNIQUES

Permission to conduct research at hospitals in South Africa is a tedious process that requires a lot of paperwork and patience on the part of the researcher. Recruiting, specifically patients, can be difficult at public health-care facilities owing to the nature of procedures and processes at clinics. The actual processes of recruiting patients and ethical considerations are discussed below.

6.7.1 Permission to conduct case study research at Stanger Hospital's diabetes clinic

Permission was obtained from the following bodies/people in order to conduct research at Stanger hospital's diabetes clinic:

- The University of South Africa (Unisa), Department of Sociology Ethics Committee.
- Stanger Hospital's CEO, Ms RT Ngcobo.

- Ilembe Health District Municipality manager, Ms S Dube (since the hospital was located within the geographical district of the Ilembe municipal area).
- The Department of Health in KwaZulu-Natal, chaired and managed in the sub-component Health Research and Knowledge by Dr E Lutge.

6.7.2 Sampling procedures and recruitment of the research participants

The two sampling techniques that were used to recruit participants for this study included purposive and convenience sampling. According to Keyton (2015:115), convenience sampling “*selects those people who are convenient to locate and identify as potential respondents*”. For this study, patients who received health-care at the diabetes clinic and were willing to participate were conveniently selected, provided they fitted the inclusion criteria.

Purposive sampling was used to recruit patients for the study. According to du Plooy (2009:123), “*where previous knowledge leads to a purposive sample being drawn that can guarantee the inclusion of certain population parameters (or characteristics), it would be termed a purposive quota sample.*” For this specific study, patients needed to fit certain inclusion criteria (population characteristics) and were therefore purposively selected. Neuman (2007:142) indicates that purposive sampling needs to be used in a situation where the researcher has a specific purpose in mind and is thus judgemental in selecting cases. Neuman (2007:142) further indicates that “*purposive sampling occurs when a researcher wants to identify particular cases for in-depth investigation. The purpose is less to generalize to a larger population than it is to gain a deeper understanding of types.*”

Difficulty was experienced in recruiting patients for the study. Consultation at the clinic was not by appointment, but conducted on a first-come, first-served basis which often resulted in a long waiting period for patients. Hence patients arrived early at the clinic to receive treatment and then waited and would then rush away after they were examined to attend to their personal day-to-day matters. The nurses allowed the researcher to introduce herself to the patients on Tuesdays but patients

were reluctant, preferring to consult with the doctor and leave instead of being interviewed with the possibility of missing their turn in the queue to see the doctor.

The medical doctor consulted only once a week on a Tuesday, making this the busiest day at the clinic. Patients waited in long queues before they were attended to. Therefore only a few patients could be recruited in the first week of the fieldwork process, with the majority recruited during the second Tuesday at the clinic.

According to Taylor, Faden and Kass (2010:450), *“the object of study in clinical research is generally a particular disease state or process. Potential patient-subjects are selected because they have characteristics that are relevant to the disease process under study, not because they are members of a particular community.”* The staff nurse assisted with recruiting of English-speaking patients as per the inclusion criteria for the study. The staff nurse was more of an insider to the patients since she had treated them over a long period of time and they trusted her more than the researcher. Also, the staff nurse reassured the patients that they would not miss their turn in the queue if they took part in the study. The staff nurse briefed the patient about the research in the presence of the researcher and requested if they would like to participate in the study voluntarily. The assistance provided by the staff nurse in the recruitment of the patients was in no manner biased in selecting patients that would praise services or indicate effective communication in order to please the nurses. Instead, these patients took part in the research because of their fluency in English, diabetes diagnosis and willingness to be part of the research process. Purposive sampling makes provision for such assistance in the recruitment of participants. The staff nurse adhered to medical ethics which dictates integrity.

According to Kumar (2011:212):

“as the main aim in qualitative enquiries is to explore the diversity, sample size and sampling strategy do not play a significant role in the selection of a sample. If selected carefully, diversity can be extensively and accurately described on the basis of information obtained even from one individual.”

The inherent nature of this study was to analyse communication dynamics at the diabetes clinic. Qualitative research studies, specifically case studies, are conducted to obtain in-depth analysis in contextual settings. Therefore diversity, as opposed to sample size, was the focus of this research since the study did not aim to make any

generalisations. Instead, the outcome was to gain an understanding of the different aims of the study. Thus a sample of 15 patients and seven HCPs was considered sufficient to obtain depth and richness in data.

6.7.2.1 Sample sufficiency/sample size and data saturation as applied to the case study

According to Mays and Pope (1995:109), *“it is said that qualitative methods tend to generate large amounts of detailed information about a small number of settings”*. Data saturation was achieved after the indicated number of interviews had been conducted with the HCPs and patients during the case study undertaken at Stanger Hospital’s diabetes clinic.

Data saturation was reached when replication started occurring in the data collected. The study had a strong theoretical underpinning and the data was therefore substantiated with a strong theoretical grounding as explained in the findings of the study (see chapters 7 and 8). According to Silverman (2010:144), sample sizes in qualitative research are often saturated according to the theoretical foundation of the study (as discussed in the literature review chapters). When data redundancy occurs or theoretical saturation occurs, then sufficient time has been spent in the field (Lincoln & Guba 1985). Hence irrespective of the amount of time spent in the field, if a researcher encounters data saturation, the fieldwork process is complete. This pertains to the research questions 2, 3 and 4 which are related to data collection specifically, since some research questions (example, research question 1) are also related to theory (see chapter 1). Theoretical saturation enables researchers to link or generalise findings to the theory as opposed to the sample or units of analysis selected for the study. This was the case in this study as it was focused on obtaining an understanding of communication dynamics as it occurred in the medical system and to link findings obtained to the theoretical propositions as opposed to generalising the findings to the entire clinic population. Yin (2014:42) defines this process as analytical generalisation, which is grounded on the design of the case study and empirically enhanced by its findings, which in turn is based on theory or theoretical propositions.

Kumar (2011:212) explains that qualitative researchers, unlike quantitative researchers, do not have a sample size in mind. Bearing this in mind, both these

research designs obtain a sufficient sample size once data saturation has been reached. While quantitative research is usually guided by a random sample because of the nature of the design, qualitative research is guided by the researcher's judgement to select a sample that will provide the "best" information. Kumar (2011:213) defines data saturation as "*a point where you are not getting any new information or it is negligible. This stage determines the sample size*". Kumar (2011:213) also notes that the saturation point is more applicable to data collection strategies which occur on a one-to-one basis as in the case of this study since in-depth, individual interviews were conducted with both HCPs and patients.

Saturation occurred after the first ten interviews were conducted since the researcher noted that no new information was obtained after the first ten patients. However, the researcher continued to interview another five patients for further verification. No new information was gleaned from these patients. Regarding the HCPs, the researcher aimed to interview all the HCPs employed at the diabetes clinic at the time the research was conducted.

According to Ritchie, Lewis, McNoughton and Ormston (2014:117), the following four reasons substantiate the use of small or sufficient sample sizes, in qualitative research:

- If data is properly analysed, very little new information will become available from additional fieldwork units. According to Ritchie et al (2014:117), "*this is because phenomena need only appear once to be part of the analytical map. There is therefore a point of diminishing return where increasing the sample size no longer contributes to new evidence.*" As indicated above, after ten interviews had been conducted, data saturation occurred, although the researcher conducted a further five interviews.
- Since qualitative research is not focused on statements *about incidence or prevalence*, there is no requirement or reason to provide statistics or estimates in relation to variables.
- Qualitative research yields rich detailed data, thus although "*there will be many hundred 'bites' of information from each unit of data analysis, sample sizes need to be kept to a reasonably small scale*" (Ritchie et al 2014:117).

- Finally, qualitative research involves lots of hard work and time invested by the researcher. It is not possible to conduct hundreds of in-depth interviews as well as years of observation unless the researcher is conducting a longitudinal study.

Adhering to the reasoning stated above and the case study approach to research, a sufficient sample was selected to analyse the different units of analysis/units of observation for this case.

6.8 DATA COLLECTION PROCEDURES

The three data collection methods used were in-depth interviews (see appendix E for semi-structured interview schedule: patients – see appendix D for semi-structured interview schedule: HCPs); the observation schedule (see appendix F); and patient documentation/forms (see appendix I); diabetic educational material (see appendix J). When adhering to a case study approach, Yin (2014:110) reiterates that *“one of the most important sources of case study evidence is the interview ... interviews are commonly found in case study research. They will resemble guided conversations rather than structured queries.”* In-depth interviews cater for privacy between the researcher and the research participants, and since case studies deal with human artefacts, interviews help unpack the units of analysis/units of observation and their experiences with regard to the area of focus.

The study also used direct observation where the patients and the HCPs were observed in their real-life setting, that is, in a medical setting at the diabetes clinic. Observations were conducted every day as detailed in table 6.5 below. Nurse-patient interaction and doctor-patient interaction, were observed on a general basis. Fieldwork observation was conducted to provide familiarity with the procedures and processes of the clinic and to understand how communication dynamics occurred in HCP-patient relationships and HCP-HCP teamwork relationships for patient care.

Table 6.5 summarises data generation activities, indicating the actual activities and the amount of time the researcher spent in the field before data saturation occurred.

Table 6.5: Summary of the data generation activities

Data source	Method	Number of interviews/sessions	Purpose
Clinical procedures/ processes	Non-participant observation	A 2-week session (08:00–16:00 daily)	To understand communication dynamics at the clinic
Nurse-patient interaction	Non-participant observation	A 2-week session (08:00–16:00 daily)	<p>To understand HCP-patient relationships and their facilitation of patient understanding of diabetes and treatment adherence</p> <p>To explore HCP-patient interactive communication sessions</p>
Doctor-patient interaction	Non-participant observation	<p>A 2-day session:</p> <p>(Tuesday: 08:00–16:00)</p> <p>(Tuesday: between individual interviews)</p>	<p>To understand HCP-patient relationships and their facilitation of patient understanding of diabetes and treatment adherence</p> <p>To explore HCP-patient interactive communication sessions</p>
HCP-HCP teamwork interactions/relationships for patient care	Non-participant observation	<p>A 2-week session (nurse-nurse interactions)</p> <p>A 2-day (Tuesday: medical doctor-nurse interactions)</p>	To explore teamwork dynamics and its facilitation of patient care and treatment adherence
15 patients (6 female and 9 male)	Individual in-depth interviews	15 x 30-minute/60-minute interviews	<p>To understand patient care</p> <p>To explore barriers to treatment adherence</p> <p>To “unpack” patients’ understanding of diabetes as an illness</p>
HCPs employed at the clinic at the time of recruitment	Individual in-depth interviews	7 x 60/120 minute long interviews	<p>To explore patient care</p> <p>To explore and understand teamwork dynamics</p> <p>To “unpack” communication</p>

Data source	Method	Number of interviews/sessions	Purpose
			dynamics and its facilitation of patient care and treatment adherence

(Source: adapted from Mason 1996; Mason 2002)

6.8.1 Non-participant observation

According to Hansen (2006:68–69), observation is an advantageous method for qualitative research. Since it provides first-hand experience of participants in the field, by “*observing actual behaviour and gaining social, cultural and environmental information*” (Hansen 2006:68). Observation is noted as a reliable source of evidence in case study research since this data collection method adheres to the “real-world” setting and the immediacy and context of the case (Yin 2014:113).

Observation occurred in the order as indicated in table 6.5 above. As sessions were observed, summaries were written throughout the day in a research journal. In this way, an observational sheet/schedule was developed. Communication was noted as observed at the clinic in the clinical procedures and types of communication (group communication between nurses and group communication between individual patients and the group of nurses). A daily log of these observations was kept regarding communication dynamics which included interactive communication, HCP-patient communication and HCP-HCP communication at the clinic among other factors, as detailed in the observational schedule.

6.8.1.1 Possible limitations of non-participant observation

According to Yin (2014:106), limitations do occur with non-participant observations. These include the time factor, since observations can be time consuming and the issue of reflexivity comes into play where research participants may react differently since they are aware that they are being watched. Neuman (2007:217) agrees with the issue of reactivity occurring in overt observations where participants might react

in a different way since they are aware of the researcher's presence. The researcher reacted ethically by making the research participants at the clinic aware of her presence and research aims. The purpose was not to test the unit of analysis/unit of observation but rather to assist in understanding communication dynamics and conduct research which would be beneficial to both HCPs and patients at the clinic.

6.8.1.2 Recording observation notes

Observations were noted in a research journal on a daily basis (see table 6.5 above). The criteria for observation were detailed in the observation schedule created in relation to the aims and theoretical foundations of the study. According to Flick (2011), "*researchers observe the field, and the people in it, by using a sample and confine themselves to noting the processes*". In qualitative research, the processes of data collection and data analysis are interwoven – hence observations could be explored further in the individual interviews conducted with both HCPs and patients. The semi-structured nature of the interview schedule catered for this flexibility.

6.8.1.3 Sequencing of observations and interviews

Fourteen days were spent in the field where observations and individual in-depth interviews with 15 diabetic patients and seven HCPs were conducted. Observations were initially conducted at the clinic on a general level to note the atmosphere at the clinic. Then nurse-patient interaction was observed, as were doctor-patient relationship and HCP-HCP teamwork at the clinic. In the first seven days, observation was scheduled from 08:00 to 16:00. The observational schedule assisted the researcher with gathering data that were in line with the aims of the study. Interviews were then conducted as patients were recruited and HCPs had some available time to participate in the interview in the second week of the fieldwork process. This sequencing of observations first and then individual interviews second, helped to unpack observations with the participants on a one-to-one basis.

6.8.1.4 Development of an observational schedule

The observational schedule was developed in line with the objectives of the study, incorporating theoretical constructs into the schedule. The focus was patient-centred care with specific reference to communication dynamics and its facilitation or hampering of patient care and treatment adherence for diabetes as they occurred at the clinic. The team of HCPs was also analysed in relation to its “role relationships” and the question of teamwork as it occurred between HCPs at the clinic. The observational schedule included non-verbal cues to help further conceptualise the communication encountered at the clinic.

6.8.2 In-depth interviews

Fifteen interviews were conducted with participants (patients). Each interview lasted between 30 minutes and one hour. Seven HCPs were also interviewed for approximately one to one-and-a-half hours each. Since interactive and interpersonal communication was core, a qualitative research design was favoured. According to Sandelowski (2001:231), “*qualitative researchers strive to emphasize something more than the numbered nature and meaning of events and experiences*”. By adhering to the case study approach using qualitative data collection methods, the sample size was justified for in-depth analysis without any intention of generalisation of data. The patients and HCPs were sampled with a purpose in mind, that is, to analyse communication dynamics at an in-depth level. Mays and Pope (1995:110) explicate the researcher’s point as follows:

“[T]he purpose is not to establish a random or representative sample drawn from a population but rather to identify specific groups of people who either possess characteristics or live in circumstances relevant to the social phenomenon being studied. Informants are identified because they will enable exploration of a particular aspect of behaviour relevant to the research.”

6.8.2.1 Setting for the interviews

The diabetes clinic was a small prefabricated building located at the entrance to the actual hospital building. It consisted of two rooms, one fair-sized room (which could

accommodate about four patients at a time) where all patients were consulted with communally as well as one tiny tea/staff room. The researcher was granted permission to conduct some patient interviews in the small tea/staff room when the room was empty. However, availability of the room did not coincide with availability of patients necessitating an alternative venue. Thus most of the interviews were conducted in a small courtyard area at the back of the tea/staff room. This was a private space not used by patients and HCPs. HCPs respected the need for privacy when conducting interviews and thus avoided this space when interviews were being conducted. All the HCP interviews were conducted in the staff/tea room on a one-on-one basis. Because the research was conducted at a public health-care facility with limited resources, it was necessary to make do with the spaces that were made available.

6.8.2.2 Recording of the interviews

All the interviews were digitally recorded with permission granted by interviewees (these being both HCPs and patients). Notes were also written while interviews were in progress to further assist with the analysis of the recorded data.

6.8.2.3 The interview schedule

Both the interview schedules for HCPs and patients were semi-structured and grounded in the tenets of the selected theoretical models used in this study. According to du Plooy (2009:198), semi-structured or partially structured interview schedules contain standardised or more focused items which are in line with the research questions or research focus of the study. At times, it was possible to probe further to ensure that patients fully answered questions relating to interactive communication. Probing is a technique used by qualitative researchers to ensure that participants engage in conversation with the researcher (Flick 2011:112). Du Plooy (2009:198) reiterates this point by stating that *“the interviewer is free to deviate and ask follow-up or probing questions based on the respondent’s replies, especially if the replies are unclear or incomplete”*. The interviewer can then move in unanticipated directions, thus exploring new avenues. According to Flick (2011:112), open or semi-structured questions such as the following should be asked: “What do

you link to the word ‘health’?” This criterion was used and short open-ended questions were developed that facilitated the probe technique, which was closely linked to the aims and targeted group of the study. The purpose of the individual interviews was to obtain in-depth information from both the patient and the HCP in order to adequately analyse interactive health communication for diabetes as an illness.

A pilot study could not be used to pre-test the interview schedule because of the need to obtain permission from various gatekeepers before the researcher could enter the actual field to collect data. Permission to conduct research at public health-care facilities can take up to one year before access is fully granted to a researcher. The interview schedule was tested in the form of a mock interview by the researcher with a colleague prior to the actual fieldwork. The colleague was a fellow academic and the instrument was thus critiqued adequately before data collection occurred. The interview schedule was critiqued as follows: Questions should be more focused on the individual patient; questions should be shortened to allow follow-up questions which ensure that the researcher is able to engage with patients regarding their diagnosis, personal experience of diabetes and communication encounters, *inter alia*, as indicated in the interview schedule. The researcher added all these suggestions and the interview schedule was then professionally edited. With regard to the HCPs’ interview schedule, similar critiques (focus questions more towards patient orientation and shortening questions to allow for the probing technique) were noted and the document was also professionally edited.

6.8.3 Emergent data gathering method: documentation

At the outset of this study, only two data collection techniques were planned, namely in-depth interviews and observation. However, upon engaging with the actual fieldwork process, it became obvious that data received from the patients with regard to their treatment adherence could be cross-checked with the records kept for individual patients. Each patient had a file with his or her records kept at the clinic. Each time the patient visited the clinic, a new entry was recorded in relation to the medical issues under diagnosis. This additional data technique emerged as an

appropriate method once immersed in the field. As explained above, a qualitative research design is not a fixed design, but rather an emergent design where data is induced, as was the case with this study.

The case study approach recommends the use of documentation as a credible data collection method. According to Yin's (2014) protocol, documentation is a source of evidence that can assist researchers in the field: *"[F]or case study research, the most important use of documents is to corroborate and augment evidence from other sources"* (Yin 2014:107). Thus documentation assisted with the triangulation of data from patient interviews regarding treatment adherence in relation to the actual evidence as recorded by the HCP (nurse) per patient portfolio.

The diabetic education material (see appendix J) was used as data sources which were triangulated with the findings of the study. Diabetic educational material (documents) was also based at the clinic (see appendix J). The researcher noticed these booklets and brochures that was provided by the clinic to patients to educate them on diabetes as an illness, its symptoms, how to manage diabetes an illness, maintain foot care, among other necessary information. The researcher was granted permission by the nurses to take these booklets and brochures available at the clinic for analysis in the study.

6.8.4 The type of documents reviewed/the process of analysis

- **Patient documentation (information recorded in patient files)**

Access to the documentation was provided by a senior nurse at the clinic. The process of viewing each patient's file was not invasive, since the staff nurse who was knowledgeable on blood glucose levels removed individual files and explained the patient's progress with regard to treatment adherence over the duration that he or she had been receiving treatment. Ethical permission was obtained for this.

An example of the documentation contained in each patients file can be accessed in appendix I. Patient files were kept with records of the following: blood glucose levels, personal information, treatment methods, complications that had occurred initially (upon initial diagnosis) and current complications or issues. The patient's medical

and family history was also recorded in the file. The patient's "therapy" history was also recorded. This refers to the patient's diet plan, that is, what he or she eats and what exercise he or she does. If patients were not doing any exercise, the nurse would educate them on how they could simply take morning or evening walks, or engage in domestic chores in order for them to, at least, be doing some physical activity to help manage their diabetes.

The file also consisted of a "diabetic continuation form" where patient records were stored. The "Stanger Hospital diabetes unit" form recorded all the patient's health records in relation to their diabetic condition. It also recorded the patient's consumption of medication, smoking, eye tests conducted, exercise routines and kept records of patient educational sessions. The nurses were considered the primary educators at the clinic. This documented proof indicated that interactive communication did occur at the diabetes clinic and this information assisted with the triangulation of data from the multiple data collection methods used in this study.

All these documents were analysed together with the "diabetes record book", and the nurse was thus able to paint a clear picture of the individual patient's treatment adherence levels during the analysis process.

- **Diabetic educational material (booklets, brochures-see appendix J)**

Educational material was provided in these booklets as comic strips which narrate stories of other diabetic patient's experiences with the illness (see for example, the story of Lindiwe, appendix J). Educational material was provided on how to live a healthy lifestyle by exercising and maintaining a healthy diet. Material was also provided on how to use insulin injections demonstrating where on the body it can be injected into. These informative booklets also catered for the use of traditional and alternative methods to treating diabetes in conjunction with seeking medical help and consuming insulin. It also accommodated and motivated that patients join support groups to help manage their illness and tell their family and friends about their diagnosis so that they can be further supported towards living a healthy diabetic life. Findings of the study were further triangulated in relation to these data sources that were available at the clinic.

6.9 DATA ANALYSIS AND INTERPRETATION

Use was made of Tesch's approach to transcribe and analyse the data collected in the field. Tesch (1990 in Poggenpoel 1998:343–344) outlines eight steps which can be followed when analysing data:

- (1) The researcher should obtain a sense of all the data collected by reading through all the transcriptions carefully. Ideas and thoughts can be noted as they emerge.
- (2) The researcher selects a random interview and gets the gist of the information provided in the selected interview. Once again, thoughts are jotted down in the margin.
- (3) After the researcher has completed decoding many interviews, a list is created of all the topics. Themes are arranged according to major topics/themes, unique topics/sub-themes and leftovers.
- (4) The list of the topics is broken down into codes. These codes are written next to the appropriate text of the decoded data. This preliminary process is undertaken by the researcher to judge whether any new categories or codes emerge from the data.
- (5) Themes or topics are explained using descriptive language and are categorised accordingly. Lines are drawn between the categories to show interrelationships.
- (6) The researcher makes a final decision on the abbreviation for each category and alphabetises the codes.
- (7) Data from each category is assembled and a preliminary analysis is conducted by the researcher.
- (8) The researcher recodes existing data if necessary.

Tesch's eight steps were diligently followed when analysing the data collected from both HCPs and patients. Data from the patients' interviews was separated from that of the HCPs. Patients' and HCPs data was transcribed and read through in order to

get a feel for the data. Ideas and thoughts were jotted down as they came to mind. Thereafter one transcription of each category was selected, namely patient and HCP, in order to establish the gist of the information provided, as explained by Tesch (1990 in Poggenpoel 1998:343) in step 2. Thoughts, as they emerged after reading the text, were recorded. This process was continued for all patients and HCPs separately in order to create a list of topics. Similar topics were grouped together according to major topics, unique topics and leftovers (Poggenpoel 1998:343). Thereafter the data and topics were abbreviated as codes, matching the codes with appropriate text. This process was conducted to test whether any new categories or codes emerged from the data.

Step 4 was used to test that credible categories and codes emerged from the data gathered. Topics or themes were then created using descriptive language. Similar topics or themes were categorised to display interrelationships in the data obtained. Then, according to step 6, a final decision was made on the abbreviation of each category and the codes were alphabetised accordingly.

According to step 7, data for each category was assembled and a preliminary analysis was performed. Finally, adhering to step 8, existing material was recoded if the necessity emerged (Poggenpoel 1998:342–344). This ensured that a rich description was provided in the thematic analysis. The idea of the analysis was to provide a lived experience for each participant in this study. The notion of providing a voice for each patient and each HCP at the diabetes clinic was described in the researcher's thematic analysis.

The figure, 6.1 on the fold-out page, is a graphical representation of how Tesch's data analysis procedure was integrated into the data analysis process of this study. It shows the codes (major topics/themes, unique topics/sub-themes and leftovers: which were not applicable to this study).

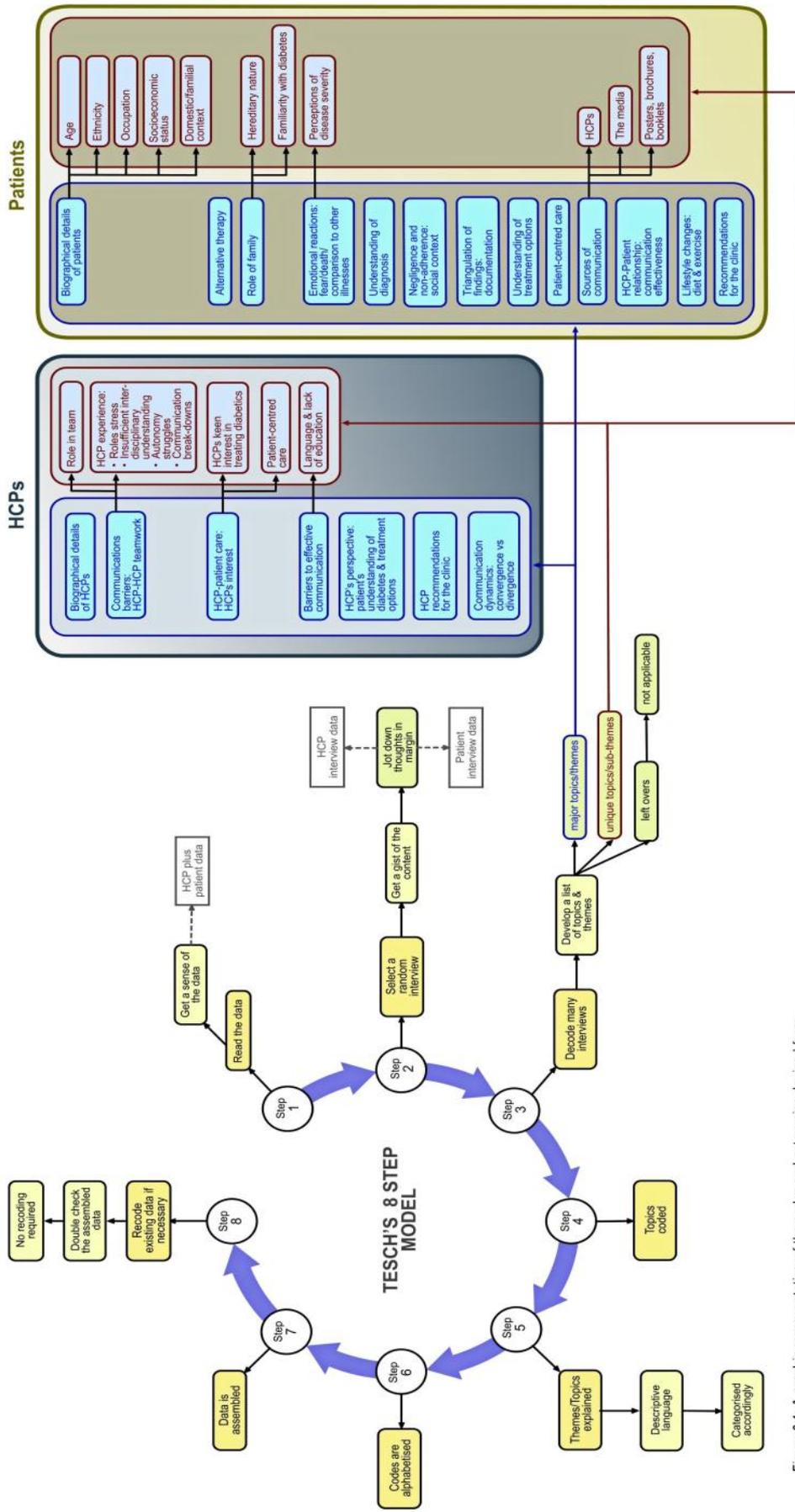


Figure 6.1: A graphic representation of the codes and categories devised from the data analysis process according to Tesch's eight-step model

6.10 RELIABILITY AND VALIDITY

6.10.1 Reliability and validity: empirical research and case study criteria

According to Yin (2014:45), in order to validate empirical research, the following criteria should be applied to research designs: onstruct validity, internal validity, external validity and reliability. The researcher adhered to the construct validity, external validity and reliability criteria as explained below.

Construct validity is defined as *“identifying correct operational measures for the concepts being studied”* (Yin 2014:46). Construct validity was applied to the case study in the following manner: In order to reduce subjectivity, multiple sources of evidence were used during the data collection stages. Observation, in-depth interviews and documentation were used to collect data for this study.

- Internal validity was not appropriate to the case study research since the case study was not focused on explanatory or causal research.
- External validity notes two types of generalisations that can be followed in research, namely statistical and analytical generalisations (Yin 2014:48). This study had no intention of generalising findings. Instead, the sample was selected to understand communication dynamics as opposed to generalising the findings obtained to the entire clinic. The study was able to conduct analytical generalisations as opposed to statistical generalisations.

6.10.2 Reliability and validity as applied to the case study

The following six reliability and validity techniques as explained by Morse et al (2002:11–13) were adhered to:

- methodological coherence;
- sampling sufficiency;

- developing a dynamic relationship between sampling;
- data collection and analysis;
- theoretical thinking; and
- theory development.

Methodological coherence ensures that congruence occurs between the methodological choice and the research questions of the study. A qualitative methodology was selected to ensure that methodological coherence occurred since the selected methods, namely in-depth interviews, observation and documentation, were suitable methods for exploring patients' and HCPs' opinions on interactive communication and treatment adherence. A qualitative methodology ensured that first-hand experience occurred in the field. Thus the research questions were answered as rich data was collected from the participants (refer back to the research questions in chapter 1). The research questions were structured to analyse communication dynamics between HCPs and HCPs and patients for effective diabetes care and treatment adherence. Thus qualitative methods proved to be sufficient tools to explore all the research questions in detail.

Sampling sufficiency dictates that a suitable sample be used, that is, one that best represents the research topic. Selecting an appropriate sample ensures that data can be validated since data saturation occurs. Participants (patients) who were diagnosed with diabetes were selected from the specific clinic for this study. Hence they best represented the sample for this study because they were diagnosed with the illness being studied. HCPs that were employed at the clinic and formed part of the treatment team were recruited because they had first-hand experience with diabetic patients. According to Morse et al (2002:12), "*saturation data ensures replication in categories; replication verifies, and ensures comprehension and completeness*". The issue of sample sufficiency was also discussed in section 6.7.2.1 above.

Regarding the development of a dynamic relationship between sampling, collecting and analysing data concurrently, this mutual concurrence adhered to the qualitative framework and ensured that the researcher experienced "*a mutual interaction between what is known and what one needs to know*" (Morse et al 2002:12).

Credibility was maintained and flexibility occurred since concurrent data collection took place in the form of note-taking, data collection, transcription and analysis throughout the fieldwork process, which allowed the researcher to uncover rich data.

Thinking theoretically enabled the researcher to refer back to the theoretical concepts of each model, together with the data collected, to ensure that *“ideas emerging from data are reconfirmed in new data; this gives rise to new ideas that, in turn, must be verified in data already collected”* (Morse et al 2002:13). The well-grounded theoretical foundation (see chapters 3 and 4) of this study allowed the researcher to constantly validate data by cross-checking the data collected with theoretical concepts (theoretical triangulation as elaborated on in section 6.13 below).

In theory development, the researcher developed a conceptual framework in the form of a model which was synthesised from the literature (see chapter 5). The model was not tested during the fieldwork process.

6.11 TRIANGULATION OF DATA

According to du Plooy (2009:40), *“the combination of two or more data collection methods, and reference to multiple sources of information to obtain data, is generally referred to as triangulation.”* In qualitative research, triangulation is used to ensure that data credibility is maintained. Babbie and Mouton (2001:275) agree that *“triangulation is generally considered to be one of the best ways to enhance validity and reliability in qualitative research”*.

According to Patton (1999:1193), four types of triangulation contribute to the verification and validation of qualitative data, and these include the following:

- method triangulation: the use of different data collection methods;
- triangulation of sources: the use of different data sources in the same method;
- analyst triangulation: the use of multiple analysis to review findings; and

- theory/perspective triangulation: the use of multiple perspectives of theory to interpret data.

Method triangulation, triangulation of sources and theory/perspective triangulation were used to validate findings. In terms of method triangulation and triangulation of sources, three data collection methods were used to verify data, namely observation, in-depth interviews and documentation. Data collected from the observations (journal notes) were cross-checked with the transcriptions (data collected from in-depth interviews with both patients and HCPs) and finally verified with patient documentation (patient records) plus diabetic educational material (see appendix J) to ensure that credible data was collected during the fieldwork process. With reference to theory/perspective triangulation, a detailed literature review was conducted that included a variety of theoretical perspectives (as discussed in chapters 3 and 4), which were used to analyse and interpret the data collected. The remaining two types of triangulation were not appropriate to this study. Analysis triangulation was not permitted owing to the confidentiality agreement between the researcher and the participant where the researcher indicated that the data collected would be transcribed to protect the identities of individual patients and HCPs.

Table 6.6 below provides a summary of the process of triangulation as it occurred in this study.

Table 6.6: Summary of process of triangulation

Data collection methods (methods triangulation)	Triangulation process
Observations recorded in journal	Read and noted then compared with interview transcriptions
In-depth interview data decoded	Read and noted then compared with observational notes
Documentation recorded at clinic	Cross-checked with observation and transcriptions above and compared to documented patient (see appendix I) data and educational data sources (see appendix J)
Theory/perspective triangulation	Literature reviews conducted were consulted to

Data collection methods (methods triangulation)	Triangulation process
	analyse and interpret data (noted similarities and differences to literature review/theoretical perspectives)

According to Denscombe (2010:348), making use of triangulation in social research is beneficial since the researcher obtains different viewpoints on the topic under investigation. In this way, a better understanding is achieved as more knowledge is gained on the topic. Thus improved accuracy and also a fuller picture were obtained for the study. Accuracy ensures that validation occurs in a study and triangulation allows the data to be validated, thus ensuring authenticity is obtained in the data collected. The use of different methods can validate data collected by cross-checking data obtained from each method used for a study. Rowley (2002:23) concurs that *“one of the greatest strengths of case studies as compared to other methods is that evidence can be collected from multiple sources. Triangulation uses evidence from different sources to corroborate the same fact or finding.”* Triangulation ensures that the data gathered is complete and that a fuller picture is obtained from the concluding findings produced from the study.

6.12 CONSIDERING THE EMIC AND ETIC ROLES OF THE RESEARCHER

The “insider”/“outsider” status is a constant challenge many researchers face with qualitative research designs. Researchers are initially outsiders to research sites and research participants, but as they familiarise themselves with the participants and research sites, they become insiders to the fieldwork process. Qualitative researchers need to constantly keep objectivity in mind when collecting and analysing data. According to Rabe (2003:150), insiders have more “inside” knowledge compared to outsiders, who have little or no knowledge at start of data collection. Outsiders can therefore be more biased in the data collection phase since the researcher is considered to be an outsider in this phase of fieldwork. At the diabetes clinic, the researcher was more of an outsider to the participants than the

HCPs were. The participants kept their distance from the researcher, but the HCPs assisted the researcher where they could and treated her as an insider.

Reflexivity is a core aspect of qualitative research. According to Skeggs (2002:349), *“debates about reflexivity rely upon a concept of a self”*. In qualitative research, the researcher is supposed to maintain objectivity and avoid allowing personal feelings of the self to intervene in data analysis. Adkins (2002:332) notes that *“the current turn to reflexivity in social research, or at least, a particular version of reflexivity, concerns a configuration of the relation between subjectivity and knowledge or knower and known which allows only certain subjects to speak”*. The researcher strove to be reflexive during the data analysis phase. Subjectivity was minimised by continuously cross-checking the data. The researcher engaged in conversations with the nurses during “free time” at the clinic. With these constant interactions, an objective eye was maintained when recording journal entries. Further cross-checking of data occurred before findings were triangulated in the final data analysis phase. Interactive communication with the nurses at the clinic on a daily basis enabled the researcher to be more reflexive when the data collected from the individual interviews with the patients was analysed. The nurses were thus in a better position to report on individuals with regard to their treatment adherence. The variety of methods used in this study greatly contributed to reflexivity, since objectivity was constantly maintained when analysing data because of the cross-checking techniques the researcher engaged in. Even if the researcher assumed subjectivity with regard to analysis, transcriptions could be double-checked for confirmation.

This research was conducted to improve public health-care for diabetics in a South African public health-care context, by analysing communication dynamics in HCP-HCP and HCP-patient communication when interaction occurred for diabetes treatment and care. The intention was therefore to empower the patient and the HCP to voice their respective opinions as encountered in the medical system. Empowerment in the medical system should occur as a two-way interaction between the HCP and the patient. According to Anderson and Funnell (2010:277), *“empowerment occurs when the HCP’s goal is to increase the capacity of patients to think critically and make autonomous, informed decisions. Empowerment also occurs when patients are actually making autonomous, informed decisions about their diabetes self-management.”* Hence the focus was on producing the spoken

word of an individual with a rich description as adhering to the qualitative research design.

Mauthner and Doucet (2003:425) explain that researchers must recognise *“that a profound level of self-awareness and self-consciousness is required to begin to capture the perspectives through which we view the world, and that it may be impossible to grasp the unconscious filters through which we experience events”*.

Mauthner and Doucet (2003:425) further posit that complete reflexivity might not be achieved with research, however, *“degrees of reflexivity”* can occur with ongoing research activities and data analysis. Constant checking of data reduced subjectivity.

Bracketing was also used to isolate any existing knowledge or preconceived ideas the researcher held about communication dynamics at an interactive level. According to De Vos (1998:337), bracketing enables a researcher to view phenomena in a “new” form that is unfamiliar to the researcher’s pre-existing knowledge, ideas or feelings towards the case. Reflexivity was therefore maintained by approaching phenomena with an open mind.

Notes were constantly made in a research journal to avoid personal feeling biases from emerging in the findings. As indicated above, the variety of research methods used in this study ensured that the personal feelings and possible bias of the researcher were suppressed and data were collected and analysed with an open mind.

6.13 ETHICAL CONSIDERATIONS

The researcher is a qualified lay counsellor and is thus familiar with the ethical procedures for upholding confidentiality in the medical system. The ethical procedure for maintaining confidentiality, informed consent and debriefing is detailed below.

6.13.1 Confidentiality

The true identities of the participants were omitted during the data analysis phase. The researcher used pseudonyms when writing up the research in order to protect both the patients' and HCPs' identities, as promised when they agreed to participate in this study. Only the staff nurse and the researcher were aware of the patient's true identity. The researcher transcribed all the interviews and observational data to further adhere to the confidentiality clause of respect towards human subjects.

6.13.2 Informed consent

Participation in this study was completely voluntary, even though a purposive sampling technique was used. Patients were only interviewed if they provided the researcher with their informed consent. Informed consent forms (see appendix G) were provided to all participants to sign when they agreed to be interviewed by the researcher. Verbal informed consent was obtained from the HCPs before they participated in the study. All participants were allowed to withdraw from the study at any stage without any penalties.

6.13.3 Debriefing

The core focus of the study was analysing interactive communication dynamics and was focused on HCP-HCP and HCP-patient relationships for diabetes health-care in a South African context. Hence no debriefing or extra counselling sessions were required by the participants after the interviews had been conducted. However, it was kept in mind that the research was being conducted in a clinical setting, which meant that psychological help from the hospital counsellor was readily available if there was a need. Debriefing was pre-arranged with the nurses at the clinic.

6.14 CONCLUSION

A qualitative research methodology was selected to conduct case study research at Stanger Hospital diabetes clinic in order to gain an in-depth analysis of the communication dynamics between HCPs and patients for diabetes care. Yin's (2014) case study protocol was used with Tesch's (1990 in Poggenpoel 1998:343–344) eight-step procedure to analyse and interpret data. A case study approach was appropriate for this research since it allowed for an in-depth analysis of the data collected at a single-site clinic. Because qualitative research methods cater for researchers to understand human phenomena, the methodology was deemed appropriate for understating communication dynamics in relation to diabetes. Multiple data collection methods were used, namely observation, in-depth interviews and documentation. The research participants included HCPs and patients who either provided or received care at the diabetes clinic. Convenience and purposive sampling techniques were used in order to meet the population criteria set out for this study. The research adhered to ethical principles such as confidentiality, informed consent and debriefing as per the requirements of medical ethics and the Unisa's policy on research ethics. Reliability and validity were determined according to case study protocol as explained by Yin (2014) and Morse et al's (2002:11–13) six techniques, which ensure that reliable and valid data is collected in the field. In the next chapter the findings and analysis of the patient data is explained.

CHAPTER 7

FINDINGS AND ANALYSIS PART 1: PATIENT DATA

7.1 INTRODUCTION

Chapter 7 outlines part of the findings of this study. A thorough reading of the transcribed raw data yielded themes which were categorised according to their relevance to the communication between HCPs and patients. The findings are broken down into two parts, namely, part 1, chapter 7 (findings and analysis: patient data) which provides a detailed presentation of the findings collected from the patient data; and part 2, chapter 8 (findings and analysis: HCP data) which involves the presentation of the HCP data collected in the fieldwork process. The data is separated in order to provide structure to the mass of data collected in the field.

This chapter aims to answer research questions 2 and 3, namely:

- Does interactive health communication between HCPs and patients facilitate or hamper effective understanding of diabetes?
- Does communication either converge or diverge between HCPs and patients in terms of effective understanding of diabetes health-care and treatment adherence?

The qualitative research method enabled the researcher to experience occurrences at the clinic first-hand. The variety of data collection methods used enabled the researcher to triangulate the findings and thus further substantiate the data collected at the research site. A detailed discussion is provided below of HCP-patient internal communication dynamics for diabetes health-care and treatment adherence at Stanger Hospital's diabetes clinic.

This study made use of a wide array of theoretical approaches in the fields of health communication. Insights from these theories were used to substantiate the study's

findings. The researcher took great care to constantly compare and integrate her findings (ie data from the in-depth interviews, observations or the documentation) with theoretical perspectives. According to Babbie and Mouton (2001:275), *“we can triangulate according to paradigms, methodologies, methods, researchers, etc. Triangulation is generally considered to be one of the best ways to enhance validity and reliability in qualitative research.”* This study employed triangulation of methods and of data where possible, by comparing data from the in-depth interviews with the observed data. Working in this fashion enabled the researcher to answer specific research questions by integrating different perspectives. In-text triangulation is discussed in relation to the interview data, observed data and the documentation.

7.2 BIOGRAPHICAL DETAILS OF THE RESEARCH PARTICIPANTS (PATIENTS)

The research participants related narratives to the researcher about their personal lives. Not only did the researcher learn the age, gender and ethnicity of each research participant, but she was also able to obtain data that expressed a deeper level of each patient’s personal being. The researcher gained insight into the patient’s family background, employment status, and duration of being diagnosed as diabetic.

The researcher wrote short notes summarising her impressions from her encounter with each patient after she had conducted the interview with him or her. These notes were recorded at the end of the interview as a brief summary of her thoughts about each patient. The researcher included the comments in this discussion so that she could describe each patient as an individual. The objective of the study was to explicate the individual’s experience of either receiving or providing health-care for diabetes – hence the researcher wished to analyse each person as an individual. This understanding of multiple, individually lived experiences was under-emphasised in most of the models and theories discussed in chapter 3 from a patient-centred care perspective.

According to Sandelowski (2001:230), *“[v]erbal counting occurs when researchers imply numbers without actually giving any. For example, researchers will use such words as a few; some; many; and most to refer to participants, common,*

prevalent, sometimes, and rare to refer to themes, thematic to refer to experiences.” In the section on the biographical data (as well as throughout this chapter), the researcher, heeding Sandelowski’s advice, adhered to the selected qualitative methodology and utilised such words to describe and summarise her findings.

In the section below, the findings in respect of each participant are given. This is followed by a summary of the biographical findings.

- **Howard** was a 72-year-old male pensioner. He was a talkative, friendly person who had been diagnosed with diabetes 14 years previously, but was still passionate about staying healthy. Although he was the second oldest patient the researcher interviewed, he was determined to participate actively in this study, as he reasoned that this could make a difference for future treatment at the clinic. He said, for instance: **“What’s your study about? If I can help more people I will help you and answer your questions.”** He was enthusiastic and well acquainted with the staff members at the clinic. The researcher noted how he made an effort to greet every staff member at the clinic. This patient liked a grand entrance and wished everyone to become instantly aware of his presence. The patient would usually walk in and immediately demand attention from the staff nurse.
- **Ria** was 48 years old who had been diagnosed as a diabetic two years earlier. She was a quiet person and only spoke when she was spoken to. Given her relatively short period since diagnosis, Ria expressed feelings of fear about her diagnosis. She revealed to the researcher that she needed counselling from the nurses to help her to learn to accept and cope with diabetes. Ria’s demeanour radiated sadness and detachment. The researcher noted this despondency in the manner in which Ria responded to questions and prompts during the interview. She despaired about her illness. She confessed feelings of depression and articulated a need for counselling to cope with the idea of being diabetic. For example: **“The nurses are counselling me and telling me that I have nothing to worry about, they are teaching me about the disease. Saying I must learn to accept it, I must not be sad about it.”** These emotional responses by Ria are elaborated on later in this chapter under the theme, *emotion*. She expressed

appreciation for the time the nurses spent on counselling her and for the services provided to her. Ria was unemployed.

- **MJ** was 56 years old and had been diagnosed with Type 2 diabetes. He was extremely talkative and made every attempt to elaborate as much as possible about his own history. He enjoyed receiving treatment at this clinic and he was known by name to the nurses. **“It is wonderful here at the clinic; they teach you, educate you. We are treated with respect here. They are kind, not abrupt.”** MJ intimated that the atmosphere at the clinic was one of friendship and passion for service provision. MJ was employed in an area near Stanger.
- **Betty** was 46 years old and had been diagnosed as diabetic about one year before the time of the data gathering. She was a quiet person who mostly answered questions with one-word answers, such as “yes” or “no”. This was not because of the phrasing of the questions in the interview schedule. Even changing the way in which the researcher asked the questions and careful probing produced little more from Betty. The researcher deduced after some time that Betty was still learning about her illness since her diagnosis almost a year previously, and she was still learning to cope with the diagnosis. **“I am diabetic for just about a year now, so I am still getting used to it.”** She was also unemployed and had a family history of diabetes.
- **Frans** was 61 years old, and had been a diabetic for three years. He candidly revealed to the researcher that he was a defaulter, but now determined to alter his lifestyle to improve his health. Frans seemed to default because he was always preoccupied with work commitments and thus missed many doctors’ appointments and ended up being non-adherent to treatment. However, Frans was not complacent about this behaviour, as he expressed anger at himself for not being able to cope with his illness: **“I am angry at myself, it’s my fault. I should have come, I should have taken medication, it’s my fault – now I want to change, turn over a new leaf, get adherent and take my medication.”** Frans also had a family history of diabetes and indicated that the disease was hereditary. What prompted him to confront his illness again was a sore on his foot that created

a fear of amputation. Frans had witnessed the amputation of his mothers' legs owing to untreated diabetes.

- **Isaac** was 43 years old and had been a diabetic for three years at the time the researcher interviewed him. Although he had already been diabetic for three years, he was a new patient at the clinic since he was receiving treatment at Stanger Hospital and no longer at the previous clinic he had visited. Isaac mentioned that he worked in Mandeni, and had therefore received treatment at that clinic previously. However, now that he was employed in Stanger, he preferred to receive treatment at the hospital and thus the clinic transferred him here. He indicated that diabetes was hereditary in his family and he also communicated a narrative about his use of herbal remedies to cure a foot sore. His experience of cultural remedies is discussed under the theme (section 7.3 below) and its relation to the South African medical system later in this chapter.
- **Stefan** was the oldest patient who participated in the study. He was 75 years old and on pension. He had been diagnosed as diabetic about 15 or 16 years previously (he could not remember the exact duration). He had been adherent to treatment since being was diagnosed and he aimed to live a healthy lifestyle in order to manage his diabetes. Stefan was a kind person and was extremely interested in the study. He was well informed about his illness and aimed to take it in his stride, indicating: **“You know I am diabetic for so long. No, this one here you know what happened to me – I didn’t know I was diabetic. I came here, they checked me, they told me** [patient narrates his story of how he was diagnosed as diabetic at the clinic. *They* refers to the nurses at the clinic]. **I learnt about my illness, I know everything – look at me, I am well, that’s why I am living so long, 75 years now. I know everything about diabetes – I am still brave with my diabetes.”**
- **Moses** was 49 years old and had been diagnosed as diabetic three years before the time the research was conducted. He mentioned how afraid he was of diabetes and indicated that he was aware that this posed dangerous consequences for his health if left untreated. In the researcher’s journal, she made several notes about this participant’s sound knowledge of diabetes as

expressed in his interview and his interactions with the nurses. He seemed to be adherent to his treatment and was content with the treatment he received at the clinic. Moses was employed on a full-time basis.

- **Kevin** was 52 years old and had been diabetic for 15 years. Kevin had initially been diagnosed at this hospital, but had chosen to receive health-care elsewhere at that time. At the time of data gathering, he had been attending consultations at the diabetes clinic as a new patient. Kevin was employed on a shift basis – meaning that he worked during the day and night alternatively. He mentioned the difficulty he experienced with regard to meal times and taking medication correctly. Owing to the irregular hours he worked, he faced many difficulties in trying to eat properly. However, he had the support of his wife to ensure that he ate properly, and he also adhered to his medication.
- **Ruby** was a 58-year-old woman who had been living with diabetes for only two years. The researcher recorded notes on this patient as follows: **“patient is humble, quiet, talks little, and wants to get better”** [Research journal entry]. The nurse informed the researcher that Ruby was not adhering to medication properly, and often defaulted. Since this information was provided to the researcher in Ruby’s presence, the researcher used it as a starting point in the interview with Ruby. Ruby also indicated how her daughter was helping her cope with the diabetes. Ruby was unemployed and was supported financially by her daughter. The nurses at the clinic were concerned about Ruby and thus also tried to counsel her towards achieving adherence.
- **Mo** was 49 years old and had been living with diabetes for four years. This patient did not engage fully with the researcher. Instead, his responses, like those of Betty, were often monosyllabic despite the researcher’s best attempts to probe and rephrase questions. Mo was a quiet, overweight man who expressed a need to improve his health. Over the course of the fieldwork and as the interview progressed, the researcher noticed how this patient revealed understanding of diabetes in relation to his own illness progression. It was clear to the researcher that he had learnt more about

diabetes over the years from the HCPs. According to Mo, **“nurses and doctor changed my life; before I was confused, now I am better.”**

- **Sarah** was 59 years old and had been diabetic for about four to five years – she was unsure of the exact time. She had initially received care at Victoria Hospital in Tongaat (a small town near Stanger). This was a small, private hospital, and she indicated that the doctor here taught her a lot about diabetes and medication. Then she went to Chaka’s Kraal (another small rural town located about 10 minutes away from Stanger) to receive medication at that clinic. However, when she learnt that Stanger Hospital had its own diabetes clinic she preferred to receive treatment here because of convenience. The researcher recorded the following analysis of Sarah: **“she was middle-aged, very confident lady, deviated from the questions asked (by focusing on different issues or aspects); researcher needed to keep the patient on track”** [Research journal entry]. Sarah was extremely talkative; she engaged with the researcher but tended to become tangential in her stories. The researcher had to shift her focus continuously towards the interview. She narrated a story about her house robbery to the researcher when she mentioned that she cannot walk as an exercise to maintain her diabetes because **“walking is dangerous”**. House robberies were common in Stanger and the researcher thus believed Sarah’s story: **“they stole my cell phone, everything, I was alone at home – lucky they didn’t do me anything. They couldn’t steal this bag because you don’t get this bag here, they would have gotten caught. Lucky they didn’t steal my passport, but took all my cards.”** She was clearly scared or a bit traumatised after she had experienced the break-in at her house.
- **Priya** was 39 years old and had been diabetic for two years. The researcher recorded the following about this patient: **“quiet, reserved, stressed because of her sick child, she was trying to create coping mechanisms, and was learning to live with diabetes”** [Research journal entry]. Priya had an ailing child who had been diagnosed as epileptic and who suffered from severe eczema. Caring for this child was a source of great stress and physical exertion for Priya. She confessed to feeling tired often – something

she attributed solely to the burden of caring for her child. This care burden was also advanced by Priya as the primary reason for her poor treatment adherence. She indicated that child-care took up most of her time and that this meant that she was unable to maintain a prescribed diet and adhere to her treatment. Priya informed the researcher that the staff at the clinic supported her during her non-adherence phases and understood her concern for her child. This admission was made freely as the interview did not take place in the presence of the nurses. This patient admitted to her non-adherence, but indicated it was so because of her **“life circumstances”**.

- **Vivian** was 37 years old and had been living with diabetes for eight years. The researcher noted the following in a summary of Vivian’s case: **“patient is quiet, and reserved, the patient wants to get better”** [Research journal entry]. This patient indicated that she felt extremely guilty when she did not adhere to her medication. She was unemployed and seemed to understand diabetes well.
- **Harry** was 67 years old and had been living with diabetes for ten years. The researcher recorded the following notes about Harry: **“he was an old man, very determined – wants to live still, not very talkative** [Research journal entry]. Harry like Betty and Mo were not that talkative, and even though the researcher tried to probe their answers with further follow-up questions, they never really responded further. The researcher bore in mind that they arrived at the clinic very early in the morning and were perhaps tired. However, she did respect that they volunteered to participate in the interview and still tried to engage with them. Challenges of public health include long lines, unseated areas, spending an entire day to be treated in a long line with the availability of only one medical doctor. Thus the patient understood the context of the research site and tolerated such challenges.

7.2.1 The ages of the participants

Almost all of the research participants were middle aged, with the youngest aged 37 and the oldest aged 75 – hence the mean age of the 15 research participants was 54.07 years. This was to be expected, since (as discussed in chapter 2), the literature mentions that prime risk age range for the development of Type 2 diabetes is the middle- to older-age ranges. Of the 15 patients, only Priya and Vivian were in their thirties; the other 13 patients were over 40 (ranging from 43 to 75 years).

7.2.2 The ethnicities of the participants

The sample included Indian and black participants. Hence, as expected, these ethnic groups are more susceptible to diabetes as discussed in chapter 2 (John Hopkins Medicine 2011a:11). At the same time, it should be borne in mind that the previously disadvantaged groups in South Africa are more prone to using public (as opposed to private) health-care services. Thus 11 of the 15 patients were Indian and four patients were black. The geographical information on the Stanger area was provided in section 6.4 in chapter 6.

With regard to patients' religious affiliations, Howard, Betty, Stefan, Kevin, Ruby, Sarah, Priya, Vivian and Harry identified themselves as adherents of Hinduism. Ria, Lulu, Moses and Mo suggested that they followed traditional African religions and MJ and Isaac were Muslims. All the patients were fluent in English (as per the recruitment criteria for the study), but the patients were also fluent in their mother tongues.

7.2.3 Occupations of the participants

Given the age range of the participants, it came as no surprise to find that most were already retired and receiving a government pension. Some of the men who had not yet reached retirement age were employed in Stanger or surrounding areas. Most of the women were housewives who were financially supported by their husbands or

children. The participants recruited for this study had not been formally educated at tertiary level. However, some of them indicated they had attended secondary school.

7.2.4 The socioeconomic status of the participants

Many of the patients indicated their incomes to be in the middle- to lower- income brackets. In chapter 2 it was mentioned that patients in South Africa who access public health-care facilities belong to the lower socioeconomic groups in comparison to people who seek private health-care because they have medical aid cover or can afford private medical care (Harris Goudge, Ataguba, McIntyre, Nxumalo, Jikwana & Chersich 2011:102–103, 119; Macha, Harris, Garshong, Ataguba, Akazili, Kuwawenaruwa & Borghi 2012:46–47, 53; Benatar 2013:1–3).

7.2.5 The domestic and familial contexts of the participants

Harry and Howard lived with their spouses; Howard's wife was ill and suffering with cancer. Ria and Stefan lived alone, while MJ lived with his wife and two children. Betty lived with her family in Stanger, while Vivian, Frans and Kevin were married and lived with their spouses. Moses, Mo, Isaac and Priya were single. Ruby lived with her daughter. Sarah took care of her ill father and lived with her parents.

From the interview data, only Kevin and Ruby received family support for their diabetes care. Kevin and Ruby told the researcher how their family members were helping them cope with their diabetes. Kevin was receiving support from his wife and Ruby from her daughter. This notion of family support and care further motivates diabetic patients. Kevin was motivated by his family support and wanted to see his “grandchildren grow in front of” him. The literature as well as theories and models such as the SCT, TRA/TBP and IMB acknowledge the importance of social support as a motivating aspect of health-care management (Niemeier 2010:351; Northouse & Northouse 1985:108; Clarke 2001:193; Shillitoe 1988:141).

However, family care and support were absent for most of the participants since they were either middle aged or older and did not have many family members living nearby. This was confirmed when the researcher witnessed that these patients came to obtain treatment at the hospital alone (the interview data on family support was thus verified against the observational notes taken for each of the sampled patients).

7.3 ACKNOWLEDGEMENT OF AND SUPPORT FOR ALTERNATIVE MEDICAL THERAPY SUCH AS HERBAL REMEDIES AT THE HEALTH-CARE FACILITY

From the literature reviewed in chapter 4, it was noted that cultural tolerance is required in the social context of health-care for diabetes (De Vera 2003:39). At the diabetes clinic, the researcher observed an interactive session between Isaac and the staff nurse relating to a foot sore Isaac had developed. He was instructed by the surgeon's out-patients department (SOPD) medical doctor to amputate his foot because of this sore. However, he had used a herbal balm and a herbal drink that helped heal his foot sore completely. The nurse had previously viewed his foot sore and was fascinated by its disappearance.

The verbatim conversation is indicated below:

Isaac: The SOPD doctor told me that I need to cut my leg out in order to prevent gangrene and because I had a sore caused by my diabetes. I was very scared and did not want that. I showed my granny the sore and she told me what to do. I cannot cut my leg out I need it.

Staff nurse: Yeah I remember, I saw his sore – it was very bad because of his diabetes. I told him to wear loose-fitting socks and shoes and look after his leg. But now there is nothing on his leg, the sore is gone – this remedy does work. Please tell me what plant you used?

Isaac: It's called a "graveyard plant" – everyone in Stanger knows about it, it grows everywhere. You just crush the plant leaves and we make a balm, you can also boil the plant leaves and roots and drink it – it really works. My family is using it for years now.

Staff nurse: Please bring a root of the plant, I want to grow it here and give to the patients, it really works, I saw your foot before and now – please bring it, I will plant it outside here and give to patients.

Isaac: See the nurse even saw my foot – the sore is gone.

The researcher observed this session between Isaac and the nurses clearly. The process of information exchange occurred within this nurse-patient relationship. In the context of this situation, the nurse communicated with Isaac interactively (about information on his foot sore, his condition, his experience of the sore and the method of cure, as indicated above). Isaac spontaneously mentioned herbal remedies as a vital part of his self-treatment. The remedy, handed down from his grandmother, was a concoction of plant roots and leaves. The same roots and leaves were also boiled as a liquid herbal remedy which he drank as a tea. The nurse revealed that she had previously noted the severity of Isaac's foot injury. The nurse requested the patient to bring a root of the plant so that she could plant it outside the clinic and provide this recipe to other patients in Isaac's situation. This came as a surprise to the researcher.

As observed from the conversation above, it was thus clear to the researcher that the nurse was open to the option of trying this herbal treatment remedy since she had requested a root of the plant. It should be noted that this plant was not yet available at the clinic at the time the research was conducted. However, she would not have minded sharing it with other patients in Isaacs's situation. She did not inform the medical doctor of this plant (at the time of this conversation), but spontaneously requested that Isaac bring a root of the same plant for her.

Another element that emerged from documentation (see appendix J), namely the diabetes educational material in the form of booklets that were used at the hospital, further clarified the staff nurse's accommodating approach to the use of herbal remedies. Thus triangulation occurred from different data sources, Isaacs's situation (as observed) and the educational material (documentation) based at the clinic for patient use. The diabetes clinic provided educational material in the form of cartoon strips (see the booklet, *Diabetes and you*", on page 7 of the booklet) and information is provided to patients (as illustrated in this data source) that encourages them to seek traditional methods to diagnose their illness. However, it clearly indicates that in

conjunction with this alternative method, patients must also seek medical help from a clinic and take their insulin. The diabetes management regime as illustrated in this data source championed by the clinic does not discourage patients from visiting traditional healers, but encourages them to go to the hospital and clinics to be tested, take medication or insulin and go for regular check-ups (Diabetes South Africa 2000:7).

Isaac's case draws out the following three points:

- the complementarity of different therapeutic domains
- the sustenance of communication flow in the HCP-patient relationship as a result of the staff nurse's accommodating approach
- the acknowledgement of the clinic and diabetes educational material of the usage of traditional healers in conjunction with medical treatment and care for managing the illness

The use of different therapeutic domains is acknowledged at the clinic, but emphasis is placed on patients seeking medical help as well. The notion of the staff nurse accommodating Isaacs's herbal balm and herbal tea drink enabled a flow of interactive communication to occur between Isaac and the nurse in relation to his alternative medicine option. The nurse listened to the patient prompting him to openly state that he uses the balm. She was so accommodating about the medicinal value of the plant that she requested a root to plant at the clinic and give to other patients. HCPs who practise a two-way flow of interactive communication that is focused on patient-centred care (as viewed with Isaac and the Staff nurse above) accommodate individual patients and motivate them to focus on managing their illness.

With regard to the other 14 patients, no data emerged from the observations in relation to alternative medicine and the patients were not questioned on this matter.

7.4 THE ROLE OF FAMILY MEMBERS IN ENHANCING COMMITMENT TO ADHERENCE

From the data collected, it was evident that Kevin and Ruby were the only two participants who indicated to the researcher that they had family support for coping with their diabetes. Kevin and Ruby were defaulting on treatment for different reasons, but with effective family support they were able to work towards managing their health. This data emerged from these two patients' biographical data conversations. The other 13 patients did not mention any information in relation to receiving family support.

Kevin spoke at length about his experiences of his diagnosis. He had visited the clinic with his wife:

Kevin: Uhm, I was down at MOPD [male out-patients department] second month I came to the clinic, first time visit to the doctor, well me and wife was here and they explained the danger of diabetes, keep proper diet, kind to me.

As indicated in the biographical data Kevin was a "new" patient at the clinic. He initially visited the hospital for diagnosis but chose to receive care elsewhere. Thus, in essence, he was a returning patient but because he had no filed records, he restarted as a new patient at the diabetes clinic. As a returning patient after defaulting Kevin now had the full support of his wife to help him work towards treatment management. In addition, he became increasingly aware that diabetes can be controlled and that he could survive for many years. His feelings for his wife and for his grandchildren and his desire to live a long and healthy life to be able to share many years with them, became a motivating goal that further sustained his determination to become adherent.

However, Kevin admitted that he drank large amounts of a sugary fizzy drink (Coke) and smoked even though he had been advised to stop smoking and avoid sugar-loaded soft drinks. Kevin wanted to alter his lifestyle positively in order to be able to provide for his wife and take care of his family. He indicated to the researcher that he had grandchildren and wanted to maintain his health so that he could take care of them:

Kevin: Yes, I was drinking and smoking, especially at night I would drink a 2-litre coke. The doctor explained to me a glass of coke has 4 tablespoons of sugar. I need to see my grandchildren grow in front of me. I did default then; now, never.

Kevin indicated that he had received a “wake-up call” and wanted to change his lifestyle to improve his health. In this, he admitted that he depended emotionally on the support he received from his wife to help him to avoid smoking and eating sugary foods.

According to the TTM, the stage process: *Stimulus control* and according to the PAMP Kevin was in *stage 5: decided to act*, and *stage 6: acting*, was seen in Kevin’s situation (Prochaska & DiClemente 1984:41; Gurung 2006:189; Weinstein & Sandman 2002:125; Cottrell et al 2015:110–111). Kevin loved to drink a soft drink that was highly concentrated in sugar, which was bad for his health. With the support of the HCP, Kevin was able to see the danger of consuming such an unhealthy drink. The TRA/TPB also indicates that motivational factors help determine the patients attitude for behaviour change. Kevin was motivated by his wife (upon his return to re-start treatment at the clinic) to control this bad habit of his. His wife supported the HCP’s decision to remove these foodstuffs (according to Kevin, what she labelled as “poison”) from her home. She had replaced the unhealthy drink with healthier drinks, as recommended by the HCP.

In Ruby’s case, it is evident that family members can play an important role in enhancing commitment to adherence. Ruby’s daughter played a key role in getting her mother back on track with her diabetes together with the support of the nurses.

Ruby’s inability to cope with her illness caused her to default on her treatment. She was sad and depressed, as suggested both in her demeanour and in her interview. She had received counselling from the nurse to acquire coping strategies, this counselling from the nurse’s side could be seen as information transfer between the counsellor nurse and Ruby, where, through interactive communication the nurse could find out about Ruby’s condition, experiences of her illness and the reasons for her non-adherence. Ruby’s support emerged from her daughter who worked in Durban (KwaZulu-Natal), but lived in Stanger with her mother. Ruby’s daughter became her main support system for medication adherence and also in reminding

her mother of the importance of adherence. This underscores the fact that family support and support from HCPs can act as an enabling factors for patients to adhere to treatment.

Ruby: I did default treatment, I was stopping my medication, my daughter told me to take it, I must take it. Even the nurses told me that, I will take my medication now.

Even though limited data was received in relation to family as a supportive element in patient adherence from the patient data (as indicated for Kevin and Ruby above, two out of the 15 patients only), the diabetes educational material (see appendix J) the booklet “Diabetes and you”, which is a comic strip depicting a story of Lindiwe, a lady who became ill and decided to visit the clinic to help diagnose her medical condition, is documented proof that the clinic and the diabetes management protocol recognises the role of family in relation to patient diabetes care and management of the illness. When Lindiwe fell ill, her sister first alerted her to the fact that she could be suffering from diabetes since their uncle had displayed the same symptoms and he was diabetic. She urged her to go to the clinic for a check-up. With regard to management of the illness, the nurse educated her (at the clinic) on how she needed to take care of her feet, since diabetic patients do lose feeling in their feet and this can be harmful since if they are poked by objects they are not even aware of it due to the lack of sensational feeling in their feet. Lindiwe indicated that she could not see her feet and would therefore ask her granddaughter to assist her in this regard (see page 3 in the *Diabetes and you* booklet), again emphasising the role that family can assist with helping the patient manage the consequences of the illness, that is by helping her grandmother check her feet to avoid diabetes foot complications.

Lindiwe was concerned with the aspect of her cooking and her husband questioning why she was now cooking differently. In this regard, her sister encouraged her to share her diagnosis with her family in order to obtain their support, “*you must tell everyone in the family so that they can support you*” (Diabetes South Africa 2000:4). The educational material (see appendix J) is a documented data source that supports the notion of family involvement as a contributing factor towards patient management of diabetes.

The nurses at the clinic encouraged family support to some extent as indicated below:

The following nurses, namely: The student nurse 1, student nurse 2 and the professional nurse, however, did indicate that the following dimensions to family as a support system exist: very old (aged) patients who cannot understand treatment options as well as blind patients. These dimensions are quoted verbatim below:

Student nurse 1: An example would be that old people come with the next of kin to help them understand, life is important, a person can only live once- they need to stick on routine, exercise and diet- it's important.

Student nurse 2: Yes, the elderly patients do not understand the names of tablets, why and when to take, etc. old people that cannot read, fail, as they are unable to understand and they bring someone in also to help them.

Professional nurse: Sometimes patients are uneducated; sometimes they have problems with their eyes – they cannot see therefore involve a family member.

7.4.1 Diabetes as a hereditary illness: narrating the role of family in relation to the familiarity of the illness

Six of the nine patients mentioned that diabetes is a hereditary illness (this is in relation to their own family's medical histories). Genetic factors, including race and ethnicity, contribute to the development of diabetes in individuals (John Hopkins Medicine 2011a:11). As discussed in the epidemiological overview of diabetes in chapter 2, Type 2 diabetes is genetically inherited and is more commonly found in certain ethnic groups. All of the patients recruited for this study indicated that they had been diagnosed with Type 2 diabetes. In the case of this study, only African and Indian patients formed part of the sample, and six of the 15 research participants reported a family history of diabetes. With regard to the remaining nine patients, their patient files (documented forms) indicated that they had no family history of the illness.

Although the hereditary aetiology of diabetes is well established in the literature, the researcher was able to obtain deeper understanding in relation to the lived experience of this as something that provided both comfort and support and fear to some of the research participants. These dimensions are absent from the literature and can only be obtained with a qualitative methodology owing to the in-depth and personal nature of individual interviews. The data indicated that the participants held contradictory views about the hereditary factors relating to diabetes.

For Ria, MJ, Isaac, Sarah, Betty and Frans, the idea of having previously witnessed diabetic family members, provided a feeling of comfort since they indicated they had witnessed what it is like for someone to live with diabetes. Frans, however, also indicated that diabetes had scared him after he had witnessed his mother's amputation because of the illness. For example:

Ria: I understand it because my father got it. [Patient is referring to diabetes and explaining that she understood what diabetes was since her father was diabetic and she had witnessed him live with diabetes].

MJ: My mother was diabetic; it's hereditary in my family, so I understand diabetes.

Isaac: I am diabetic since 2010 – communication is effective here at the clinic. I understand it, diabetes is hereditary, my mum got it and my dad got it, and my granny.

Sarah: My grandparents had it [patient refers to diabetes] and my dad, so I know very well what diabetes is, I saw it so I know it.

Betty: Yeah your sugar level goes high and stuff – I have a family history of diabetes, so I know what it is.

Frans: My mum was also diabetic; she had her legs amputated eventually – this diabetes runs in my family, it scares me. I need my legs.

The remaining nine patients did not indicate a family history of the illness as was verified with the patient documentation (see appendix I, patient documentation).

These experiences seemed to have facilitated effective understanding of what the illness entailed. What also transpired from their talk about the familial connection with diabetes was a sense that other family members who had developed diabetes

were somehow co-responsible for their own predisposition to developing this illness. Thus, some of the participants revealed that they had expected that they too would develop diabetes, given their family histories. Ria's father, MJ's mother, Fran's mother, Isaac's mother, father and grandmother were diabetic. The disease had also afflicted Sarah's grandparents and some of Betty's family members.

The researcher triangulated these themes from the analysis of the interview data with her notes on her observations at the clinic. On a general note, the researcher observed that most newly diagnosed patients communicated about previous family members who were diabetic to the nurses. They also mentioned this to emphasise that they understood the illness since they had witnessed family members manage their illness. They often told the staff of how they had witnessed diabetic family members as people well equipped to share an understanding of what it is like to live with the illness. What featured strongly in the talk about the experiences with family members was first-hand witnessing on how to inject insulin. As indicated in chapter 6 (section 6.7.4), patient records included information on their family histories. The researcher was thus able to verify the veracity of the reported family histories of diabetes for all of the 15 research participants (see appendix I, patient documentation). All the patients recruited for this study indicated they suffered from Type 2 diabetes, of these 15 patients, six indicated that they had a family history of the illness.

7.5 EMOTIONAL REACTIONS TO DIABETES DIAGNOSIS: FEAR, DEATH AND COMPARISON TO HIV/AIDS AND CANCER

The interview data had a strong presence of expressions of emotion. For example, some patients were afraid to confront their diabetes since it was incurable or because they had seen family members suffer harsh complications from untreated diabetes. The emotion of fear and sadness as well as physical and psychological distress emerged throughout the data.

Regarding fear, the patient data indicated the following different experiences: fear:

- of treatment with reference to using insulin injections or not having the confidence to adapt to a chronic disease;
- of dying;
- of the complications of untreated diabetes;
- due to lack of knowledge;
- of the unknown (undiagnosed);
- of the loss of limbs (amputation);
- of a “killer” disease;
- of a “death sentence”;
- of a dangerous disease; and
- of sexual inability.

Ria explained the difficulty she had experienced with having the fear of injecting herself with insulin on a daily basis.

Ria: Yes, I was afraid because first time I don't know this thing – insulin, it's very hard to inject yourself every day.

Harry, like Ria, was also afraid because of his lack of knowledge of diabetes. As he explained:

Harry: I was scared because I didn't know exactly what diabetes was, but after the nurses and doctor explained to me, it got into me and then I learnt.

Ria's lack of knowledge in relation to insulin added to her fear of diabetes. Betty agreed she was afraid to confront her diabetes confidently:

Ria: Yes, at first I did not know I was diabetic, another hospital referred me to Stanger hospital. I was scared.

The fear of the complications of untreated diabetes such as amputations was reiterated by Frans in his interview. Frans stated the following:

Frans: Hmm, yes I was afraid [with a scared, serious look on his face], because I thought it was the end of me, because my mum was also diabetic, she had her legs amputated eventually.

The researcher picked up throughout the interview that Frans was emotionally affected with his diabetes, because he constantly mentioned his mother and her amputation. He also mentioned that after he had developed a sore on his foot, he had been extremely afraid and had therefore returned to the clinic to re-start treatment, since he was afraid he too would lose his legs like his mother.

Isaac, like Frans, was afraid of losing his foot through amputation:

Frans: Yes, I was scared, because the doctor suggested he was going to amputate my foot, he got me very worried. I am not illiterate, I will not just cut my foot out.

Moses indicated that he was afraid of diabetes since he was aware that it was a life-threatening illness with no cure. Moses described his reaction as follows:

Moses: Aay, I was very, very scared, I know this disease is a killer, but with treatment I can live. I am following my treatment.

Vivian was afraid that diabetes would kill her. Vivian indicated her fear as follows:

Vivian: Yes I was scared, because I said this is a death sentence, you got diabetes, you are going to die.

Mo commented as follows:

Mo: Yes, I was scared because before, people told me diabetes is a dangerous disease.

Another fear mentioned by patients was that of erectile dysfunction. Frans, for example, stated the following:

Frans: I invite my wife for whatever, I was weak, but now I cling on to the advices ... I see the difference. It [reference is made to the nurses/treatment team] was saying to me I will get back to square one again ... strength ... become a family man.

It was not easy for Frans to speak about this fear to the researcher. This concern among male diabetics was discussed with the nurses who confirmed that they address this in their patient education.

Diabetes as an illness does affect individuals on a social level, since they need to adapt to their social status of being ill, and social consequences occur with illness,

as discussed in chapter 3 (Banerji 1989:178). Also, society has certain norms and beliefs about disease and illness. Different cultures interpret being ill according to different beliefs. The fear of not being able to cope with normal roles of life such as motherhood, was experienced by Priya. Priya constantly reminded the researcher and herself about her ill child, and how she felt that his health-care was more important than hers. She chose to neglect her diabetes diagnosis in order to try and be a “normal” mother. She was afraid of her diabetes getting in the way of her child’s health.

Priya commented as follows:

Priyas: Yes I was afraid because I actually had a small baby and he had severe eczema and was epileptic, so it was hard to accept my illness and take medication on time, but with the support from the clinic I don’t feel like a diabetic patient. My concern was to monitor my illness with my child but the sugar machine [patient is referring to the glucose meter or glucometer, a machine which is used to measure the amount of glucose in the body] helps.

Contrary to the theme of fear of diabetes diagnosis (as discussed above), five patients who were not afraid of their diagnosis are discussed below.

Howard, MJ, Kevin, Ruby and Sarah were exceptions to the patients above. They indicated that they were not afraid of their illness. However, in later data (see section 7.5.1 below) MJ, Isaac and Sarah compared the severity of diabetes to illnesses such as AIDS and cancer. Thus indicating that they were aware of the “harshness” of diabetes but were not afraid because of the following different reasons:

- an illness is God’s will;
- accepting it and taking medication; and
- witnessing previous family members suffer from the illness which facilitated an understanding of diabetes.

Howard and MJ attributed their diabetes illness to “being God’s will” and therefore explained how they were not afraid and accepted this illness. Their verbatim quotations are given below.

When MJ was questioned about his fear of confronting his diabetes as explained in the TTM (pre-contemplation stage) he indicated with confidence.

MJ: No, I am not afraid because in terms of religion it is Gods will and therefore I will accept it.

Howard, like MJ, explained this as follows:

Howard: Not scared because a sickness you cannot stop it, it comes from God. You got to follow the doctors and nurses advice.

Kevin, Ruby and Sarah indicated the following:

Kevin: No, I am not afraid. In fact when I was not diagnosed as a diabetic I used to eat my breakfast and I had a normal amount of sugar [patient is referring to the amount of glucose contained in his body]. Then I felt ill and went to the company clinic and they helped me check my sugar [glucose levels] and gave me medication. For a couple of years I abused the medication and drank coke.

Ruby: No – if you got diabetes just accept it and have your treatment.

However, from the data above it was noted that Ruby had been non-adherent and not coping with her illness initially, but with the help of her daughter and the HCPs who counselled her at the clinic she was improving.

Sarah explained:

Sarah: Not really I saw my grandparents and dad suffer with diabetes so I know it.

She means that she witnessed loved ones experiencing the illness and therefore understood it and was not afraid of it.

From a theoretical point of view, this theme is important since patients are emotionally affected by the illness (Delahanty, Grant, Wittenberg, Bosch, Wexler, Cagliero & Meigs 2007:48–49). Patients hold pre-existing ideas and beliefs about incurable illnesses and develop certain attitudes towards such illnesses. With an illness such as diabetes, people's lifestyles need to be altered and this can affect their social circles or general styles of living, since diets need to be changed and

adapted for controlling diabetes. As explained in terms of the findings below, patients experienced feelings of fear upon receiving their diabetes diagnosis.

The HCPs' interviews contained similar references to the fear experienced by patients when they are diagnosed as diabetic such as dimensions of fear which included fear

- of a lifelong illness;
- that leads to depression;
- of diet change;
- of death;
- of erectile dysfunction.

The medical doctor emphasised that levels of education and socioeconomic background affect the level of fear in patients. The doctor suggested the following:

Doctor: It depends on the educational level and how much they do know. They are usually shocked and afraid. Patients educated about diabetes usually have a more positive attitude towards diagnosis. Generally, black patients are from lower socioeconomic backgrounds as compared to Indian patients, and this affects education levels. Patients come to terms with and accept their diagnosis but they are not comfortable to live with it.

The enrolled nursing assistant suggested that she responded to patients' fears with reassurances. The staff nurse mentioned that patients' fear of lifestyle changes (diet and exercise) could lead to depression. The other HCPs also mentioned fear, for example:

Enrolled Nursing Assistant: You know, it's not easy the first time when you are told you're diabetic, you reassure the patient that they will be okay.

Staff Nurse: Well, some of them are depressed, mainly the diet they get really worried about, because they need to forget all the good foods they used to eat. Patients have a misconception about the diet and food they need to have; therefore we send these patients to the dietician

for sessions. So that they can be explained what they can and can't eat. Also the issue of exercise failure is a concern in patients.

Student Nurse: Some ... they get very upset. If you tell them it's hereditary, they get upset with their parents, but we reassure them that their parents cannot be blamed, because they [nurse is referring to the parents] didn't even know they had it in their blood.

Professional Nurse: You tell the patient that they do not need to panic, diabetes is a silent killer, yet like any other disease, if you be compliant it's nothing hard. If you tell the patient the truth they do understand, but they are sad; but you give the physiology of the disease, how you get it and stuff.

Chief Professional Nurse: Some patients react differently, they don't really understand. They are in denial, especially the males; they are in denial because of a rumour going around about erection issues that are related to being diabetic.

7.5.1 Perceptions of disease severity: comparison of diabetes with other chronic illnesses such as HIV/AIDS and cancer

This subtheme works in direct collaboration with the theme of the individual patient's emotional reaction to diabetes, which is discussed above. MJ, Isaac and Sarah compared diabetes to other chronic illnesses such as HIV/AIDS and cancer, and indicated their understanding of diabetes as an incurable, lifelong illness. Some participants illustrated their fears of diabetes in the verbatim quotations illustrated above (see section 7.5 above). MJ, Isaac and Sarah had certain *ideas* about diabetes as an illness (Levenstein et al 1989:112). These research participants had a preconception that diabetes is an illness that is as fatal as AIDS or cancer. AIDS and cancer are incurable illnesses that have disastrous long-term effects on patients. These patients were clearly displaying feelings of fear towards diabetes as an illness. The element of diabetes in comparison with other illnesses such as HIV/AIDS and cancer emerged from the biographical data of MJ, Sarah and Isaac.

MJ, Isaac and Sarah compare diabetes with HIV/AIDS and cancer below.

MJ felt that he was living with a serious condition, and mentioned to the researcher:

MJ: Sugar diabetes is worse than HIV/AIDS, a silent killer people don't understand; I check my sugar levels three times a week.

MJ was deeply aware of the severity of diabetes as a long-term illness that can cause severe damage if treatment adherence is not maintained.

Isaac – like MJ – compared diabetes to HIV/AIDS; he described diabetes as follows.

Isaac: Silent killer, quite a dangerous disease, in my opinion worse than HIV, kidney and organ failure unknowingly, important to control.

Sarah also compared diabetes to other life-threatening illnesses and indicated that diabetes was hereditary in her family.

Sarah: I saw my grandparents, dad, worse than AIDS and cancer – eats your organs from the inside and you don't know.

From the initial observations at the clinic, the researcher noted that diabetes caused reactions of fear for many patients – both newly diagnosed (as observed) and existing patients (as indicated in the data above). Most of the newly diagnosed patients observed had been quiet, looked down and displayed emotions of concern and distress when they had been told that they are diabetic. These non-verbal cues of distress had increased when such patients had been informed that they would need to change their diet, eating habits and routines.

7.6 PATIENTS' UNDERSTANDING OF DIAGNOSIS: KNOWLEDGE NEEDS, MASTERING THE DISEASE'S NOMENCLATURE AND LISTING THE DANGERS OF NON-ADHERENCE

In the literature review, it was explained that patients need to understand what diabetes is as an illness in order to be able to alter their attitudes positively towards maintaining their illness. If patients understand the communicated information about diabetes they can work towards maintaining healthy lives. Clinically, if patients have the ability to process the communicated message in relation to their illness, they will benefit accordingly. The intrapersonal models discussed in chapter 3 explained that

patients need to understand diabetes and the pros and cons of medication, in order for them to work towards achieving adherence and thus becoming well. Patients need to make rational decisions about learning to manage their diabetes in order to become healthy again.

It soon emerged from the fieldwork that patients had different knowledge needs and states, depending on the time since their diagnosis or the need to learn more owing to previous experiences of non-adherence. For example, newly diagnosed diabetics (Betty) acknowledged that they were still learning more about their illness while Frans and Priya after non-adherence, still wanted to learn more about diabetes. These patients required constant motivation from HCPs in order to learn to manage their diabetes and become fully adherent to medication. For example, Betty indicated that she had been diagnosed for “just about a year now, so still getting used to it.” Frans commented as follows: “Yes, hmm, practically I do not know enough, I understand you have to throw away worries, diet, check at the clinic.”

MJ, Isaac and Priya chose to rate their understanding of diabetes numerically with a percentage. The researcher hoped she would obtain an explanation of their understanding of diabetes, but these three patients preferred to use percentages. The researcher did not wish to interrupt these research participants when they provided a percentage understanding of their diabetes.

MJ rated his understanding of diabetes as “9 out of 10” and compared the severity of diabetes to HIV/AIDS (as discussed above). Isaac, like MJ, compared diabetes to HIV/AIDS, indicating that he was also aware that diabetes was a life-threatening disease. Isaac rated his understanding of diabetes as “75%” and was aware that he needed to keep his disease under control. Priya, like these other two patients, indicated that she understood diabetes but she too like Frans and Betty (as quoted above) still wanted to know more about it: “Yes, maybe 80%, but still getting used to know more about it.”

Only three patients indicated that they understood diabetes but needed to learn more. Betty was newly diagnosed and Frans and Priya indicated they were non-adherent and wanted to alter their lifestyles. Patients who want to learn more have the ability to *self-liberate* themselves, as seen with Betty, Frans and Priya – even though they indicated that they understood what diabetes was, they still chose to

develop a positive attitude (cognitively) and educate themselves further on diabetes. With improved knowledge, patients can become more informed in their health-care decisions. From a theoretical perspective, these patients displayed a readiness to want to learn more and thus had the ability to *self-liberate* themselves and become more involved in their diabetes care and treatment options (Prochaska & DiClemente 1984:39-40).

With this willingness to want to learn more about diabetes, Betty, Frans and Priya could understand their individual roles as patients better and would be able to fulfil their individual responsibilities in the health-care system more effectively. If patients understand their role in the medical system, they will be able to communicate interactively with HCPs and thus maintain their health-care (Northouse & Northouse 1985:82).

The remaining patients interviewed linked their understanding of diabetes to descriptive words such as: *sugar-levels, tablets, insulin and food-levels*, indicating that they understood what diabetes as an illness entailed. These patients had developed a *central route* to attitude change and thus understood the communication from the HCP (Heesacker & Shanbhag 2002:304). They displayed a fair understanding of diabetes and treatment options, and its link to sugar levels, tablets, insulin, and what food levels they need to consume in order to manage their diabetes. Stefan, Moses, Kevin, Ruby, Mo, Sarah and Ria had favourably processed the communication received from the HCPs with regard to diabetes education.

Stefan: Yeah, I understand, yeah, yeah ... on the food line you must check what you eat; you can't eat what you like to eat. Example, sweets you can eat one, not more, 15/16 year diagnosis – everything is under control.

Moses: Yeah, I understand it ... hmm, I know diabetes. They teach me at the clinic what it is, how to use insulin, something in the stomach called insulin, if not running properly, I use insulin and tablets.

Kevin: Yes I do, to me you take your insulin – your tablets – you must take insulin on time.

Kevin then went on to describe and explain the method and the scheduling of dosages.

Ruby described her understanding of diabetes as: “**sugar levels.**” As indicated above, Ruby hardly spoke at all and wanted to work towards becoming adherent. She was going to achieve adherence with the support of her daughter. Mo, like Ruby, described diabetes as follows:

Mo: It’s a disease, insulin and tablets”; and Ria as “the doctor diagnoses you, you understand when its high and when it drops, you understand what to do.

Harry also linked diabetes to sugar levels in the following manner:

Harry: Diabetes is if your sugar levels are abnormal, could be high, could be low. If your sugar levels are low you start to sweat, feel weak, eat something to get your levels right. I haven’t experienced high levels, only low.

Sarah described diabetes as follows: “Eating habits, eating habits and precautions.” She also reiterated the fact that she had nursed her father and was therefore well aware of what diabetes was, since she had first-hand experience of the disease. Sarah’s repeated use of the words “eating habits” indicated to the researcher that she had experienced concern and a bit of annoyance with the fact that diabetic patients need to alter their diet. The researcher observed how the issue of food troubled Sarah; she dwelt on this in the interview:

Sarah: I am fine, eating in moderation – like if you offer me something to eat I will take a small piece just to please. Water is the answer to it all – I am very careful when I am cooking, use less oil and sugar, or sometimes no oil and sugar at all.

The question of food was a concern to Sarah; she was affected by the fact that she could no longer eat normally.

Vivian and Howard focused their explanations on the consequences of untreated diabetes, which is linked to the emotional reaction of fear for diabetes as discussed above in patients.

Vivian: Well diabetes attacks all your organs, amputations of legs and heart disease.

Howard: Diabetes is incurable, medication is constantly needed – insulin injections I have been taking for many years, now I needed more dosage – 62, 50 in

evenings [the patient went on to explain the dosage of medication he consumed at different times of the day]. The doctor made me understand it destroys the eyes – there are many symptoms.

7.7 NEGLIGENCE AND NON-ADHERANCE RELATING TO THE SOCIAL CONTEXT OF PATIENTS

Non-adherence refers to patients defaulting on their diabetes medication and lifestyle management. When viewed from a medical perspective, medication is provided to patients who are diabetic and patients need to consume such medication in order to maintain their health. The patients narrated their defaulting (negligence) in terms of a wider array of social circumstances. Different social contexts of the individual patients need to be taken into account when assessing negligence and non-adherence in patients and this re-emphasises the need for patient-centred care in the public health-care system.

Multiple dimensions of negligence and defaulting emerged from the data, such as the following:

- Frans, who had stopped taking medication completely;
- Isaac, who had an extra in-take of sugar;
- Kevin, who had continued with a diet overloaded with sugar;
- Ruby's inability to cope or accept her illness;
- Priya who had blamed her non-adherence on her care duties for an ill child;
- Vivian who had missed dosages because she came home late; and
- Harry who had neglected his treatment owing to changes in his diet.

These idiosyncratic experiences were deeply embedded in these interviewees' sociocultural contexts as discussed below.

Frans was brave enough to admit he had been negligent and defaulted completely. However, he had returned to re-start his treatment anew:

Frans: Now I am prepared to change. I took medication, then stopped and then did not come back for more medication. I had financial issues and could not afford my own medication, but I turned over a new leaf now – I want to change and adhere to medication.

Frans also indicated that he had been afraid to confront his illness and had therefore defaulted on the treatment.

Isaac indicated that he had been adherent to the treatment but was honest enough to indicate the following: “For two days I had sugar, extra sugar, and I felt bad, but I told the nurse about my extra sugar intake.”

Kevin also admitted honestly to having been negligent:

Kevin: Yes, I was drinking and smoking, especially at night I would drink a 2-litre coke by myself, every night. Then the doctor explained to me one glass has four tablespoons of sugar in it – I experienced a very big wake-up call. I want to see my grandchildren grow in front of me. Yes I did default then, but now, never.

Ruby did not inform the researcher that she had been negligent with her treatment; instead, the nurse had communicated with her about her non-adherence in the researcher’s presence. Ruby was extremely reserved and had simply smiled when the topic came up. Ruby did not provide a reason for her non-adherence; she had only indicated that she would now like to change and become fully adherent. She indicated that she had been working towards this goal with the help of her daughter’s support and encouragement. The idea of family as positively contributing towards diabetic patients’ health-care is evident in Ruby’s situation above where her daughter was helping her cope and manage her diabetes (as discussed in section 7.4 above). Her daughter was supporting and encouraging her mother to learn to cope with her diabetes.

Priya indicated she had defaulted at one stage because of her life circumstances, as discussed above:

Priya: Yes, at one stage I did not take treatment, or eat properly. I only ate small amounts at certain times, because I was concerned about my child’s health. I did not worry about my own health and therefore defaulted, but the doctor reassured me and I want to get better now.

Vivian had also defaulted and indicated that she had felt extremely guilty about it; therefore she would ensure that it never happened again:

Vivian: Yes, I did once, couple times my sugar went up so I controlled it again. Just one day I skipped it and I feel guilty, it's not the HCP's fault. I came home late and therefore didn't take my medication. The HCP scolded me because it is important for my health.

Harry had also defaulted once four years ago:

Harry: Yes, only once I stopped, and never again; if I don't adhere to it, I will land up in hospital and I do not like that.

Harry indicated that he had been admitted to hospital and put on drips when he was non-adherent. He had experienced this incident because he had been on a diet and had therefore taken his medication incorrectly, and thus become very ill. He indicated that he had disliked being admitted to hospital and would therefore not default again.

Frans, Isaac, Kevin, Priya, Vivian, Ruby and Harry had all relapsed in their treatment. Owing to their *relapse*, the patients had been affected emotionally, physically or psychologically (Prochaska & DiClemente 1984:29). Frans had been affected physically because he had fallen ill and developed a sore on his foot. Kevin and Isaac had also been affected physically as the extra sugar intake had made them feel ill.

Priya had been affected emotionally by her relapse; she had been sad after neglecting her health and had rationalised her non-adherence with her child being ill. After Priya had relapsed she realised that she needed to take care of herself and her child, since neglecting her own health would further jeopardise her child's health. Her initial negative attitude towards concern for her health was set aside in order to focus on the health of her child. Persuasive communication had failed to motivate her and she had retained her initial negative attitude towards her treatment adherence. Priya had not been motivated to process the communication about treatment adherence owing to the personal responsibility she had felt towards her child's health-care (Heesacker & Shanbhag 2002). Priya assumed that by neglecting treatment she was retaining her position as a "responsible mother". However, she needed to contemplate her illness and seek medical help in order to regain control of her life.

By doing this she would have been able to control her diabetes and take care of her ill child at the same time. This discussion is linked to the conceptual focus of the question of family (from the social context): Priya needed to take care of her child, but she had also needed to maintain her own health-care.

Vivian had been affected emotionally and experienced “guilt” about her *relapse*. Feelings of guilt, anxiety, distress, anger or fear are common for diabetes patients as acknowledged in the literature (Polonsky, Anderson, Lohrer, Welch, Jacobson, Aponte, Schwartz 1995:754; Snoek, Pouwer, Welch & Polonsky 2000:1305). Harry believed that a diet would improve his health and he had thus relapsed in his treatment, but had ended up becoming physically unwell because of his negligence. According to the ELM, Priya, like the other research participants who defaulted on their treatment, had followed the *peripheral route of processing* and thus developed a negative attitude change. This attitude change was not in the patient’s best interest and occurred because of individual experiences and distractions that these patients experienced (Heesacker & Shanbhag 2002:316).

The patients had neglected treatment because of different social circumstances, for example, Priya’s social context of her ill child, where she had assumed that by neglecting herself she was dedicating more time to her child. Harry, like Vivian, had displayed different reactions to defaulting. Harry had been afraid of being hospitalised and thus indicated that he would not default again. Vivian had come home late and missed her dosage but acknowledged that it had not been the fault of the HCP and that the HCP had scolded her for her own good. Vivian was the only patient who had been “scolded” by the HCP, but when analysing her interview data, she had understood this “scolding” as “good/concerned” communication because it had been for her own good. The HCP had been concerned about her health and had therefore told her not to skip medication Vivian commented as follows: “The HCP scolded me because it is important for my health.”

Ruby’s inability to cope with her illness, Kevin’s over-loaded sugar diet, Isaac’s extra sugar intake and Fran’s fear emphasise the social context of these individuals which need to be taken into consideration by HCPs and acknowledged in the medical system. This emphasises the point raised about patient-centred care where HCPs need to approach patients with an accommodative communicative style in order for

patients to open up about their social concerns that impact on them neglecting and not adhering to medication.

As discussed in section 7.3 above, the staff nurse accommodated Isaac's use of the herbal remedy to cure his foot sore. He thus indicated that he had told the nurse about his extra sugar intake. However, the point to be noted is that his social context of "missing out on his favourite foods" needed to be accommodated by the HCP in order for him to have avoided this extra sugar intake. This further emphasises the point of information transfer (HCP to patient transfer of information only) only as opposed to information exchange (HCP-patient interactive communication) that caters for patient-centred care from the initial phases of treatment allocation to the patient. Counselling is another form of information exchange since the HCP is required to ask the patient for information about his or her health, adherence issues and social context from the very beginning of treatment to work towards catering for the individual patient (patient-centred care) in order to provide additional advice or prescription of treatment regime. During counselling sessions, HCPs need to practise information exchange to be able to cater for the social context of the individual patient.

Frans, Isaac, Kevin, Priya, Vivian, Ruby and Harry all indicated that they had defaulted on their treatment for different reasons, as discussed above. However, theoretically these seven patients had reached the *self-re-evaluation phase* and chose to re-evaluate their negligence and seek medical help to work towards managing their diabetes (Prochaska & DiClemente 1984:38). In this way, the researcher was able to uncover non-adherence as a multidimensional experience in the lives of the research participants.

7.8 TRIANGULATION OF FINDINGS: PROOF FROM PATIENTS' DOCUMENTS

Even though triangulation of theories, methods (in-depth interviews, observation and documentation) and different sources of data from different interviewees (HCPs and patient) is explained throughout this chapter, this section focuses on patient adherence levels. This involved cross-checking the interview material collected from patients against their clinic records.

During the last week spent at the diabetes clinic, the staff nurse assisted the researcher in analysing individual research participants' treatment adherence records. The staff nurse accessed the patient files and explained treatment adherence patterns to the researcher. Since the staff nurse was the clinical expert she was able to read the recorded blood results for the duration of the period that the patient had received treatment at the clinic and thus inform the researcher whether or not the individual was adhering to his or her diabetes medication.

Five important issues emerged from this triangulation.

- (1) Some patients, irrespective of the time that had elapsed after their diagnosis or having witnessed the consequences of non-adherence (such as hospitalisation or consuming high sugar content), had still found illness self-management problematic.
- (2) Even though some patients understood diabetes, they had still neglected treatment and had chosen to be in denial by trying to live "normal lives" without consuming medication because of other commitments (such as work, sick children and lifestyle issues). These patients then needed to return to the clinic and re-start treatment in order to cope with the harsh symptoms of untreated diabetes (foot sores, dizziness and feeling ill).
- (3) Communication breakdowns had impacted on treatment adherence patterns. If patients did not understand how their treatment dosages were altered, they tended to become negligent and non-adherent.
- (4) Patients had developed routines in illness self-management which, when disrupted (example, receiving a different or additional medication prescriptions) could have made them non-adherent. Changes in the patients' treatment plan or health condition may have disrupted their lives. One patient in this study had to identify with a new treatment and a new health situation. The implication here is that learning illness self-management is an on-going, complex process.
- (5) Patients and HCPs alike lived in and through multiple social contexts that shaped their communication (i.e. their internal dialogues, their communication with one another and their re-telling of their lived

experiences of diabetes to the researcher) and these were not always perfectly compatible with optimal health.

When comparing the interview data with the patient files, the researcher discovered that Harry was not maintaining his adherence and was non-compliant with his treatment. Harry only indicated to the researcher that had he defaulted once four years previously, but according to his records, this was not true. Harry had defaulted on many occasions and had often been hospitalised owing to his frail health. Harry, however, had said:

Harry: Today I got up in the morning and I was dizzy and I will inform the doctor of this, so that I can get help.

It was evident from the data that Harry had been feeling ill but had refused to acknowledge that his negligence could have contributed to this. Harry's self-management of his disease was thus problematic. It was only his fear of hospitalisation that had spurred him on to request medical assistance. It can be argued that Harry had not reached the *self-re-evaluation phase* completely. He had indicated that he wanted to adhere to his treatment, yet he was not doing so. According to Heesacker and Shanbhag (2002:312), one can infer from this deduced that Harry did not have the *ability to process the communication* on treatment adherence from HCPs. This finding underscores the fact that diabetes patients need to engage with multiple others (HCPs and family members) and come to terms with their internalisation of their disease as something that is chronic, progressive and dependent on self-management.

At the age 67 years, Harry narrated a story that spoke of his determination to live a long life. Putting his intentions to live a long life into action had proven to be difficult, and he had found it hard to balance a long life with a good life. Using insights from Heesacker and Shanbhag (2002:304), one could thus infer that Harry was in the denial phase at the time of the study. This might seem surprising given the fact that Harry has known that he is diabetic for ten years. Harry had displayed no linearity in acceptance and compliance after his diagnosis.

This finding suggested that patients are not passive repositories of the education they receive from the HCPs. Instead, on the one hand, they actively negotiate what their illness roles should be, voicing a desire for health maintenance, and on the

other, a need to continue with their lifestyles as if diabetes was not an issue for them. Such seemingly incompatible motivations could reside in one patient (example, Harry) irrespective of the time since diagnosis.

Another surprising finding from a comparison of the patient files with the interview data was that according to Howard's records he had an increase of 2% in his blood glucose levels in June (at the time of the research). Howard did not inform the researcher of any negligence in his treatment patterns. Instead, he had assured her that he was fully adherent. The nurse did not indicate any concern with regard to Howard, since she informed the researcher that she had never seen him being ill or defaulting on his treatment before. The nurse attributed this incongruence to "some misunderstanding". When probed to explain what she meant, she suggested that the file showed that the doctor had altered Howard's treatment dosage. She deduced that Howard had perhaps misunderstood the new dosage, which had caused his blood glucose levels to rise.

Returning to Howard's interview data, the researcher was able to confirm that he had indicated that his medication had been changed by the doctor in June. He had also said that he needed clarification from the doctor on his new dosage and the fact that the doctor had also prescribed medication for hypertension. Howard commented as follows in this regard:

Howard: The doctor changed my medication on the 5th of June; I got [high blood] pressure, so I am sick with that too. I need to check with the doctor to make sure before I start the treatment.

Howard was 72 years old, and had cognitively processed the incorrect information, and consequently, his blood glucose levels had increased. Howard, in comparison with Harry, had displayed linearity in his treatment compliance after diagnosis, but had defaulted because of a communication breakdown. The co-morbidity of diabetes and hypertension in his case meant that the responsibility placed on Howard to self-manage his illness was considerable. This underscores the notion that living with diabetes is a complex matter that intersects with other health concerns, day-to-day routines and established relationships. Any change in these factors requires a renegotiation of the illness role and daily treatment regimen, no easy task for a 72-year-old.

Regarding Frans, Kevin, Vivian, Ruby, Priya and Isaac, these research participants did neglect or default treatment as indicated above in the interview data. Frans had been completely non-compliant and was re-starting treatment, Kevin's blood results were still extremely high and was due to come back to recheck his bloods in order to monitor his adherence levels. Vivian, however, had shown an improvement and her blood-glucose levels had in fact decreased, according to the filed records. According to the records, Ruby had shown some improvement because her bloods had moved from a 9.8 down to 9.4. According to the records, Priya had been working towards maintenance and she had improved noticeably, according to the nurse. Records showed that Isaac was still being monitored after his foot sore, and the records showed that he needed to come for a follow-up of his bloods before he could be classified as adherent.

The staff nurse indicated that Sarah and Mo were maintaining their treatment adherence well. Cognitively, these patients had developed a favourable attitude change and were thus maintaining adherence.

Taking into account what Prochaska et al (2008:101) state, it can be argued that MJ, Stefan, Moses, Priya, Sarah and Mo were all based in the *maintenance stage* since they had adopted illness self-management. These research participants were continuing positive behaviour change, had altered their lifestyles accordingly and had accepted their diabetes status.

Ruby, Betty, Vivian and Ria had shown improvements in their treatment adherence levels. Frans, Isaac and Kevin were keen on re-starting treatment and working towards maintaining their health, with a positive cognitive attitude change which favoured adhering to medication. The researcher inferred from this that persuasive communication had occurred between HCPs and patients in respect of Ruby, Betty, Vivian and Priya.

The consequences of these findings clearly indicate that the biomedical approach to health-care, which assumes that linearity or docile compliance that occurs on the part of the patient following knowledge imparted by the HCP is flawed. Interactive patient-centred care is essential for diabetes treatment and the psychological connotations of the individual patient need to be catered for in order to achieve and maintain adherence. The reason why the patient neglects treatment, even though he

or she is well aware of the consequences, needs to be addressed in the social context of each individual.

7.9 PATIENTS' UNDERSTANDING OF DIABETES TREATMENT OPTIONS

Treatment resources were readily available for patients at the clinic. As indicated in the data below, patients were able to name the different types of medication that were provided at the clinic. This is hardly surprising as the technical knowledge about medicine and treatment lies almost exclusively in the sphere of medical experts. The following two spheres of biomedical care exist:

- (1) the patient sphere of illness self-management, which includes taking medication, keeping appointments, testing blood-sugar levels; diet; exercise; and avoiding smoking;
- (2) the HCP expert sphere, which includes medical knowledge, skill and interpreting tests and symptoms, education, dispensing medicine and instructions.

It should be noted that communication about medication and treatment options were HCP led, but in the case of Isaac (as discussed in section 7.3 above) the nurse had accommodated his use of a herbal remedy to cure his foot sore. Alternative medication is also indicated in the educational material (see appendix J, Diabetes South Africa 2000:7), which accommodates the use of traditional or alternative medicinal forms in conjunction with biomedical health-care (visiting the clinic, consuming insulin and regular check-ups). This was accepted by the various role players as a normal state of affairs in which HCPs provide treatment information, and the patient accepts the proposed treatment, agrees to the treatment option favoured by the HCP, or delegates the decision to the HCP. It was taken for granted that in the area of medicine and treatments, the HCP knew best. This was again seen in relation to Isaac, where the SOPD doctor had indicated that he should amputate his foot without any consultation with the patient. Again the issue of information exchange is reiterated since this caters for patient-centred care and the ability to obtain the patient's lived experience of the illness in order to cater for the social

dimensions relating to how the patient manages his or her illness in order for treatment regimens to be altered accordingly.

Harry and Ria were able to name the type of medication they were taking. They also told the researcher how the nurse had assisted in educating them by demonstrating how to inject insulin or take tablets. Harry, Frans, Isaac, Stefan, Kevin and Vivian knew a range of medication available for diabetic patients beyond those prescribed to them, for example, Metformin and Dynil. The patients had all named the source of their information to be HCPs. Most of the research participants were knowledgeable about insulin.

Harry: I was on tablets and this was not controlling my diabetes, then I was put on insulin for many years now, and my diabetes is well-controlled. The nurses' teaching helps us a lot, they demonstrate how to use the insulin injection and teach us. The nurses communicated the treatment options to me; they explained in tablets you get two forms, Metformin and Dynil, and insulin you inject straight. The doctor tells the nurse and the nurse tells the patient. Then after every 3 to 6 months, I check my bloods and see the doctor.

Ria: Yes, there are tablets and injections; I take two tablets in the morning, three in the evening, and I inject 4 units of insulin in the morning and 28 units in the afternoon. Yes, the HCP told me how to be careful and to use my treatment every day, or it will affect my life.

MJ, Frans, Isaac, Stefan, Moses, Ruby, Vivian and Harry pointed out that the nurses communicated with them about the various treatment options available to them. The nurses used information in booklets to educate patients on insulin injection devices (see to appendix J, *Your personal guide to living with diabetes*, Novo Nordisk Sa: 28–29). These patients specifically mentioned how the nurses at the clinic were always willing to help them understand the treatment options available. They also indicated that the nurses always listened to their experiences with the treatment they used, and if problems occurred they consulted with the doctor and found solutions to their problems. The researcher herself observed such interactive sessions between the nurses and patients at the clinic.

However, in the case of Howard, he was clearly confused about his treatment alteration and had perhaps misunderstood it, and this confusion had led to

negligence towards his treatment. This was indicated in the documentation recorded in his file. Harry was extremely knowledgeable about the different types of medicine available (as quoted above from his interview), but he was non-compliant. A communication breakdown had clearly occurred between the HCP (the medical doctor) and Howard, and this was only picked up from his filed information by the nurse who had indicated she would talk to the doctor about Howard's non-adherence. It could also be argued that negligence and non-adherence had actually occurred, as discussed earlier (see section 7.7 above) in seven patients (i.e. Frans, Isaac, Kevin, Ruby, Priya, Vivian and Harry) as mentioned above, as well as Howard (who had not mentioned his negligence to the researcher, but this had been picked up from the document analysis of his patient file).

Hence in a total of eight out of 15 patients, negligence and non-adherence had occurred. This could be attributed to the lack or inability of patient-centred care being practised with every single patient at the clinic. If information exchange which leads to patient-centred care is implemented in all patient cases from the initial stages of treatment, the patient's social context can be integrated in his or her treatment system from the beginning. This explanation is elaborated on in section 7.10 below, where HCPs endeavoured to cater for patient-centred care as viewed in the cases of Howard, Frans, Kevin, Isaac and Priya. However, with regard to these patients, their social context had only been taken into consideration after they had been non-adherent to medication. This had also been the situation with Ruby, where nurses made an effort to counsel her together with the support of her daughter only after she had been negligent. Vivian had not been individually catered for with regard to her social context of missing dosages. It was because of her social context (coming home late) that the HCP had scolded her for her own good and explained to her that she should not miss medication since this would be detrimental to her health. Harry's communication breakdown or misunderstanding needed to be noted by the HCP as a learning experience showing that patients should be communicated with interactively to ensure that they understand any alterations to their dosages.

The social context is absent or limited in these scenarios from the initial stages of treatment since the reality at public health-care facilities includes staff shortages, lack of time, low HCP-patient ratios for treatment and care and the absence of a full-time medical doctor based at the clinic.

7.10 TAKING THE INDIVIDUAL PATIENT INTO ACCOUNT: PATIENT-CENTRED CARE

The theoretical framework of the Biopsychosocial Model (chapter 2) and the Disease-Illness Model were the only two models that catered for the patient's perspective on health-care. Even though patient-centred care is acknowledged in the literature as contributing to diabetes care (as reviewed in chapter 4), it is lacking in both the intrapersonal and interpersonal models and theories as discussed in chapters 3 and 4. The *illness framework* catered for the *patient's agenda*, which explained how the HCP catered for the individual patient's unique experience of his or her illness (Levenstein et al 1989). The HCP catered for the individual patient's *ideas, expectations* and *fears* towards the illness. The *illness framework* from the patient's perspective is integrated in the *disease framework* of the *doctor's agenda*, and both the medical problem and the illness are attended to as well as the patient's perspective, as the person living with the illness. This model worked in conjunction with the conceptual model that the researcher developed as her contribution to an extension of the body of knowledge. The health-care system in South Africa needs to cater for a patient's perspective on health-care and treatment, as indicated in the conceptual framework. This is linked to the notion of interactive health communication in the HCP-patient relationship, which caters for information exchange between the two parties that allows for treatment advice and treatment regimens to be altered to benefit the individual patient, as discussed in the cases of the patients below.

This theme emerged from the data as discussed below, since the patient is the person learning to live with diabetes. If his or her unique individual experience is not catered for, he or she will be unable to maintain control over his or her diabetes condition. Multiple dimensions, such as the following emerged from the findings:

- The individual's concerns about needles is one of these dimensions. Howard mentioned his concern over the area on his body where he used to inject his insulin which could not take any more injections, since his needles were becoming bent. He had discussed this concern with the HCP and the HCP

had provided a solution to his problem by requesting that he inject in another area.

- Travelling commitments as an obstacle to treatment adherence was expressed by Frans. He mentioned that he sometimes forgot to take medication due to work and travelling commitments. The HCP provided a solution by requesting that someone remind him to take his medication on time.
- Irregular working hours were an obstacle to treatment adherence for Kevin. He worked day and night shifts and thus found it difficult to eat and take medication at odd times (especially during night shift).
- Tolerance of a herbal foot balm which had helped cure Isaac's foot sore was another issue.
- Priya's sick child had been taken into consideration.

Howard: Yes, whatever you tell them they take into consideration, because you are giving your complaint to them. Look at me, I told the doctor, see my marks where I poke my needle in, the needle is getting bent, I told the doctor about this and the doctor told me to carry on poking in another place because there is no one else to help me poke on my arms. The doctor and the nurse always ask the patient how you're feeling.

Frans: From the looks of things, whenever I approach them, they offer great help. Yes, they help me manage my disease because I had a problem with taking my medication because of travelling and my work issue, and the madam says, don't you have someone to remind you of your medication? I said to her, not at this point in time.

Kevin: Yes, I told the nurses I work night shift and I can't eat at normal times, and they helped me according to my times. They took my situation into consideration.

Isaac: Yes, remember, I told you about the plant balm I used for my foot? The nurses listened to me and let me use it. They helped me manage my disease and I saved my foot.

Priya: Yes, mostly when we were at the bottom, the nurse asked me to show her my lunch; she always talks to the patients. She asks me if I am eating, because I wasn't eating properly because of my sick child.

Helping patients to manage their illness according to the patient's concern was demonstrated in the case of Howard above. He was unable to inject himself in the usual area with his insulin because his skin had thickened and the needles were thus becoming bent. The HCPs advised him of the different areas on his body which he was allowed to inject his insulin into in order for it to still be effective. Kevin's story was similar to that of Frans, and he indicated that work commitments caused him to neglect his treatment. Kevin indicated that he worked night shifts and thus experienced difficulty with his eating patterns and so was unable to take his medication on time. The HCPs had educated him on diet and medication adherence according to his work schedule. They had tailor-made a health plan to help Kevin adhere to his medication. Tolerance of herbal remedies had occurred with Isaac, where the nurse had allowed him to use the herbal balm to treat his foot injury. The conceptual model included the social context, which caters for both cultural dimensions and the family as a dimension to health-care in South Africa. As reviewed in the literature in chapter 4, culture affects social life and thus needs to be catered for in the medical system. HCPs' concern about their patients' personal problems was seen in Priya's data, as indicated throughout the chapter. She had neglected her treatment because of her sick child. The HCPs at the clinic had endeavoured to cater for the individual patient's concern regarding treatment adherence as indicated above. However, this had only occurred after the patient had defaulted treatment (as explained in section 7.9 above).

7.11 SOURCES OF COMMUNICATION CONSULTED TO FACILITATE THE PATIENTS' UNDERSTANDING OF DIABETES

According to the theoretical models discussed in chapters 3 and 4, persuasive communication can either entail a positive or a negative attitude change in individual patients receiving diabetes health-care. According to the ELM, patients at the

diabetes clinic underwent a *process-oriented* approach after receiving communication relating to their illness from the HCPs. After communication, patients need to cognitively absorb the communication positively in order to work towards maintaining treatment adherence. However, if a negative attitude change occurs, the patient follows the *central negative attitude change* route and will cognitively retain his or her initial negative attitude towards the illness. In this way, treatment adherence will be lost and the patient will become negligent. At the diabetes clinic, HCPs used tailor-made messages created specifically for diabetes health-care which included informative brochures, pamphlets, magazines and posters. Research has indicated that tailor-made messages are more beneficial in individual health-care (Updegraff et al 2007:256; Koh, Brach, Harris & Parchman 2013:357). Individual patients see benefits in tailor-made messages and thus elaboration likelihood is high and a positive attitude change occurs towards treatment adherence. HCPs have the ability to provide therapeutic communication to patients to ensure that effective health-care is achieved. Interactive health communication between HCPs and patients can ensure that a positive attitude change occurs in patients. ELM theory states that persuasive communication must be sent from the receiver, who for the purpose of this study is the HCP, to the patient. The patient must then be mentally challenged for a positive attitude change to occur in order for treatment adherence to be maintained.

In terms of the findings, sources of communication emerged in terms of two sub-themes (see below), namely HCPs as a source of information and the media as a source of information, which both facilitated patients' understanding of diabetes. Patients indicated that their major source of information on diabetes was the HCPs at the clinic (interactive health communication sessions). Media sources such as television, radio, magazines, brochures and books were also accessed by patients in order to educate themselves further on diabetes as an illness. Ria, Betty, Isaac and Moses had received all their diabetes information from staff members (HCPs) at the clinic only, indicating that four of the 15 patients had built their knowledge about diabetes solely on what staff at the clinic had communicated.

The two sub-themes will be discussed below in relation to the discussion above. The verbatim quotations listed below (see sections 7.11.1 and 7.11.2) relate to the explanation in this section (section 7.11).

7.11.1 HCPs as a source of persuasive communication at the Stanger Hospital diabetes clinic

Ria, Betty, Isaac and Moses had received only persuasive communication from HCPs at the clinic, while Howard and MJ had sourced information on diabetes from both HCPs at the clinic and media.

Ria: They teach us here at the clinic – I have no book on how-what I need to do, how to do it like exercise and all I learn from the clinic.

Betty: I learn everything at the clinic only.

Isaac: No, honestly, I have not read anything, not even the Internet; my major source of information is the clinic only.

Moses: I only use the hospital material, no other material at all.

Howard and MJ had received their information on diabetes from both the HCPs at the clinic and the media:

Howard: Doctor, nurses, clinic, brochures and the pictures help.

MJ: Internet, health sections in magazines, the staff at the clinic– new things you learn every day.

7.11.2 The media as a source of persuasive communication: magazines, television, brochures, pamphlets, radio and books

Stefan, Kevin, Ruby, Mo, Sarah, Vivian and Howard's major source of information on diabetes had been media. The media educates diabetic patients on diabetes as an illness in general. Thus, theoretically information produced in the public domain in relation to diabetes is in line with diabetes education and treatment adherence measures as approved by the public health-care system. Educational information on the illness is available at public health-care facilities (proof of this can be seen in the brochures and magazines attached in appendix J). The hospital also provides educational material to patients, which allows them to interact with the HCP with correct knowledge or information obtained in relation to diabetes.

Stefan: “I read magazines, anything I read to learn more on diabetes.]

Kevin: I read magazines, watch television talk-shows about diabetes; the company I work for has a company doctor, so he helps me; he gives me pamphlets every month.

Ruby: No, we read about diabetes, see television at our houses. It gives a lot of information about diabetes.

Mo: Sometimes I listen to the radio, Ukozifm – especially I call in the show and speak to the sister on the air.]

Sarah: Listening to the radio, the doctors speak on, well, every sickness, but you learn from listening to the radio.

Vivian: I got a booklet for diabetes, plenty of information about exercise, how to control your diabetes, and I use the television and radio for sources of information.

Harry: I mostly listen to the radio and watch the television screen.

Frans was the only patient who had mentioned that he had no sources of information owing to the fear and denial he had experienced in relation to accepting his diabetes diagnosis. He had been completely non-adherent and had thus refused to go to the clinic or to source the media for information. Frans had decided to turn over a new leaf after a sore had developed on his foot, and he had thus returned to the clinic as a first step to sourcing information again. He explained this as follows:

Frans: I don't have any sources really, because I have not been in a position to get into the nitty-gritty of everything. I changed my mind to get into everything now, because of the sore on my leg– it's a wake-up call for me. I will now source more information, because now I am prepared to change.

Priya had made an interesting comment relating to her source of information. She was the only patient who indicated that she had sourced her information from fellow diabetic patients she had met and befriended at the clinic:

Priya: I get my information from everywhere. If I come to the hospital, or meet another diabetic patient, I ask about the illness and we speak; that is how I

build up knowledge. If it is not my day to visit the clinic, I ask them questions and they help me.

The clinic encourages the role of support groups. Patients are encouraged to join and receive support from fellow diabetics in relation to coping with their illness. This is emphasised in the diabetic education material booklet (see appendix J). The *Diabetes and you* booklet, which discusses Lindiwe's story illustrates how Lindiwe joined the Diabetes South Africa support group at the clinic (Diabetes South Africa 2000:14).

Diabetes South Africa is a non-profit organisation that was founded in 1969 to assist and support patients diagnosed as diabetic. The Diabetes Association of South Africa interactively communicates with diabetes societies in aiming to educate and inform them on the illness. Interactive communication occurs in the form of support groups, informative literature (such as brochures, booklets, comic books, among other forms of literature) and the use of HCPs to educate and update societies and diabetic patients on the illness and treatment options available. The question of support is emphasised by the association. The association's primary aim is to provide information and education on diabetes as an illness. The association emphasises education via communication for ensuring effective patient care. Hence literature is produced and disseminated for educational purposes.

The discussion on communication sources and resources continues in sections 7.11.3 and 7.11.4 below as observed at the clinic. The different communication resources available at the clinic to help educate patients on diabetes are also discussed and illustrated.

7.11.3 Communication resources: posters, brochures and booklets available at the diabetes clinic in English and IsiZulu

The researcher observed the different communication tools that the nurses used at the clinic to educate patients on diabetes. During sessions at the clinic, the staff nurse opened a brochure and explained to patients how diabetes affects the foot, for example (see appendix J, *Diabetes education: foot care*). Then the nurse would educate the patient on foot care, explaining how to wash his or her feet or how to

check his or her feet for any sores, and explained to the patient what type of shoes to wear. The nurse also provided this educational material to patients so that they could educate themselves about diabetes at home or in their free time.

The researcher asked the nurse for samples of the education material used at the clinic and she provided her with many informative brochures and pamphlets. Examples of this material appear in appendix J (Educational diabetes material). The nurse explained that the material was available in both English and IsiZulu, since the latter is the predominant language in the KwaZulu-Natal province. These material resources were provided to the clinic by the legitimate governmental system to help educate patients on diabetes as an illness.

The researcher was able to observe how the nurses used these booklets to educate patients. The clinic was a neat and colourful place and this contributed to its welcoming atmosphere. The clinic was an excellent source of information as posters were put up throughout to educate patients on diabetes. The researcher noted in her journal how the nurses used posters and brochures and booklets to “show and tell” what diabetes as a disease entailed, what its side-effects were and how to take care of oneself as a diabetic patient.

The researcher was given permission to take a few photographs to indicate the communicative display at the clinic, which are included below [Research journal notes].

7.11.4 Sources of communication found at the diabetes clinic: poster communication

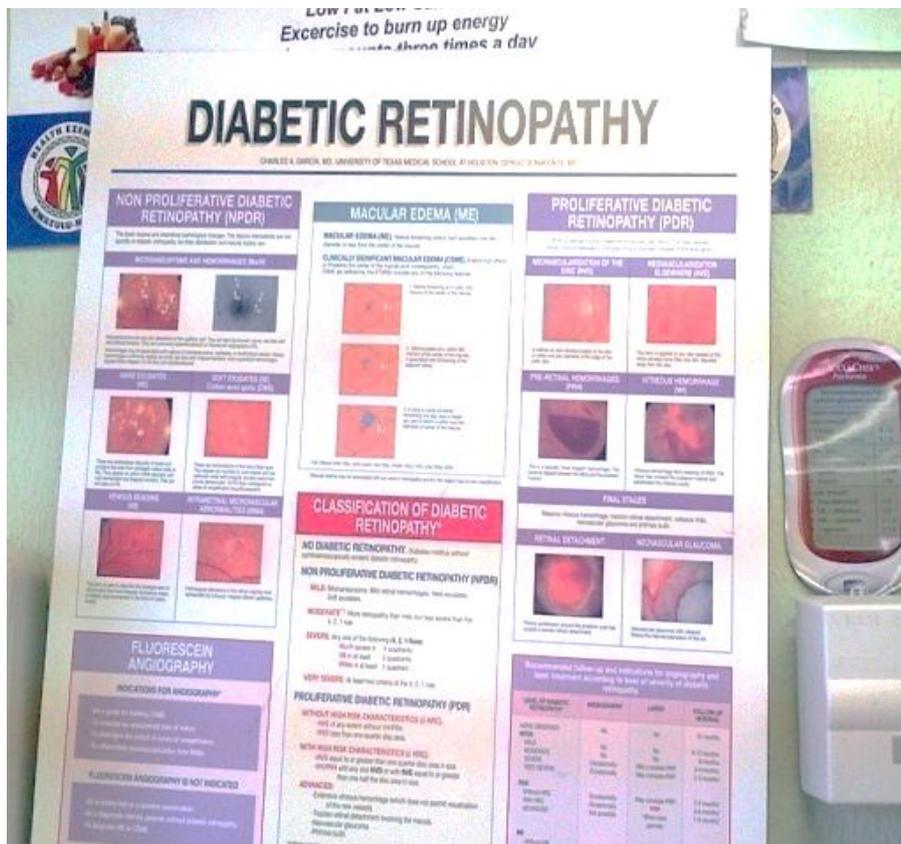
As indicated above, the clinic had posters with graphical information on diabetes all over the walls to further educate patients on diabetes. A brief description is given below of the posters.

Poster 1 contains information on diabetes retinopathy and shows the different stages of eye deterioration with diabetes.

Poster 2 (a collection of posters) contains information on diabetes as an illness, including how to treat hypoglycaemia, and the different steps a patient needs to

follow to help treat this diabetes condition. It also provides information on the healthy diet that a diabetic patient needs to follow. It shows the symptoms of diabetes. Other posters provide education on diabetes, such as where to inject insulin on the body and other general information on diabetes.

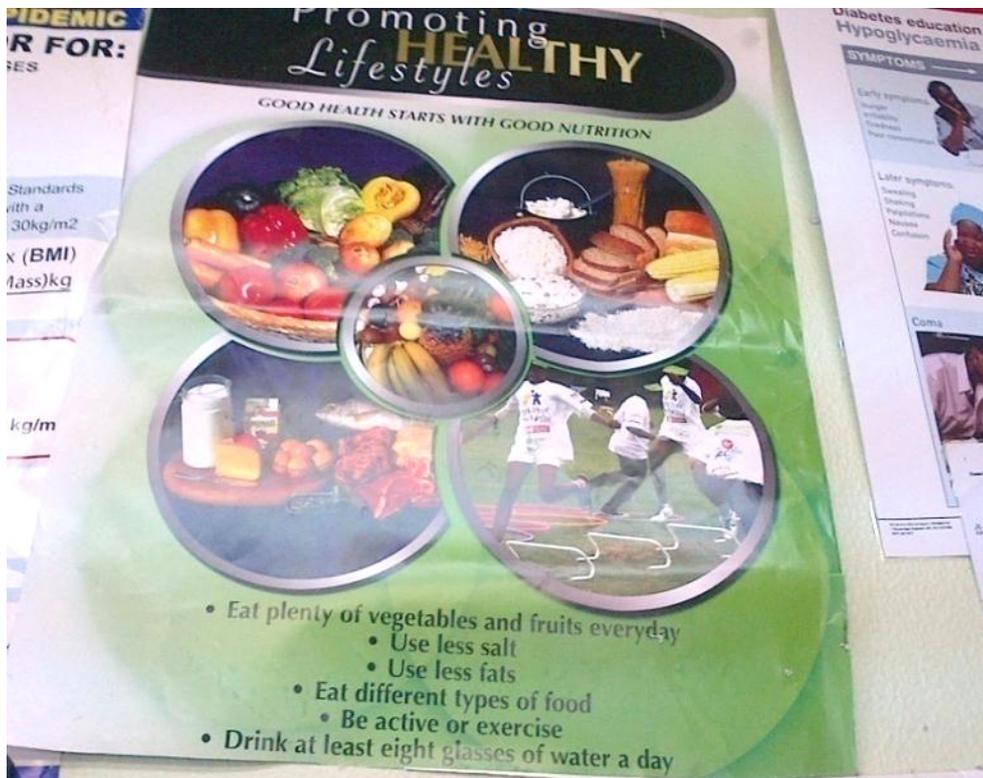
Poster 3 provides information on how to maintain a healthy lifestyle with diabetes by eating healthily and exercising. The researcher photographed poster 4 to emphasise the severity of diabetes as an illness, since diabetes kills one person every eight seconds. This poster indicates the reality of diabetes as a life-threatening illness that can kill if it goes untreated. It was observed that nurses use poster 5, when individual patients' eye tests are conducted at the clinic. The nurses ensured that they tested the eyes of diabetic patients since many patients could go blind from the disease. Blindness is another harsh condition related to diabetes. The researcher included these photographs below to indicate how communicative tools were used to show patients what diabetes as an illness entailed, its symptoms and complications.



Poster 1: Diabetic retinopathy



Poster 2: Diabetes education



Poster 3: Lifestyle changes: how to eat healthy



Poster 4: Deadly effects of diabetes reality



Poster 5: Eye test sheet used to test diabetic patients' eyesight

7.12 THE HCP-PATIENT RELATIONSHIP: FEELINGS TOWARDS HCPs AND COMMUNICATION EFFECTIVENESS

The theoretical framework of the health communication model for effective communication between HCPs and patients indicates potential barriers that can hinder effective communication in HCP-patient relationships (Northouse & Northouse, 1985). The model indicates that patients need to understand the communication sent from the HCP in order for behaviour to be altered positively. The model does not cater for contributing factors that facilitate these effective relationships in the medical system. The research participants experienced no *role uncertainty* in their relationship with the nurses at the clinic. Both the patients and HCPs were aware of their roles in the maintenance of health at the clinic. The patients listened attentively to the medical doctor and did not ask him many questions, but rather they directed their questions to the nurses at the clinic.

As explained throughout this chapter, the HCP is the senior communicator in the HCP-patient relationship. The patients seemed more comfortable with the nurses than the medical doctor. This is understandable given that the patients tended to consult more with nurses at the clinic than with the medical doctor who was only available once a week. This was also clearly evident during the observation sessions on clinic days. The theoretical models discussed in chapter 4 explicate the nurse-patient relationship in health-care. Nurses are acknowledged in the literature (as discussed in the nurse-patient models in chapter 4) as effective communicators or communicators who spend more time with patients (examples being for counselling or aiming to cater for or listen to the patient), and this was evident in the data collected at the clinic. The public health-care system is financially strained and cannot afford hiring more medical doctors who are permanently based at the clinic because of cost factors. However, Ria (as discussed below) felt that she required direct help from the medical doctor specifically but was aware that this was not possible owing to his lack of availability.

None of the theoretical models provide a theoretical view on the “good” HCP. However, the data explains multiple dimensions of “good” HCPs who facilitate effective communication for diabetes health-care. All 15 of the research patients (as quoted verbatim below) indicated that they had received effective, interactive

communication from the nurses at the clinic. However, Ria indicated that she had initially experienced a communication breakdown at the clinic owing to an ear infection, which was a side-effect of her insulin (as discussed below). This matter was cleared up and thereafter she indicated that communication had occurred more effectively for her. She also expressed a need to communicate more with the medical doctor specifically, but that this was not possible owing to his absence at the clinic (which she understood well). Ria's situation is discussed in detail below.

The interactive communication sessions observed showed that the nurse educated the patient on diabetes as an illness. The nurse used educational and graphical material resources (as illustrated 7.11.3 and 7.11.4 – and see appendix J) to educate the patient on diabetes. The nurse listened to the patient's symptoms, fears and concerns and counselled the patient, using persuasive communication to assist the patient to alter his or her behaviour positively by adhering to the treatment schedule. Some patients even preferred to name the nurses whom they would directly go to for help. The chief professional nurse and the staff nurse were the two names that patients mentioned as the most effective communicators and educators on diabetes. Given the fact that the staff and chief professional nurses were specialist diabetic nurses who had been employed at the clinic for a long time in comparison to the other nurses, most of the patients were more acquainted with them and thus preferred to seek medical service from them directly. All the patients enjoyed receiving treatment from all the nurses. Each patient used a positive word to describe the nurses. Their word choices included *kind, helpful, willing, very good, nice, wonderful, caring, and concerned*.

Moses: The nurses, I am feeling right, they treat me nicely. The doctor also, when I come here and asked something I don't know, they tell me what I must do. Yeah, they treat me very nicely.

Ruby: The nurses, they are very good to you, yes they communicate effectively – when you ask them anything they tell you what to do, they give you the answers.

Priya: I will rate them as professional at their job, they are always kind and willing to help, excellent communication. The staff nurse, the chief professional

nurse, the enrolled nursing assistant, am closer to them because I was introduced to them. They are very caring.

Betty: The nurses talk to us, they educate us, they explain to us and they care about our health.

Frans: The chief professional and staff nurse, they are so comforting and communicate so effectively to us because of their advices, it's good advice; they want to help us all.

Stefan: The nurses are very fine, I have no problem with them. Yeah, they communicate well– if you complain they explain to you, you can talk to them. The staff nurse or anyone, because if you talk to them they explain to you what is right, what is wrong.

Kevin: The nurses, the communication is very good, they talk to us nicely. They explained well about diabetes. If I need help I will ask anyone, I am confident they will help me out. Even though I don't know the staff yet, but I am sure that anyone will help.

Mo: I feel okay, aay, because since I started here for treatment; what they told me really helped me, both the nurses and the doctor. I ask the nurses first– I come wait in the queue and ask when my turn comes.

Vivian: The nurses are very friendly and always helpful; they show you where you need to go and what you need to do. Anyone, any nurse, because if you need the help you need to ask, any information they help with, even when I ask for directions at the hospital.

Harry: I am very happy with both the doctor and the nurses. Yes they do communicate effectively, because every time I had a problem I was at the hospital and communication wasn't a problem. I always talk to the staff nurse because I used to explain my situation to the staff nurse, and ... ehm ... she's the person at most times that made me feel comfortable.

Diverse notions of what it means to be a “good” HCP (nurse) emerged from the interviews. These included the following:

- The HCP effectively explained diabetes to patients and is therefore a good medical professional.

- The HCP was a good communicator and educated patients on diabetes.
- The HCP used a reward system and gave patients soup when they maintained adherence. This reward system is theoretically linked to the TTM, stage process: *contingency management*, where HCPs reward patients who maintain adherence (Prochaska et al 2002:104). The reward system makes the patient feel special and acknowledges his or her determination to want to get well. MJ indicated that he had received soup from the nurses because of his adherence to his medication. The nurses respected the different cultural backgrounds of their patients and thus catered for specific dietary requirements so as not to offend their patients. He had felt special because his adherence had been acknowledged by the HCPs at the clinic.

Descriptions of nurses as friendly, smiling and joking with patients were mentioned by MJ, Isaac and Sarah and are shown below.

MJ: The nurses are wonderful, the reason is the smile on their faces. We share jokes, and everything goes on well from there. The nurses are very concerned about us; they make sure we do our treatment, and they reward you with a soup cup. Thus encouragement is given to patients to feel good and better. Any nurse, because everybody helps us the same, every nurse greets you.

Isaac The nurses, they are very nice, pleasant and helpful. Yes, they communicate effectively and they are very responsible; if you need anything, they help and direct you to the right places. I will ask anyone at this clinic for help, because they are all helpful, they are fun and they joke—not stuck-up people. Actually this is one of the few clinics I look forward to coming to. This clinic is very nice.

Sarah: I don't have a problem; whatever you want to know they tell you. Oh yes—communication is effective. No, I talk to everyone, as long as they have a smile.

Respect for HCPs' training and professionalism also emerged from the data. The HCPs were respected by the patients as providers of care. Respect for qualifications was emphasised by Howard: "The nurses provide a good service to us; they are kind enough to explain to you in a good manner, for example how this medication works.

This really matters to me [points his finger to his chest]. The nurses are all professional, they know better, they are knowledgeable to get the diploma or degree or whatever it is.”

The biomedical hegemonic belief (as explained in chapter 2) indicates that the HCP is the respected person in the HCP-patient relationship for treatment and care, emphasising that the respect occurs from one side. Yet the findings show that at the clinic, the patients and the HCPs (specifically nurses) both displayed respect towards each other. The dimension of the HCP demonstrating concern for the patient was indicated by MJ, Betty, Frans, Isaac, Stefan, Moses, Kevin, Ruby, Mo, Sarah, Priya, Vivian and Harry above. Theoretically the Disease-Illness Model indicates that the HCP caters for the patients' concern in the health-care environment (Levenstein et al 1989). However, in the literature reviewed in chapter 4, the social dimension was also expanded in this regard.

Communication break-downs: Ria's initial experience

Ria indicated that she had experienced a communication breakdown when she had first been diagnosed as diabetic, when she had had an ear infection as a side-effect of her insulin usage. The nurses indicated that there was nothing they could do to treat it and it would go away because it was a side-effect of her medication. However, she did not understand this and felt that they were not helping her. During the interview she then went on to say: “if you tell them you have a problem, they must take you seriously, sometimes they don't take you seriously.” When probed about her communication experience further Ria discussed this statement briefly: “sometimes because, I got a problem, when I started using insulin, I started, something came up here in my ear, but they can't treat it. The thing is I do not know how ...” she indicated that she had felt dissatisfied because she was not receiving any help. However, because she was afraid of her illness (as indicated under the emotion theme) and insulin scared her, she could not understand why this was happening. However, the nurses did help counsel her with coping mechanisms and thereafter during the rest of the interview she indicated that communication had been clear during further sessions. However, the issue of the doctor's availability to serve her had concerned her, as explained below.

Ria: The nurses communicate effectively to me because I see the doctor only once in three months' time [patient is not confident, sad look]. They tell me everything about my diabetes.

Ria felt that the medical doctor was superior in her health-care relationship and was therefore sad when she indicated that she only saw him once in three months. The researcher gathered this when Ria mentioned the following: "as a doctor you must tell me what to do, you must solve my problems. I mustn't come first, second time to solve problems. But communication is clear." She believed that the doctor is the most knowledgeable member of the treatment team (as per the biomedical approach, superiority of role relationship) and he needed to help her. She wanted to consult more with the doctor. However, given the clinical situation she was well aware that, "the doctor doesn't have time here only the nurses have time, the nurses alright." Even though she agreed that communication was clear, she wished it could come from the medical doctor as opposed to the nurses.

7.13 LIFESTYLE CHANGES: DIET AND EXERCISE

According to the theoretical framework of the TTM and the PAMP, the *action* and *maintenance stage* are in line with the data below. These stages suggest that patients are well aware of their health condition and choose to act and manage their diabetes by altering their lifestyle with appropriate diet and exercise changes. The research participants indicated what they needed to avoid eating, in order to live a healthy life. They also indicated that they had to exercise in order to control their diabetes. The *action stage* states that patients feel that they have sufficient knowledge of their illness and thus feel confident that the action of change can occur. According to the theory, this might not always be true. However, the patient assumes this as the truth. With constant motivation and persuasion from the HCP, patients can keep up their action and change their lifestyles.

All the research participants indicated how they had wanted to change their lifestyles and avoid a *relapse*. Even Frans, Isaac, Kevin, Ruby, Priya, Vivian, Harry and Howard, who were non-adherent wanted to contemplate their health and work towards action and management of their diabetes. Even though these eight patients

had defaulted in their treatment (at some stage) they indicated in their verbatim quotations below that they had clearly understood the necessary lifestyle changes which include diet and exercise which they needed to adhere to.

For many of the patients, altering their lifestyle was the toughest part of learning to live with diabetes. Adapting a change diet was hard for some patients since they had to give up their favourite foods and adapt to eating healthily. Many patients had to learn to exercise and this too was difficult for them to accomplish.

The following multiple dimensions with regard to diet and exercise emerged from the data:

- Following the doctor's instructions with regard to eating healthy and exercising was important.
- The need to avoid junk food and remove starchy and oily take-away foods such as Kentucky Fried Chicken from one's diet was necessary.
- The notion of walking as exercise was mentioned by Howard, Ria, Betty, Frans, Isaac, Moses and Ruby in the data below.
- The notion of food as a temptation leading to disastrous health consequences was emphasised by the research participants since having to forego certain foodstuffs affected their lifestyle. Missing out on their favourite foods made them feel excluded from normal society.

Howard: Yes, well, I follow the doctor's instructions, how you must eat, how you must exercise, and the food I changed. Always I take, this morning I took my insulin. I take a lot of tablets, I am used to it. They helped me with medication, the doctor changed it. Build of confidence because of the health-care professionals. With the food aspect, the health-care professionals gave me a diet plan. I exercise now, with more walking I got cardiovascular diseases too, there is pain in my leg, my blood must circulate. At my age, what exercise can I do now? [Patient smiles with the rhetorical question asked to the researcher]. My health is important to me, I stop at the beach and walk. I suppose because I have a heart problem I can't do any other exercise. No, [patient shakes his head] I must follow

them, they are trying to save my life, can't go against them. Well, exercise and eating habit is an important thing.

MJ: Yes I changed my behaviour; absolutely changed my eating behaviour and general behaviour, and the health-care professionals helped me do this. I exercise more, my eating habits have changed. I take my medication on time –morning and evening. I must have no temptation or I will be heading for disaster. The health-care professional spoke to me, this is the way of life, I have diabetes and I have to change. They educated me on the products– what to eat, how to exercise.

Stefan: Yeah, I changed my eating, everything, I exercise every day, I am still continuing with my exercise. They [the patient is referring to the health-care professionals] encourage you, they tell you watch how you eat. I take care of myself, I watch what I eat and I do my exercise daily.

Fear of implementing lifestyle changes was evident in Frans's illness narrative. He was in denial about his diabetes and chose to live a normal lifestyle in order to avoid his diabetes. Dietary changes being the biggest challenge were mentioned by Ria, Betty, Isaac, Moses, Sarah and Harry as indicated below.

Frans: When you are diabetic, they told me how one is required to eat, in the morning don't eat too much, take medication, jump around, walk,– do physical training and take care of small scratches or big sores. I must stick to my diet, be cautious about cleanliness, watch out for any bruises that might occur on my body, exercise, yes. I didn't change my lifestyle because I was scared, because of my mother maybe I will go the same way. Biggest mistake not to adhere.

Ria: I must change the way I eat, not eat junk food, pies, coke, drink, cakes. Exercise is very important to me – I must walk and do exercise. It is my life, I must not miss it, the nurse and doctor help me. I am normal, same like other people. For food I don't eat too much oil anymore. I exercise now, I never used to before. Sometimes I feel like I must eat Kentucky, maybe just one piece [patient laughs], I know I can't eat it.

Betty: Yes [confident smile], the health-care professionals told me I need to drop my sugar level, don't eat sweet stuff. I walk 1.5 km in the afternoons now.

For my diet I cut down fat, starch, I can eat sweet stuff but I must not overdo it. I also didn't walk before, now I do.

Isaac: I need to change my diet and eat the correct foods. This is difficult for me. I must also exercise. I walk every morning for half an hour. Especially the diet change was my biggest challenge; basically everything I used to eat I can't eat anymore. I love my Indian curries and I can't eat them anymore. With the food issue, I love my food but I am trying– I don't look forward to meals anymore.

Moses: Yeah, I must eat correct foods and exercise. I must not eat the food with too much oil or meat that has skin on. If I am eating I must eat brown bread, boiling food. When I am going to work I jump off from the train and take a 2-km walk to work. When I am at home I walk 4km and I have a bike at home.

Sarah: My diet and eating habits I altered, walking in today's time is dangerous, so I do breathing exercises, I listen to them [patient is referring to the health-care professional] for my own good, they are delivering knowledge to us to our own advantage.

Harry: Yes, I definitely did alter my lifestyle. Especially my eating habits. I also do a lot of exercise, I know how I feel if I don't take my insulin.

These research participants communicated commonalities with regard to the diet challenge. Isaac stopped looking forward to meals because he had to cut down on Indian curries and oil. Ria missed her take-out oily foods such as Kentucky and junk foods such as pies, coke and cake, while Betty had to cut down on sugar, starchy and fatty foods. Moses had to avoid food with too much oil and meat with skin. These patients chose to mention what they could no longer eat and thus indicated to the researcher what they really missed out on eating because of their diabetes health condition.

In comparison to these patients, Kevin, Ruby, Mo, Priya and Vivian all indicated what they needed to eat now in order to maintain a healthy diet. Foods they mentioned included brown bread, salad, fruit, vegetables and plenty of water. These patients indicated how they had altered their diets according to the advice of the HCP at the clinic.

- Kevin: Initially, I did not make any lifestyle changes, now yeah, I realised it's my body and I need to take care of myself. I do a lot of exercises and eat a lot of salad and two slices of brown bread, I now eat healthy.
- Ruby: Yes, I walk in the mornings and the afternoon. Eat a fruit– I eat according to the diet I have to follow, I also walk at set times. The health communication at the clinic helps.
- Mo: I eat like healthy food, before I ate anything, now I eat brown bread and healthy food, little sugar and salt.
- Priya: Yes, I drink a lot of water after eating, I exercise, one fruit a day. I used to have tea in the mornings, now I have water instead. I eat mild food, exercise and drink water.
- Vivian: I cut back on drinking minerals, my diet I cut down on bread, I now have two slices instead of three. Rice I also cut down, I eat more vegetables.

7.14 RECOMMENDATIONS REGARDING THE DIABETES CLINIC

Theoretically, the South African public health-care system had to be restructured owing to past inequalities that had existed in the illegitimate apartheid system. Hence public health-care has not yet reached its ideal in this country (Coovadia, Jewkes, Barron, Sanders & McIntyre 2009:817; Burger, Bredenkamp, Grobler & Van de Berg 2012:681). Medication for diabetes was readily available at the diabetes clinic, but basic needs such as a toilet, more space for the clinic and appropriate shelter for the waiting area facility were lacking. A toilet near or inside the clinic was absent. Basic resources such as those mentioned above were lacking in the medical system, as seen in the discussion below. Management were aware of these problems but indicated that they could do nothing about them, since powerful mediators did not allow such facilities to be built. In the South African medical system, the political and economic institutions are systems that dominate society since they are governed by rules and resources that are transformed into power. A detailed theoretical explanation on the history of the South African medical system was given in chapter 2.

These multiple dimensions included the following:

- A toilet was required at the clinic.
- The waiting area required more chairs and the courtyard required shelter from harsh weather conditions.
- Time was required in the medical doctor-patient relationship.
- Space at the clinic was limited and more space was required to ensure that it functioned better.
- More cubicles would ensure greater privacy at the clinic.

A toilet was required at the clinic (for staff and patient use) and the outside waiting area needed to be sheltered to ensure patient comfort from the cold or heat. The issue of time also emerged: more medical doctors needed to be hired to ensure that doctor-patient communication was not so limited, with only one medical doctor who consulted once a week. Some of the patients also indicated that these issues needed to be improved on to ensure better HCP-patient interaction for diabetes treatment. Verbatim quotations of the patients are provided below.

Howard, Frans and Harry recommended the following:

Howard: More time is required; with more time there will be more communication.

Frans: More medical doctors because you get the doctor once a week.

According to Harry: "Well, I hope they get a bigger place, and more than one doctor on site." MJ, Ruby, Priya, Vivian and Kevin recommended that more space be allocated to the clinic to ensure that privacy is maintained, that a toilet should be located nearby and that the outside area should be sheltered to improve patients' experiences during cold and hot weather.

MJ: The environment needs to be better, the aspect of space. There are no separate rooms at the clinic, the doctor has no separate room. The doctor, nurses all sit together; there is no privacy at all. The clinic needs more space. Everybody listens to your conversation at the clinic, with the nurses and doctor. There is no privacy, everybody is standing there, and others listen.

Ruby pointed out that “the toilet is too far away for us to walk; we need a toilet in the clinic.”

Priya recommended the following: “We need lobbies near here and also a larger space is needed here.”

Vivian elaborated her recommendations in a similar manner:

Vivian: The space is too small here, we need a bigger space, the shelter also ... it is too cold outside. The toilets are way inside the hospital, we have to walk and go there.

Kevin Have a number system, but be ordered at a seating area.

From the observations it was also noted on many occasions that the staff nurse dwelt on the topic that a toilet was necessary at the clinic. She even mentioned how sorry she felt for patients since they had to walk so far to use a toilet [Research journal entry].

Betty, Stefan, Moses, Mo and Sarah were happy with the clinic as is and made no recommendations for improvement.

The researcher agrees with these recommendations since she conducted her research in the winter season, and the waiting area was a problem as it had no shelter to protect the patients from the cold. She observed how patients needed to walk far to use the toilets at other parts of the hospital to collect urine samples for the clinic. Aged patients had to walk far. A toilet is a must for any diabetes clinic, since HCPs require urine samples from diabetic patients. Privacy was not prioritised in the research setting. From a social perspective, patients need privacy to come to terms with their own health concerns and don't want to be exposed to a small room filled with other patients (which was the situation on a busy day at the clinic). Patients have a right to privacy even in the public health-care system and this right should become a reality at this clinic. This discussion ties in with public health-care policy that patient-centred care as well as health-care needs are a basic right of individuals (as discussed in chapter 2). However, it is a sad reality that basic facilities are not available at this clinic. It is evident that public health-care still has a long way to go before efficient services can be provided in this country.

7.15 CONCLUSION

This chapter provided an explanation of the patient data collected from the field in relation to HCP-patient relationships for diabetes management as practised at the clinic. Interactive health communication encompasses communication exchange occurring in the HCP and patient relationship which aims at catering for patient-centred care since the individual is catered for. This is in opposition to the biomedical health-care system where information transfer occurs from the HCP to the patient.

The literature acknowledges that patient-centred care is a key aspect in diabetes management, but, as discussed in chapter 3, not all health communication models directly include the patient's perspective in health-care management. Instead, the patient's cognitive mind-set is emphasised in these models. It should be noted that through counselling (which occurs at this clinic) information exchange occurs in the nurse-patient relationship. The nurse asks patients for information about their experiences of the illness, management methods, adherence issues and basic information about their medical condition, which is the practice of interactive or two-way flow of communication that promotes patient-centred care.

In this regard, the social context that is emphasised in the literature in relation to diabetes care can feature in each patient's case in order for him or her to work towards treatment adherence. The question of family and culture in relation to the patient's social context of consultation needs to feature in the treatment plan from the initial stages of the patient's health-care for diabetes management. HCPs need to persuade patients to maintain treatment with interactive health communication.

In the next chapter HCP data is analysed, interpreted and triangulated with the patient data, documented records and observational data collected from the diabetes clinic.

CHAPTER 8

FINDINGS AND ANALYSIS PART 2: HCP DATA

8.1 INTRODUCTION

This chapter discusses the findings and analyses the HCP data that was collected from the fieldwork process for this study. As indicated in chapter 6, different themes (major topics) or sub-themes (unique topics) emerged from the data and were categorised according to patient and HCP data.

This chapter aims to answer research questions 3 and 4, namely:

- Does communication either converge or diverge between HCPs and patients in terms of effective understanding of diabetes health-care and treatment adherence?
- What are the possible barriers that may hinder effective communication in HCP-HCP teamwork?

A core focus of the study was to analyse how communication in the HCP-patient relationship either facilitated or hindered effective communication for diabetes health-care and treatment adherence. Triangulation occurred in different ways, namely patient data, HCP data, documentation data and theoretical triangulation. In the sections below it is also be indicated how communication in the HCP-patient relationship was facilitated (converged) or hindered (diverged) for diabetes health-care.

As the chapter proceeds, different themes and sub-themes are discussed in relation to the data analysed for HCPs. The chapter then concludes with a summary of communication convergence and divergence as triangulated from the three different data collection methods used.

8.2.1 Biographical details: HCPs

At the time the fieldwork was conducted, six medical professionals were employed at the diabetes clinic. Their biographical details are provided below. Even though the study adhered to a qualitative approach, the researcher adhered to the ethical policies of the Department of Health (DoH) and Unisa's ethics policy and therefore had to maintain respect with regard to the data collected. The researcher was unable to obtain personal data from the HCPs with regard to their cultural and family beliefs in relation to diabetes. The study was aimed at examining HCP-patient relations for diabetes care management and the researcher adhered strictly to the aims of the study.

8.2.2 The medical doctor

The medical doctor was a 47-year-old European white male (Christian), who had been employed at the hospital for eight years. He had qualified as a general practitioner and had a keen interest in diabetes treatment. He had a private surgery in Ballito (an urban area located on the North coast of Stanger). The medical doctor did not reveal any information about his past career in medicine.

8.2.2 Student nurses: 1 and 2

Student nurse 1 was a 28-year-old black (Christian) female who had been employed at the diabetes clinic for only one month at the time of the study. She was receiving diabetes training at the clinic at the time of the research. She and student nurse 2 were students focusing on general nursing as a career. Student nurse 2 was a 26-year-old Indian (Hindu) female who, like the student nurse 1, had received training at the clinic for only one month. The student nurses were learning about diabetes and were clearly less experienced compared to the other nurses employed at the clinic. Student nurses 1 and 2 indicated that they were still learning about diabetes as an illness and since they were still students, they needed to obtain more hands-on practical experience as opposed to the theory they had already studied. Student nurse 2 indicated that she still needed to learn much more about diabetes and she

displayed an interest in treating diabetes that might motivate her to become a specialist diabetes nurse (as discussed in the data below). When questioned about how long they worked with diabetic patients and their experience in the field they commented as follows:

Student Nurse 1: One month only ... yes, and no at the same time – because it is still a short time I am here at the clinic, I still need to learn more about diabetes.

Student Nurse 2: One month in the wards I worked with diabetic patients only. No, the time is too little, what we learnt so far is too little.

8.2.3 Enrolled nursing assistant (ENA)

The enrolled nursing assistant was a 40-year-old black (Christian) nurse who had been employed at the clinic for five months at the time of the research.

8.2.4 Staff nurse

The staff nurse was a 55-year-old Indian (Hindu) female who had been employed at the clinic since 2004 and had specialised in diabetes health-care and treatment.

8.2.5 Professional nurse

The professional nurse was a 32-year-old black (Christian) male who had been employed at the clinic for only two weeks at the time of the research. He had qualified as a professional nurse in 2007, in the field of general nursing.

8.2.6 Chief professional nurse

The chief professional nurse was a 50-year-old black female who had been a diabetes specialist since 2004. She was originally from Swaziland. As she said, “I am Swazi, I speak Zulu because I am with the Zulus now.”

The themes that follow are placed in this particular sequence for the purposes of examining HCP data.

8.3 POSSIBLE BARRIERS TO EFFECTIVE COMMUNICATION IN HCP-HCP TEAMWORK

One of the objectives of the study was to analyse the possible communication breakdowns experienced by HCPs, which could hinder effective teamwork in the HCP-HCP relationship for providing effective diabetic health-care to patients. This research question worked in direct relation to the theoretical model, concerning possible barriers to effective communication in HCP-HCP relationships. The sequence of the sub-themes explained below follows the order of this model, as explained in chapter 4. The theoretical framework of the HCP-HCP model that illustrates potential barriers to teamwork relationships includes the following: *role stress*, *insufficient interdisciplinary knowledge* and *autonomy struggles*. Communication breakdown is also a contributing factor towards ineffective teamwork and will also be discussed as a separate subtheme below since it fits into this overall theme or major topic. In the health-care system, HCPs need to work together to maintain patient health-care. If communication breakdowns occur between HCPs and patients, treatment and maintenance of the illness can be compromised. Collaborative teamwork is required when treating diabetic patients, as discussed in chapter 4.

In the discussion below, the different sub-themes that emerged in relation to aspects of HCP-HCP teamwork are examined.

8.3.1 HCPs' role in the team

Theoretically, individual HCP's roles need to be differentiated in the treatment team. For example, medical doctors fulfil separate roles in the medical system, compared to administrators, nurses or dieticians (Northouse & Northouse 1985:96–97; Northouse & Northouse 1998:79). If role differentiation is clearly defined, effective teamwork can occur, since miscommunication is avoided when providing health-care to patients. At the diabetes clinic there were clear roles that HCPs needed to follow –

for example, the chief professional nurse was the leader of the diabetes clinic during the doctor's absence. She was the head of the clinic and thus had the responsibility to ensure that the clinic ran smoothly at all times. However, when the doctor was there, he was the superior treatment team member and she needed to consult with him as well. All the other nurses had to consult with the chief professional nurse when they required assistance. The chief professional nurse consulted with the doctor when she needed when he was at the clinic.

The researcher observed how treatment team members worked together to provide diabetes care to patients. The chief professional nurse was extremely approachable and assisted the other nurses where necessary. The nurses all communicated with one another. The staff nurse and the chief professional nurse provided training to the two student nurses. The enrolled nursing assistant openly communicated with the staff nurse about different patient cases, and sought help from the staff or chief professional nurse when she needed clarity on a particular patient's case. The researcher observed how each nurse chatted to the others about patients. The nurses respected one another and also respected the knowledge and level of experience the older nurses had with regard to treating diabetes as an illness. [Research journal entry]

The following dimensions of "role in the team" emerged from the data which included the following:

- effective differentiation of the role and responsibility of HCPs at the clinic;
- the strength of the team in solving patient problems;
- freedom to learn;
- teamwork, which is a vital aspect of patient care;
- the team going the extra mile to help patients;
- the stages of teamwork; and
- a leader of the team.

Medical Doctor: Define team ... well, we all have our roles, the nurse's role is to educate, organising the files, counselling the patients, control

and attend to patient side-effects, and what action to take per patient. I do the blood pressure (BP), cholesterol, weights, sugar test, and change medication. I tell the patients how they are doing. The groundwork is done by the diabetic nurse educators.

Student Nurse 1: Yes, the team is so strong because they can solve each patient's problem. Nurses check blood/sugar levels, they teach health education and diet plans, how to use insulin, BP, dip stick etc.

Student Nurse 2: Yes, team – we are free to learn, ask questions. We check BP, do health education about diabetes; we are all around with our work.

Enrolled Nursing Assistant: Yes, teamwork is vital; we must check if patient is comfortable, check what they need. I also interpret for the patient to the doctor from Zulu to English.

Staff Nurse: Well we all do the same things here: vital aspects such as BP, glucose monitoring (GM), weights, taking bloods ... not in our job description, but we're good at it, we teach health education – it's all part of it.

Theoretically this nurse discussed the idea of role conflict where nurses are performing duties that are out of their job descriptions. She indicated that they are good at their job and thus do these other duties in order to help patients improve.

Professional Nurse: There are usually stages in a team but here we work as a team, every patient that comes we treat the same.

Chief Professional nurse: I am the leader in this team but we are all health educators. I am the leader – I do the planning of everything, for example equipment for the department. I am in charge of the department. I teach the student nurses what diabetes is, I go out to the local clinics in-service to staff, educating them on what diabetes is.

The findings are linked to the literature reviewed in chapter 4, which indicated that teamwork is an important aspect of health-care communication for diabetes care.

8.3.2 HCPs' experience of *role stress*

Theoretically HCPs can experience stress because they attend to sick patients on a daily basis. *Role overload* contributes to the stressful conditions under which HCPs work. HCPs can experience burn-out because of the constant medical challenges they have to deal with on a daily basis (Kelloway & Barling 1991:294). The HCPs indicated that they experienced tiredness because they were challenged by patient numbers on a daily basis and were overworked on a Tuesday, since this was the busiest day of the week at the clinic. As mentioned previously, there was only one medical doctor at the clinic, who was overburdened with the concern of all the diabetic patients receiving medical care at the clinic. The nurses tried their best to assist the doctor where they could. Nurses are often over-burdened in the medical system because they perform medical duties that are out of their job description, as discussed above (Northouse & Northouse, 1985:96–97). The aspect of nurse-patient interaction was expanded on in the literature reviewed in chapter 4. The verbatim quotations are discussed below.

All of the HCPs indicated that they experienced *role stress* in the form of *role overload*. The HCPs displayed a passion for their jobs (as expanded on in the theme HCP-patient care: HCPs interest discussed in section 8.4 below) and attributed their fatigue to the fact that they were serving their community and were happy to make a difference by helping patients get better.

The following dimensions of role overload emerged:

- exhaustion due to being overworked;
- lack of medical doctor's availability, which meant Tuesdays were the busiest day at the clinic;
- comparison between the ward and the clinic; teamwork at the clinic unlike the ward, therefore less fatigue;
- staff shortages – hence fatigue; and

- high numbers of patients – hence fatigue.

Medical Doctor: Yes, I am tired at the end of the clinic day, my mind's like jelly when you finish. I cram 30/40 patients in 4 hours.

Student Nurse 2: Sometimes, not all the time. On Tuesday it's a busy day– the clinic day.

Enrolled Nursing Assistant: No, it's nice – we are teamwork [the nurse is emphasising the fact that their team at the clinic displays teamwork; they encompass the notion of teamwork effectively]. You can't feel tired in the clinic, unlike the ward. [Nurse uses hand actions with speaking and laughs] Student nurse 1, like the ENA nurse, also indicated that she experienced no role stress at the clinic.

Staff Nurse: Yes, I should [nurse shakes her head], sometimes it's just the enrolled nursing assistant and myself here and patients knock on the door when there is no place outside and the clinic is full, I do get tired.

Professional Nurse: It's okay, a lot of patients that I see, so can't complain, a man has to work, but we do see a lot of patients.

Chief Professional Nurse: Hmm, I do in this clinic, every day I am telling you!

A common problem, as discussed in detail in chapter 2, was the current structure of the South African public health-care system, which included staff shortages, lack of proper treatment facilities and incorrect management of resources, among other barriers. These issues were witnessed at this clinic, where staff members are tired because of staff shortages, nurses were overburdened with other role responsibilities that were not in their job descriptions, as discussed in section 8.3.1 above. The doctor clearly indicated what his job description included (BP, cholesterol, weight, sugar tests, changing medication and informing the patients about their health in general), while the nurses indicated that their job descriptions did not include what he does, but they performed these tasks anyway. These findings are in line with the findings reported in the literature.

8.3.3 HCPs' experience of *insufficient interdisciplinary understanding*

Theoretically, the notion of *insufficient interdisciplinary understanding* was presented as a possible barrier to effective HCP-HCP relationships in the team, since HCPs may be unsure about the job description of their colleagues (Northouse & Northouse, 1985:100-101). HCPs need to educate themselves on the core duties that each HCP performs in order to avoid misunderstandings in teamwork. The different roles of the HCPs need to be acknowledged in order for conflict to be avoided in teamwork.

All of the staff members clearly indicated that they did not have problems with *insufficient interdisciplinary understanding*, and they answered with a confident "no". Instead, they all operated as a team and gladly assisted each other where the need arose. They were able to work collaboratively as a team as indicated in the data below. This data is linked to the data in section 8.3.2 above.

Medical Doctor: With regard to the diet it should be part of the team to see patients, even physiotherapy and the eye clinic who check the patients' eyes. We have a good relationship with them all; they are based at the hospital, not in our clinic specifically.

(The researcher did not follow up with HCPs who were based outside the clinic as permission had specifically been granted to use the diabetes clinic only. Also, the scope of the study included HCPs based at the clinic only. The researcher was unable to confirm who the team was made up of until she was granted permission to actually enter the field. Hence the data is limited to the scope of the study, namely all the HCPs based at the diabetes clinic only (see chapter 6, section 6.5.2.)

Student Nurse 1: No, we have no misunderstandings at the clinic with staff.

Student Nurse 2: Not in this ward, here we have an opportunity to learn.

Enrolled Nursing Assistant: No, we work as a team.

Staff Nurse: No.

Professional Nurse: Not a problem, we're all a team, we share duties.

Chief Professional Nurse: No, no [confidently spoken].

The question of teamwork re-emerged in this subtheme of the HCPs' experience of insufficient interdisciplinary (this refers to the nurses and the medical doctor, the sample recruited at the clinic) understanding as well where the HCPs indicated that as a team they share duties and thus have the opportunity to learn from each other at this clinic. The aspect of teamwork relations, team spirit, and relationship building includes core factors such as motivation, trust and care.

8.3.4 HCPs' experience of *autonomy struggles*

The tenet, *autonomy struggles*, explains that the medical doctor is held in a superior position in comparison to all the other HCPs, and he or she thus has the most rights over patients. The medical doctor alone has the right to self-govern patients, unlike the other treatment team members. This type of authority gives rise to teamwork problems, since teams need to work collaboratively in order to assess individual patients according to the illness at hand (Northouse & Northouse 1985:103). The literature states that team attributes such as caring, trust, support and meaningful communication are all positive contributors to effective teamwork, which impact positively on patient care (Ghaye 2005:191).

The data showed that *autonomy struggles* were not an issue at this clinic. All the nurses agreed that there were medical doctors available to help guide them at the hospital if the need arose. However, the chief professional nurse was in a position to make decisions for patients if the doctor was not available (as indicated in section 8.3.1 above). The researcher observed how many of the nurses consulted with the chief professional nurse for clarity.

The following dimensions emerged from the data:

- the responsibility of the nurses with guidance from the doctor;
- the availability of other doctors who were based at the hospital but were responsible for other aspects of treatment;
- teamwork – hence the need to consult with other nurses;
- telephonic availability of the clinic medical doctor; and
- the chief-nurse having the authority to make decisions when the clinic doctor was unavailable.

Medical Doctor: Doctors are usually reluctant to start patients on insulin, but here the nurses help patients adjust with the doctor's guidance. There is keen interest of the patient at the clinic, a responsible job is carried out by the nurses and the patients are encouraged to do the same by the doctor.

Student Nurse1: If there is a need there are doctors at the male outpatient department (MOPD), so they can help.

Student Nurse 2: There are other doctors to assist for crises or we can contact the clinic doctor.

Enrolled Nursing Assistant: No, we work as a team.

Staff Nurse: If I have a problem, the male out-patients department (MODP) doctors are there to ask for help.

Professional Nurse: No, I never experienced that, but according to nurse ethics we are the advocates. Also, the doctor has a number we can phone for the sake of the patients; for the sake of the patients we are allowed to call him.

Chief Professional Nurse: Most of the time I can decide, he is only here once a week so I can guide patients.

Other doctors, for example, the male out-patients department doctors or the surgical out-patients department doctors were available if the need arose. Initially a separate diabetic clinic did not exist at the hospital and diabetic patients were treated in these sections by medical doctors based in these wards. However, great confusion existed since patient files (documented records) were misplaced because of the lack of ordered systems in these wards since on account of the fact that patients with different health-care problems were all treated together. Once the space became available, the clinic emerged separately and better order was maintained because the clinic was exclusively for diabetic patients. The clinic doctor also took calls if there were emergencies to assist patients. The chief professional nurse was the most senior nurse at the clinic in relation to role responsibility, compared to the other nurses, and she thus had the authority to assist patients in the doctor's absence. The doctor also noted that he supported the nurses' decisions (due to his lack of availability) and was there to guide them.

8.3.5 HCPs' experience of communication breakdowns

Theoretically, communication breakdowns between HCP and HCP occur for many reasons, as discussed above. Teamwork needed to be maintained in order for effective patient treatment to occur. Roles in the medical system needed to be differentiated effectively in order for individual responsibilities to be carried out. The medical doctor needed to consult with his team before finalising treatment decisions in order to avoid *autonomy struggles*, as indicated above. HCPs are required to educate themselves on the tasks that each HCP performs in order to avoid requesting other HCPs to perform jobs that they are not responsible for.

All of the nurses indicated that they had experienced no communication breakdowns at the diabetes clinic. Their teamwork spirit ensured that they overcame such challenges. The medical doctor pointed out that “issues” are normal, but they were in a seemingly better position at this clinic in comparison with other clinics at the hospital. The doctor was referring to the fact that communication breakdowns are normal in workplace situations. The researcher noted a communication breakdown with regard to the HCP-patient relationships that had occurred with Ria and Howard, as discussed in chapter 7. Howard had experienced miscommunication and confused his treatment dosages, while Ria had felt that she had not been catered for appropriately when she had suffered an ear infection. HCPs need to learn from such cases by making efforts that ensure patients fully understand what is communicated to them, be it an alteration to a treatment dosage, which had transpired in the case of Howard, or a side-effect to medication, as experienced by Ria regarding her ear infection. The medical doctor was perhaps referring to such cases where communication breakdowns do occur because of the vast number of patients they treat in such short spaces of time. The communication dynamics between staff members is discussed below.

Medical doctor: Issues are normal, now and then but we do pretty well here. We all have enough of work and our roles are identified. We all know what we're supposed to do, so there is no problem.

Student Nurse 1: Here they are all united, I can see communication breakdowns do occur elsewhere; not here.

Student Nurse 2: No, we work well.

Enrolled Nursing Assistant: No [confidently], if I am alone I man the clinic till the staff nurse comes; we take turns in our team.

Staff Nurse: No.

Professional Nurse: Never experienced it.

Chief Professional Nurse: This team, no, we are a good team here; no stress [nurse smiles]. The clinic runs smoothly in my absence also.

The issue of communication break-downs is commonly discussed in the literature (see chapter 4). However, the staff at this clinic indicated that if it did happen it was sorted out quickly. However, the majority of the nurses indicated that they worked as a team and shared responsibilities and therefore avoided communication breakdowns. The researcher also observed how the nurses communicated with each other on a daily basis and they assisted each other whole-heartedly.

8.4 HCP-PATIENT CARE: HCPs' INTEREST

From the data collected, the theme or major topic of HCPs' interest emerged with different unique topic/sub-themes such as a keen interest in treating diabetic patients and an interest in taking the individual patient into account that is patient-centred care from the HCP's perspective is discussed below.

8.4.1 HCPs: a keen interest in treating diabetic patients

All the HCPs indicated that they had a keen interest in the field of diabetes and a passion for treating diabetic patients. The following dimensions of keen interest emerged from the data:

- fondness for treating diabetes;
- interesting experiences and exposure;
- interest in specialisation for diabetes treatment;
- reality of patient negligence; and

- extreme fondness and love for treating diabetic patients.

Medical Doctor: I am a GP for 15 years now and of the 15 years I am treating diabetic patients for eight years now. Previously I worked overseas in Canada and the UK. Yes, I do like attending to DM patients.

Student Nurse 1: Yes, I do like treating diabetic patients, it's quite interesting because every day you get to see a new problem and learn to sort the problem, it's a new exposure every day.

Student Nurse 2: Yes, I never understand diabetes as an illness until I arrived at the clinic. The sister and the staff taught us a lot. I am a student nurse so I will not be working here for very long, because we move to different departments to learn how to treat all diseases. Maybe I might specialise in being a diabetic nurse one day. I have not made my mind up

Enrolled Nursing Assistant: Yes, it's nice [nurse laughs and goes on to speak about the patients to the researcher], I tell them things today; they forget, they say you didn't tell them. The young patients are also the same. Patients have to come with the machines so you can check the readings they did at home; they used to cheat, they are like that. The patients are only cheating themselves.

Staff Nurse: Hmm, yeah I love attending to and treating diabetic patients.

Professional Nurse: Yes, I do like attending to diabetic patients.

Chief Professional Nurse: 100%. I love attending to diabetic patients" [nurse smiles widely at the researcher.

The researcher noted how the specialist diabetic nurses used the word "love" to indicate how passionate they were about treating diabetic patients. The staff nurse and the chief professional nurse were the two main nurses in charge of the diabetes clinic (as discussed in chapter 7, section 7.12). Either one of them had to be present at the clinic always. These nurses provided training for the student nurses at the

clinic by educating them about diabetes. They supervised the clinic as well as the other staff members.

During the observations at the clinic, the researcher observed how patients requested the help of these two specific nurses at the clinic (as discussed in the patient data in chapter 7). The staff nurse and the chief professional nurse had built a bond with their patients and addressed many patients by name, thus indicating the closeness of the nurse-patient relationship at the clinic. The nurse-patient relationship was illustrated in the theoretical models discussed in chapter 4. The other staff members also indicated gladly that they enjoyed treating and attending to diabetic patients.

The Biopsychosocial Model and the Disease-Illness Model accounted for the patient's perspective in health-care decisions, but also excluded an explanation of positive contributors to effective HCP-patient relationships. The conceptual framework at a general level explained how HCPs could motivate behaviour change in individual patients by practising patient-centred care that occurs in the social context in relation to the individual patient's treatment adherence from the onset of treatment management and planning in the HCP-patient relationship.

8.4.2 HCPs: Interest in taking the individual patient into account, patient-centred care

The HCPs indicated convergent communication (thus indicating that triangulation of data from different sources occurred) with the patients in relation to catering for the individual patient. The data from the HCPs' perspective is discussed below, indicating how they tailor-made treatment plans to cater for the individual patient at the clinic. The medical doctor, student nurse 1, the staff nurse and the enrolled nursing assistant all provided examples of where they had tailor-made treatment plans to cater for individual cases.

Medical Doctor: We do tailor-make plans sometimes when patients have different regimes. Example, night duty, then we change it accordingly. Or if they're old and frail we provide a different regime; if they're old we provide poorer treatment [the medical doctor was referring to less

powerful medication], because they are old. Treatments are tailored to individuals, especially if they are on insulin.

Student Nurse 1: Yes, I do, for example, we had a patient that stayed alone and her daughter was married. Her sugar was always low because she forgets to eat after her medication, and when you are on insulin, if you don't eat your sugar levels drop. I gave her a solution to keep food next to her bed and a glass of water and a sweet to suck.

Staff Nurse: Maybe, but time is a problem, but the staff are okay here, if say a patient loses a family member and they don't come for medication, they have a repeat card because they skip one month, so I change the date for them to help them get their medication.

Enrolled Nursing Assistant: Even with emotions – they tell you they did not take medication because they had no food, so I refer them to the social worker then. Some patients don't have IDs, so no grant. Also some patients live alone and there is no one else to look after them, you organise – ask the doctor to write a letter to ask Home Affairs to have someone to help them.

(The social worker was not consulted since, as indicated above, permission was only granted to use the diabetes clinic, and as per the HCP recruitment criteria, only HCPs employed and based at the clinic were recruited for this study).

All the HCPs indicated that they worked towards catering for the individual patient, and this converged with the data of the patients as discussed in chapter 7 (section 7.10). However, as explained in chapter 7 (section 7.9) patient-centred care was only implemented after the patient had defaulted treatment. Thus the social context should be taken into account at the start of treatment in order to cater for the patient's context from the early stages with the practise of information exchange. The enrolled nursing assistant, the staff nurse and the professional nurse all indicated how they catered for the emotional aspects of individual patients and found solutions to help patients deal with different emotions they were experiencing. This underscores how the individual is catered for in diabetic treatment and care. The

medical doctor mentioned Kevin's personal problem of his night duty standing in the way of his treatment adherence, and indicated that his treatment programme had been changed according to his work plan. However, Kevin had defaulted and only communicated his shift duties to the HCP after defaulting treatment. The HCPs therefore need to be more accommodating by practising interactive communication (which encompasses information exchange as opposed to information transfer only) from the start of treatment in order to cater for the social dimensions of individual patients. Owing to time constraints, the public health-care system is not always favourable towards either the HCP or the patient. The large number of patients who need to be accommodated at these facilities permits catering for patient individuality. However, HCPs need to work towards this in order for patients to work towards managing their illness from the outset.

The enrolled nursing assistant narrated a story of how the staff nurse had gone the extra mile in catering for her individual patients.

Enrolled Nursing Assistant: The staff nurse used to visit patients, for example her neighbours or patients who come from the old-age home, just so she could monitor them, for example, there is an old patient the staff nurse visits to check up on, she is 80 years old.

Professional Nurse: No, treatment is the same but design differs. The thing that guides us is the thing like bloods. We do cater for the patient because with the assessment of understanding you look at – identify fears and educate accordingly.

Student Nurse 2: Hmm, patients are sent here for re-education from the dieticians, especially the black patients eat too much at one go, you need regular intervals to eat. There is too much of glucose in the blood if you eat too much at once.

Chief Professional Nurse: Yeah we have to; I do consider patients because the patient that understands better will talk to the other patient. Patients speak to each other – that helps. The nurses tell the patients to talk to each other.

The dimension of patient-centred care is lacking in the health communication models discussed in chapter 3, while the literature indicates that this is a vital factor that needs to be accommodated in diabetes health-care (as discussed in chapter 4). The HCPs acknowledged that individuals need to be catered for in treating diabetes, and thus try to cater for individuality when treating different patients, as indicated above. The question of tailor-made plans was also evident in the patient data in chapter 7 (section 7.10) where many patients were catered for on an individual basis, thus indicating triangulation from different sources of data.

The next theme discusses the barriers that hinder effective communication in diabetic patients from the HCPs' perspectives.

8.5 BARRIERS HINDERING EFFECTIVE COMMUNICATION: HCPs' PERSPECTIVE

In the section below under the main theme of barriers to effective communication from the HCPs' perspective, the subtheme, language and a lack of education, will be discussed below.

8.5.1 Language and a lack of education

The barriers contributing to lack of communication towards ensuring effective patient health-care and treatment adherence included language and a lack of education (in relation to the ability to read and write in a language) as the core dimensions that affected patients' understanding of treatment adherence. All the HCPs indicated that language and a lack of education were barriers to effective communication with patients. Patients who could only communicate (read, write and speak) in their mother tongue were unable to fully comprehend the languages spoken at the clinic since they were not educated (literate with the ability to write and read in the languages used at the clinic). This contributed negatively to interactive communication sessions between HCP and patients, since some HCPs could communicate only in English. Thus HCPs who were not fluent in the African languages used at the clinic required other staff members to assist with interpreting the communication. The clinic communicated with patients in both English and

isiZulu. The HCPs assisted each other to ensure that patients understood the communicated messages. The issue of teamwork emerged where HCPs worked collaboratively to try and assist patients with understanding their treatment options. Poverty emerged as a contributing factor to a lack of education (or vice versa), and a lack of education (literacy in relation to the language communicated at the clinic) led to miscommunication, as discussed by the medical doctor below. Some patients lose the point of communication when it is not communicated to them in their mother tongue (Gulati et al 2012:572; Brisset, Leanza & Laforest 2013:131).

The analysis of data obtained from the HCPs showed the following multiple dimensions:

- Miscommunication is the result of poverty and a lack of education. A misunderstanding of correct treatment dosages contributes to an imbalance of blood glucose levels in patients' blood results.
- Translation leads to further miscommunication. This emerged as a contributing factor to the language barrier, as explained by the enrolled nursing assistant below. She acted as the translator at the clinic and spoke from first-hand experience.
- Limitation of African languages used at the clinic was emphasised by the staff nurse, who indicated that some patients also preferred to communicate in isiXhosa. This was a problem since other nurses had to be sourced to help interpret the communication session. Language emerged as a major barrier that affected effective communication in diabetic patients. Language could be a major barrier to effective understanding of illness and treatment adherence in diabetic patients (Karliner et al 2004; Rockhill 1987).

Medical doctor: Language is a barrier, especially in the poorer patients' cases; this is the reality of what they experience in life. The question is what they want on a daily basis. Poverty is linked to a lack of education and this affects patients' understanding of diabetes health-care and treatment. The wealthy Indian patients demand time and want to get well. Older patients are usually left alone and no longer care about treatment adherence, because they have no help to cope with diabetes.

Student Nurse 1: Sometimes they misunderstand, for example how to hold insulin and how to mix it. Also when to take the insulin – patients must take insulin 30 minutes after they eat; patients mix the process up.

Student Nurse 2: Patients have educational problems, they don't understand the communication. Also negligence – because patients understand here and then default at home.

Enrolled Nursing Assistant: Language aspects, because I interpret from the patient to the doctor – from Zulu to English.

Staff Nurse: Well, uhm ... see, like if there is no Zulu and they speak Xhosa, I will look for other nurses to help me. But I don't let them go, I make sure they get help. So language, yeah, is a problem.

Professional Nurse: Sometimes they are uneducated and can't understand and this is a problem or sometimes they have a problem with their eyes, they can't see, therefore we involve family to help.

Chief Professional nurse: Language is a problem in such a way that everyone cannot understand; there is English and Zulu – the individual talks the way she talks.

8.6 HCPs' PERSPECTIVE: PATIENTS' UNDERSTANDING OF DIABETES AND TREATMENT OPTIONS

The data analysis revealed convergence in communication between the patients and HCPs as far as the patients' understanding of diabetes as an illness was concerned. Triangulating data from (1) the interviews with patients, (2) the interviews with the HCPs, (3) observational notes, and (4) patient files, enabled the researcher to verify this. The patient files, for example, confirmed that most patients were adherent (MJ, Stefan, Moses, Priya, Sarah and Mo), or those who had previously defaulted (Ruby, Betty, Vivian and Ria) were working towards managing their illness, while some patients (namely, Frans, Kevin, Harry, Isaac and Howard) were re-starting treatment. An outcome of triangulation indicated that all of the interviewees had a fair understanding of what diabetes as an illness entails. The verbatim data is presented below.

The medical doctor stated confidently that most patients were well aware of what diabetes was: “Generally yes, the vast majority are aware, most patients are on insulin and thus understand diabetes. However, with regard to eating conditions, there is a reasonable understanding in this regard.”

It is interesting to note how the medical practitioner rated the knowledge of diabetes that was (for the most part) under direct control of the HCPs (i.e. knowledge of insulin dosages and instructions on its use) as a better informed health-related action by the patients than actions that were under less direct surveillance, such as their own dietary and eating practices. In fact, all of the HCPs mentioned how diabetes should be understood in ways that concur with current biomedical explanations of the disease. This is in contrast to the interpretations of diabetes management, as expressed by the patients as idiosyncratic experiences. The fact that for many patients’ education about diabetes by HCPs did not result in immediate and permanent adoption of behaviour compliant with treatment options and prescriptions was problematised by HCPs.

In this regard, the staff nurse indicated that patients did understand diabetes, but that this understanding did not necessarily lead to behaviour change as many still neglected or defaulted on their treatment: “**Yeah, some of them do, most of them ... However, the long-term crisis they do not understand the damage.**” This HCP felt that the patients struggled to grasp the consequences of untreated diabetes. She attributed this negligence to denial and to some patients not being able to cope emotionally with a disease that would demand lifestyle changes.

This discourse about a perceived knowledge-behaviour gap was confirmed by the professional nurse. She commented as follows: “They do understand the problem with them; I do not understand ... They default. We explain, they do understand – we educate them, but they still default.” This HCP told the researcher that she often observed patients blaming themselves for becoming diabetic. Such patients, according to the chief professional nurse, expressed feelings of guilt over possible misdemeanours that had resulted in them developing a life-threatening illness like diabetes. “They don’t understand it initially as a disease – they feel they have done something wrong to have diabetes. Until you explain how it comes, they think you eat too much sugar. [The nurse was referring to diabetes patients whose condition is hereditary but have a misconception that they did something wrong and are

therefore ill.] So they feel guilty until you explain to them then they understand. At times if you tell them it's hereditary ... they will maybe hate [nurse dragged the word hate to show emphasis] the parent to say why she gave it or why he gave it to me. Until they understand it very well it's hereditary [the nurse was trying to explain that only when patients grasp the illness as being genetically inherited (and understand what this means) they cognitively shift towards accepting the illness and not blaming their parents].

In this instance, the HCP was trying to understand the psychology of the patients she treated at the clinic. As discussed in chapter 3, the cognitive mind-set of patients impacts greatly on their health behaviour patterns (this refers to their attitudes or beliefs in relation to their health condition). The chief professional nurse was trying to understand (as quoted verbatim above) why patients are not as receptive as she would like them to be during her health education sessions. Communication between the HCP and the patient in this case diverges at the initial stages of patient diagnosis since the patient does not properly understand diabetes as an illness. They are confused and emotionally affected and therefore blame their parents for their diagnosis. They also think that eating the wrong foods (such as too much sugar) causes diabetes. After the nurse counsels and persuasively communicates with these patients, only then do they learn to accept their illness, that is, when they are emotionally ready from a cognitive perspective. Different patients have different cognitive mind-sets which impact on their individual behavioural change levels. Here, persuasive communication can only be successful when patients are emotionally ready to accept their illness and work towards managing it. Thus, intrapersonal communication needs to occur in the patient's mind-set via interpersonal communication (HCP-patient) motivation and counselling before effective behaviour change can occur.

Beyond the patient's expression of feelings of "guilt" (as discussed by Vivian in chapter 7), the chief professional nurse and the student nurse 1 also recounted examples of patients who blamed their family members who were diabetic for their diagnosis. In a sense, displacing feelings of guilt from themselves to family members made it easier for some patients to cope with their diagnosis. Through the lens of the ELM model, it can be argued that some patients have a negative attitude towards diabetes because of pre-existing assumptions. Guilt and blame are reactions to such

assumptions (Heesacker & Shanbhag, 2002). To overcome this, the chief professional nurse said that she used persuasive communication (during the counselling sessions) to change negative attitudes into positive behaviour change and acceptance of diabetes.

In a related example, student nurse 1 suggested the following: “Yes they do understand, I think they do, because after you explain to them ...” This HCP therefore linked improved understanding by her patients with her education on the true (biomedical) causes of diabetes. This nurse went to great pains in her interview to explain how she had adopted a unique way of communicating knowledge about diabetes to individual patients in order to facilitate effective understanding in each patient. In explaining what made her communication unique, she told the researcher that it was important to her to adapt her message according to the patient’s age or level of understanding, that is, “to come down to the level of the patient.” The HCP attributed “level” to the patients understanding of the communicated word.

Another HCP thought that the use of motivation in the form of “reassurance” would lead to acceptance of the diagnosis and a shift to careful management of the condition. This interviewee, an enrolled nursing assistant, stated the following: “Yeah, they understand, because we used to explain, if you’re diabetic it’s not the end of the world; the nurses explain that everything will be okay. I even lie I am diabetic just to reassure the patient that it is ok”. She also mentioned that newly diagnosed patients are usually in denial about their diagnosis. Her way of overcoming any resistance was to suggest to such patients that she was diabetic (this is a lie), just to reassure patients that they could be well and live healthy lives. In the words of Prochaska and DiClemente (1984:43), it can thus be argued that this HCP used *dramatic relief* to establish common environmental situations in relation to diabetes to awaken patients to its reality. In addition, this HCP used a “show and tell” technique to demonstrate to her patients how altering behaviour positively contributes to maintaining their health status. In this HCP’s attempt to convey meaning relating to diabetes treatment, she had forged a false shared identity. However, she remained an outsider unable to completely negotiate symbolic boundaries that distinguish her as the knower of treatment from the patient as someone who must come to know.

With regard to patients' understanding of diabetic treatment options the medical doctor commented as follows:

Medical doctor: Yes, patients do understand treatment options available because the nurses are the educators at the clinic. It is the nurse's duty to explain and teach the patient about treatment options available to them. Each patient has a sheet in their folders called the "nurse educator's sheet" where each patient's treatment plan is recorded per consultation and altered accordingly.

From the interviews with the chief professional nurse, the professional nurse and the staff nurse, the researcher ascertained that a premium was placed on educating patients about the treatment options available to them. Also the documentation indicated (see appendix I – patient forms) that the nurses communicated the different treatment options available to the patient. They even demonstrated to the patients how to use insulin injections (as indicated in the diabetes educational material – appendix J) using diabetes information booklets.

In the observed interactions between these HCPs and their patients, the researcher noted that staff encouraged the patients to telephonically contact the clinic for additional support. The professional nurse reiterated this point, indicating that the nurses are telephonically available to assist or further clarify patients' questions about their treatment. The chief professional nurse and the staff nurse agreed that some confusion exists, but through education and the teaching and learning methods used at the clinic, patients tend to overcome the confusion and understand their treatment regimens well.

Chief Professional Nurse: Yeah, they do understand, but initially when they are put on insulin injections they are in denial; however, the more you explain to them the more they understand.

Staff nurse: Well, most of them do understand because they take their treatment, and when you question them they do understand. I agree patient confusion exists; however, the staff are here to help them. The call-in programme once a week and the daily register enable different staff members to store information [by the staff member that answers the call]. So we are helping them understand.

Professional nurse: Yeah, they do understand because, for example, they see the doctor, discuss treatment, plus we give them a chance to call us, so they can understand treatment well. We are here to help them.

8.7 HCPs' RECOMMENDATIONS FOR THE CLINIC

All the HCPs were employed by the state and were well aware of all the challenges public health-care faces in South Africa, as discussed in detail in chapter 2 and reiterated in chapter 7 (with the patients' findings). The HCPs were well aware of the clinic's situation and agreed with the patients about the urgent requirements of the clinic in order to provide basic care to patients. These findings were triangulated with patient data (in chapter 7) and the observation data recorded at the clinic.

The following dimensions emerged from the HCP data:

- space issues since the clinic was too small;
- the need for more medical doctors to consult at the clinic;
- the need for a toilet;
- the need for a sheltered area;
- the need for privacy; and
- the need for multi-media to educate patients on diabetes.

Student Nurse 2: Just the place is too small, but I will change nothing else. This clinic is great. We also need more charts on diabetes to ensure that we can have an "ask and learn method" here at the clinic. The space is really an issue, and also the doctor is only here once a week; that is hard. Maybe we need more doctors at the clinic. My suggestion, even if the doctor is here twice a week, it will be better.

Enrolled Nursing Assistant: This clinic is too small, and there is no toilet here also. When the doctor needs to check the urine they go to

the male out-patients department (MOPD); after you check the urine they must go all the way back there to drop it. The staff also, even us, we must go far to MOPD toilet.

Staff Nurse: Hmm, I can't think of anything ... a toilet is needed here in the clinic, the air cons are not functioning. It's a prefab building, it gets really hot in here in summer. I also wanted shelter for the patients outside because on rainy days it is hard for the patients. There is nothing – I am still waiting for the shelter outside. Old patients have to walk distances to the toilet. It is also better to have a bigger space with more cubicles so we can interview patients with no interruptions. Actually, before, the clinic was smaller.

Professional Nurse: Just the space is too small and there is no privacy for the patients. The waiting area also, it is an open space and is cold for the patients to wait in, with no shelter. I also think we need audio-visual education in the waiting area to improve communication.

Chief Professional Nurse: The space is too small to accommodate all the patients and the staff, even the equipment – we are so squashed in here. We need a health education room for patients to use to teach our patients, material such as TVs, videos to educate patients. Also there is no toilet for staff and patients here, we need one.

These basic necessities are urgently required by both staff and patients at the clinic. It should also be noted that the issues of privacy, toilet facilities or a fair amount of space should be a basic right of all citizens accessing public health-care. Policy documents indicate that patients should receive effective health-care services and the issue of a toilet or the need for privacy should be core in health-care facilities. As indicated, South African public health-care facilities still have a long way to go before such basic services can be provided.

In the discussion below the question of convergence versus divergence in relation to the collected data at the clinic will be outlined as a summary of the data collected for this study.

8.8 CONVERGENCE VERSUS DIVERGENCE: COMMUNICATION DYNAMICS AT STANGER HOSPITAL'S DIABETES CLINIC

A core focus of this study was to analyse interactive communication between HCPs and patients, with regard to communication either facilitating or hindering effective understanding of diabetes health-care and treatment options. This section will illustrate how communication either converged or diverged between HCPs and patients in diabetes health-care. Communication converged more than it diverged in the HCP-patient relationships, as indicated in the summary below.

On a general note, interactive communication facilitated effective understanding of diabetes in most of the patients' cases. Triangulation of the data also indicated that communication converged more than it diverged between HCPs and patients at the diabetes clinic. Observational notes indicated that HCPs at the clinic assisted patients to understand diabetes as an illness.

In the section below, triangulation is explained in relation to how data from two sources, that is, HCPs and patients, either converged or diverged. This is adhering to *triangulation of data* where data from the two perspectives above (data drawn from *different sources*) and from *different people* confirmed the findings below (Flick 2011:186).

At a general level, communication converged more than it diverged at the diabetes clinic. This emerged from the triangulation of the three data sources, namely the patient data (chapter 7), the HCP data (chapter 8) and the documentation records (see appendix I: patient forms; and appendix J: diabetes educational material). The table below provides a summary of triangulation of the data in relation to communication convergence and divergence.

Table 8.1: Summary of triangulation: communication convergence versus communication divergence

Summary: topics (themes and sub-themes)	Convergence (facilitated communication) versus divergence (hindered communication): HCP and patient perspectives and HCP-HCP perspectives
Patients' understanding of diabetes as an illness and diabetes treatment options	HCP-patient: convergent communication
Aspects of negligence and non-adherence	HCP-patient: convergent communication (exception of Frans, Isaac, Howard, Harry and Kevin who were fully non-adherent and had to re-start treatment).
Patient-centred care: taking the individual patient into account	HCP-patient: convergent communication (example, Howard, Frans, Kevin, Isaac and Priya)
Recommendations regarding the diabetes clinic	HCP-patient: convergent communication
Emotional reactions to diabetes diagnosis	HCP-patient: convergent communication (e.g. fear, death, blame, guilt, comparison to other harsh illnesses)
Barriers to effective communication (language and education)	HCP-HCP: convergent communication
HCP-patient relationship: feelings towards the HCP and communication effectiveness	Nurse-patient relationship effectiveness emerged from the patient data (convergent patient communication triangulated with documentation where the nurse is the diabetic communicator as displayed in the recorded forms). No role uncertainty with the HCPs (nurses)
Lifestyle challenges	HCP-patient convergent communication
Examples of communication breakdowns: HCP-patient	<ul style="list-style-type: none"> • Ria with the nurses, owing to her ear infection which appeared as a side-effect of treatment • Howard's lack of understanding of his treatment dosage change
HCP-HCP teamwork	Convergent communication in factors relating to teamwork facilitation at the clinic

On a whole, only Kevin, Howard, Harry, Isaac and Frans were completely non-adherent and had had to re-start the treatment process. The other participants, namely, Ruby, Betty, Vivian and Ria, had been working towards managing their diabetes after being negligent. MJ, Stefan, Moses, Priya, Sarah and Mo were outstanding treatment maintainers who were living healthy lives with diabetes. Thus

communication converged in relation to both the HCPs and patients indicating that patients did understand the communication they received from the clinic in relation to their illness.

The notion of the nurse-patient relationship was elaborated in the data collected since many of the patients viewed the nurses as effective communicators.

Patient-centred care with regard to tailor-making a treatment plan to cater for the individual patient was evident at this clinic, and this greatly assisted patients such as Kevin, Frans, Priya, Howard and Isaac. Thus, as reviewed in the literature (see chapter 4) and illustrated in the conceptual framework (chapter 5), patient-centred care must occur in relation to treating an illness such as diabetes. However, as explained in chapter 7, patient-centred care should be implemented at an individual level from the initial stages of treatment. If the social context of the individual patient is taken into account from the outset, patients can be catered for. As noted in the case of these five patients, their social dimensions had been taken into account only after treatment negligence had occurred. Basically, communication exchange needs to occur in the HCP-patient relationship in the form of interactive communication (communication exchange) in order for individual patients to be given suitable guidance by the HCP in relation to their personal context in managing the illness.

The psychological levels (which include, fear, anxiety, guilt and death resulting from the illness) of patients need to be taken into account at a cognitive intrapersonal level in order for patient behaviour change to occur. Patients need to be emotionally ready to accept their illness before they can adhere to medication. Hence patient-centred care needs to be explained in the patient's social context of health-care.

8.9 CONCLUSION

This chapter provided an in-depth analysis of the HCP data collected from the fieldwork process. Themes and sub-themes were discussed and analysed providing information on the different dimensions of data that emerged. On the whole, HCP teamwork did occur at the clinic in relation to HCP-HCP relationships. The medical doctor was only available at the clinic once a week and therefore data emerged in relation to the nurse as being the core communication facilitator at the clinic. There

was evidence of barriers to teamwork at the clinic, but the HCPs were overworked and fulfilled many different roles in providing patient care. This was because of shortages along with other public health-care challenges such as a lack of space and toilet facilities at the diabetes clinic, which are absolutely essential at any diabetes clinic. The HCPs acknowledged that even though the patients understood diabetes and the treatment options they still tended to default or neglect treatment. However, in this regard the cognitive psychological level of the patient needs to be taken into account in order to analyse the social context of the patient in relation to treatment default. The next chapter provides an overall conclusion the entire study.

CHAPTER 9

CONCLUSION

9.1 INTRODUCTION

This chapter concludes the study and attempts to answer the different research questions formulated in chapter 1. The research goal and overall research focus are addressed. The use of qualitative case study research approach involving one diabetes clinic and a small sample size in order to obtain in-depth data during the fieldwork process is justified. The focus of the study was not intended to generalise findings, but to obtain first-hand “lived” data from HCPs and patients at the case study research site. The theoretical location of the study in the field of sociology and health-care is explained in relation to the findings of the study. Thereafter a summary of the research questions and findings of the study is provided and each research question answered. The contribution of the study is discussed and recommendations made for possible future research, policy development and Stanger hospital’s diabetes clinic.

9.2 JUSTIFICATION OF THE QUALITATIVE CASE STUDY RESEARCH DESIGN AS AN APPROPRIATE METHODOLOGICAL CHOICE FOR THE STUDY

By choosing a qualitative methodology, the thoughts and lived experiences of the patients and HCPs were captured. The data collected for this study was directly obtained in the field at the case study site, as explained in detail in chapter 6. The nature of the qualitative method is inductive and data emerges during the fieldwork process. This was seen through the use of documentation as an emergent data collection method, as further explained in chapter 6. Owing to the inductive and flexible nature of the qualitative research design employed in the study, insightful discoveries emerged, such as an understating of diabetes as an illness that displays multiple layers of social phenomena which include social determinants focused on healing and health. The patients in this study indicated how social factors influenced

their diabetes health-care and treatment adherence patterns. The HCPs also indicated how social phenomena such as family assist diabetic patients in maintaining their lifestyle towards the effective maintenance of the illness (documented data sources – see appendix J). Teamwork between the HCPs occurred effectively at the clinic and this contributed to effective patient care. Converged communication in the HCP-patient relationship contributed to effective patient care for diabetes. The researcher discovered how individual patients and HCPs had different interpretations of the aetiology, illness experience and efficacy of treatment. No dispute occurred over the efficacy of treatment received at the clinic, as indicated in the patient data in chapter 7. These multiple levels of meaning-making and sharing rendered diabetes as an illness experienced as a social phenomenon that conveys meaning at many levels.

The use of documents enabled the researcher to triangulate the data collected, supplementing the observation and individual in-depth interview methods. The researcher was able to obtain richer and deeper data as she immersed herself in the field, owing to the qualitative methodology, which opened up new avenues of discovery along the way. The findings of the study produced original, authentic data. The researcher endeavoured to explore how communication enables effective care and treatment adherence for patients diagnosed with diabetes from both the HCP's and the patient's perspective. The thematic analysis discussed in chapters 7 and 8 explained how multiple layers of data emerged throughout the inductive research process.

9.3 THE THEORETICAL LOCATION OF THE STUDY IN THE FIELD OF SOCIOLOGY AND HEALTH-CARE

This study was positioned in the field of sociology and focused on health-care communication in order to explicate the social dimension of diabetes as an illness. In this regard, the researcher used Pescosolido's (2006:193) viewpoint, which suggests that the benefits of conducting health research in the field of sociology is that the discipline offers diverse theoretical and methodological insights that reflect the experiences of illness and health-care as social phenomena that play out in the rich arena of interpersonal and intrapersonal experiences. In particular, the following insights underscored the study:

- Social (context of the family), psychological (context of emotion such as denial and fear), economic (public health-care facilities are accessed by middle- to low-income people) and cultural factors (for the context of this study referred to as cultural belief and use of herbal remedies) affected individuals' management of their health condition.
- Diseases are often a reflection of current theories, diagnostic procedures, trends and resources in medicine, as well as cultural understandings.
- The quality and quantity of treatment are not linked solely to some clear disease profile, and are not consistently amenable to a single set of treatments.
- The eventual outcomes of health, illness and healing are shaped by extra-medical or extra-treatment factors.

The researcher was able to integrate Pescosolido's (2006:193) discussion above in order to justify the positioning of this study in the field of sociology of health-care. This study contributed additional evidence of the social dimensions of health-care. The conceptual contribution acknowledges that the social context/social dimension of the individual's health-care and treatment process should be integrated at the initial stages of treatment negotiation between the HCP and the patient. The diabetes educational material (for data sources – see appendix J) clearly indicates that the public health-care system acknowledges cultural beliefs and the inclusion of family in supporting the patient to cope with his or her illness. The conceptual contribution moves away from the conventional biomedical health-care perspective towards a patient-centred care approach to managing diabetes as an illness in the social context.

An illness such as diabetes is not suffered in isolation – instead, it affects patients at a social, psychological, economic and a cultural level. Since diabetes is an illness that requires lifestyle changes, patients need family support in order to alter their lifestyles, so that they are able to control their diabetes. Family support, motivation and care are required to motivate diabetic patients to control their health condition. Economically, illness affects patients at a social level and from the data it was evident that Frans had been affected economically by his illness because he

mentioned that he had a financial burden or strain when he had to purchase his own medication. This strain also adds to a patient's psychological state of mind. Diabetes is an illness that affects patients at a psychological level as well, since they need to alter their entire lifestyle towards living as diabetics. These adaptations include healthy eating plans, exercise patterns and life in general, since diabetes is considered to be a lifestyle illness. With an illness such as diabetes, patients require constant medical support to help monitor their blood glucose levels and adhere to their treatment regimens. The treatment of diabetes is thus not restricted to the medical system, but is viewed in a patient's social context, with family and culture being vital for patient treatment adherence in the South African medical system.

A health communication model was developed (from a variety of other models) to explain the health communication process at the research site. The conventional biomedical health-care system was challenged and the model emphasised patient-centred care as a key factor that needs to be catered for in the South African medical system. Since the patient is the individual living with diabetes, the illness needs to be considered from the patient's perspective in order for treatment adherence to be maintained. The patient resides in the social context of health-care and needs to be catered for in the treatment system. HCPs and patients need to communicate interactively (or practise communication exchange as opposed to only communication transfer) in order for the social dimensions of health-care to be explored and catered for during interactive HCP-patient treatment sessions.

The literature supported the question of patient-centred care as being an important component in an individual patient's health-care and treatment adherence patterns for diabetes (as detailed in chapter 4). As discussed above, diabetes is a lifestyle illness that is not as stigmatised as other illnesses, but it does affect the individual patient's lifestyle patterns. Each individual patient's circumstances are different and the HCP needs to consider this when treating the diabetic. The issue of patient-centred care is vital in diabetes health-care. The literature supports the researcher's argument regarding the social aspects of health-care, which include culture and family (as discussed in chapter 4) as core aspects of diabetes health-care in the South African context. The key ingredients of patient-centred care include culture and family (as indicated in the conceptual contribution - see chapter 5), since these

are social factors that can favour effective treatment adherence in individual patient care. The data indicated that patient-centred care occurred at the Stanger Hospital diabetes clinic in the HCP-patient relationships. However, it was noted that patient-centred care was only practised after eight of the 15 patients had defaulted or neglected treatment (see chapter 8 – HCP data). Patient-centred care contributed positively to interactive health communication between the HCP and the patients at the diabetes clinic. The research context of the study was reflected in the literature, which confirmed the researcher's argument of patient-centred care as a key consideration that accommodates the social dimension of individual patient care. The data collected for the study emphasised how effective HCP-patient relationships favoured effective patient care and treatment adherence patterns in individual patients.

9.4 SUMMARY OF THE RESEARCH QUESTIONS AND THE FINDINGS

In this section, each research question is tested against the findings and the literature and theory that guided the research.

9.4.1 Research question 1: What seminal health communication models assist with explaining HCP-patient and HCP-HCP interaction and communication dynamics?

Seminal health communication models that emerged from the social psychological, psychotherapy and communication backgrounds were reviewed in chapter 3 (the literature review part 1: health communication models). These models are used in health behaviour research and were thus selected for the purposes of this study (Sharma & Romas 2012; Janz, Champion & Stretcher 2002:46; Cottrell et al 2015). These models emphasise the intrapersonal context of health-care communication and focus on factors in the individual (self-concept) such as knowledge/beliefs, attitudes, personal history (past experiences), skills behaviour and motivation (Rimer & Glanz 2005). The intrapersonal models reviewed in this study included the following: the Health Belief Model (HBM); the Theory of Reasoned Action (TRA)/Theory of Planned Behaviour (TPB), the Protection Motivation Theory, the elaboration Likelihood Model (ELM), the Trans-Theoretical Model (TTM), the

Precaution Adoption Process Model (PAPM) and the Information-Motivation Behavioural Skills Model (IBM).

A critique relating to the intrapersonal models reviewed in chapter 3 concluded that none of these models are fully patient oriented or patient centred and lack the inclusion of the whole person in their larger social context. The notion of social inclusion as a positive contribution to health behaviour change was then elaborated on in the second part of the literature reviewed in chapter 4. The models reviewed in chapter 3 catered for behaviour and persuasive communication, to an extent, but were limited in the context of this study.

Chapter 4, formed part 2 of the literature review chapters, and discussed interpersonal health communication models and theories that cater for the social and cultural context of health-care. Intrapersonal factors are influenced or determined by different external variables in the environment and thus take place through interpersonal communication, that is, HCP-patient relationships. The literature reviewed in this section clearly indicated the importance of the social context of health-care, which included culture and family as support systems that assist patients with managing their illness through support and tolerance.

Chapter 4 formed the basis of the conceptual contribution (chapter 5) and clearly indicated the need for a single comprehensive framework that caters for the social context to individualised (or patient-centred) health-care which displays a two-way flow of interactive communication in the HCP-patient relationship that emphasises teamwork (HCP-HCP relationships) in providing effective diabetic patient care in the public health-care context in South Africa.

The specific research findings indicated that patient-centred care and the social context of the individual patient should be taken into account from the initial stages of treatment. The patient data indicated that five patients were catered for at an individual level, namely Howard, Frans, Kevin, Isaac and Priya. However, this notion of patient-centred care only occurred for these five individuals after they had defaulted their treatment regimens. Thus, as indicated in the literature reviewed in chapter 3 (as well as the theoretical discussion above), patient-centred care is lacking in the selected health communication models reviewed for this study. The literature in chapter 4 indicates that patient-centred care is a core requirement in

medical care. Hence the conceptual contribution indicates that the social system/context should be implemented at the very outset of the HCP-patient relationship when diagnosing and treating an illness such as diabetes. The data collected for the five specific patients mentioned above, clearly indicated that negligence and non-adherence were related to the patient's social circumstances – hence the patient's social context needs to be catered for when managing an illness such as diabetes.

With regard to cultural and familial concerns emanating from the findings, Isaac's herbal remedy had been catered for at the clinic. The nurse witnessed how his use of alternate therapy had helped cure his foot sore. The diabetes clinic acknowledged and supported the use of alternate medical therapy such as herbal remedies, as explained in chapter 7. Diabetes educational material provided at the clinic (see appendix J) acknowledges and allows patients to seek alternate help relating to their cultural beliefs, in conjunction with medical support and treatment. The role of family members in enhancing commitment to adherence emerged as a theme, as discussed in chapter 7. Both Kevin and Ruby had defaulted on their treatment for different reasons, but with effective family support they had been able to work towards managing their health. The documented data (see appendix J) provided to patients at the clinic also supported the question of the social context of family as a supportive element that contributes to effective patient management of the illness.

The findings also indicated that the intrapersonal context of the patient, that is, his or her cognitive state of mind should be considered during the HCP-patient counselling sessions. Since patients are afraid of their diagnosis because diabetes is a lifelong incurable illness, some of the patients compared diabetes with other incurable illness such as HIV/AIDS and cancer, thus indicating their fear. Thus patients' emotional reactions to their diabetes diagnosis should be assessed and accommodated appropriately.

The findings also indicated that favourable interpersonal communication occurred in the nurse-patient relationships and this favoured interactive communication at the clinic. This two-way flow of communication exchange facilitated patient care and the patients' understating of diabetes as an illness and its treatment methods. The findings indicated that convergent communication occurred in the HCP-patient relationship relating to the theme, patients' understanding of diabetes as an illness

and diabetes treatment options available. An effective nurse-patient relationship also emerged from the patient data and this converged with the documentation (stored in individual patient files), which indicated that the nurse was the diabetes educator at the clinic. All the patients indicated that they had a favourable relationship with the nurses at the clinic and experienced communication effectiveness with regard to understanding and learning to cope with their illness.

The literature indicated that the HCP needs to motivate their patients to accept their illness and work towards managing their illness by becoming fully adherent. The data converged in this regard since both HCPs and patients were aware that lifestyle challenges occurred with an illness such as diabetes. Yet again, patient-centred care assists with regard to catering for the individual patient, since HCPs can motivate patients to learn to exercise and eat healthily at an individual level as adapted to their lifestyle. As indicated in the data collected, the nurses educated patients in this regard since they were regarded as the core diabetes communicators according to the documented records stored in patient files. The nurses counselled patients as well.

9.4.2 Research question 2: Does interactive health communication between HCPs and patients facilitate or hamper effective understanding of diabetes?

The literature reviewed in chapter 3 indicated that patient-centred care was lacking in the health communication models reviewed in this chapter. Chapter 4 acknowledged the need for the social dimension which included family and culture as positive contributors to catering for the individual patient in the medical treatment system, thus favouring the need for patient-centred care as a positive contributor to health behaviour change in individual patient care and treatment adherence. Thus a single comprehensive health communication model was developed from a variety of different theoretical models which incorporate the social context of health-care and treatment for diabetes in a South African public health-care context. A cognitive mind change needs to occur in diabetic patients with regard to their acceptance of the illness and coping strategies (as discussed in chapter 3). The HCP, together with the social context of the family (as acknowledged in the public health-care system – see appendix J), can help patients change their negative attitudes towards the illness to

positive attitudes, in order for treatment adherence to occur. These theoretical orientations thus highlighted interactive health communication as a central requirement for patient-centred care in the medical system.

The findings suggest that, according to the patients interviewed, interactive communication had made a positive contribution to their understanding of diabetes as an illness and the relevant treatment methods. All 15 research participants indicated that they had not experienced communication barriers such as *role uncertainty*, *responsibility conflicts*, *power differences* or *unshared meanings* with the treatment team members at the diabetes clinic (Northouse & Northouse 1985:83). The findings further suggest that interactive communication between HCPs and patients contributes to effective communication, since both the HCP and the patient have the ability to share their views equally.

The theory explained that HCPs need to use the notion of “grief work” to help patients cope with and learn to accept their illness (Reynolds 1996:17). The Disease-Illness Model suggests (and the theories and models reviewed in chapter 4 acknowledge) that patient-centred care promotes a better understanding of illnesses since individual patients are catered for in the medical system. The above-mentioned model caters for social aspects of health-care since the patients’ *ideas*, *expectations* and *feelings* are taken into account (Levenstein et al 1989). Interactive communication between the HCP and patients contributes to a better understanding of diabetes and the treatment options available. The models reviewed in chapter 3 acknowledge patients’ cognitive ideas in relation to their illness diagnosis and the route they will follow in accepting or denying the illness and treatment adherence concerns.

The TTM and the PAMP explain the different stages patients go through in learning to accept their illness and learning to adhere to medication for the sake of their health. HCPs need to interactively communicate with patients at the different stages in order for patients to be persuaded to alter their behaviour positively and work towards treatment adherence. HCPs need to communicate with patients to reach the *maintenance stage* (TTM and PAMP models) of their individual health-care (Prochaska & DiClemente 1984:28). Diabetes is a complex illness and requires motivation from the HCP for the patient to maintain the lifestyle changes which will avoid serious long-term effects.

The findings suggest that the nurses communicated interactively with individual patients at the clinic, since they were responsible for diabetes educational sessions with individual patients. The nurses communicated interactively with patients and allowed them to voice their individual health-care concerns. The HCP explained how interactive communication effectively contributes to individual patients' health-care at the clinic. Empirically, patients indicated that the HCP's communication facilitated their understanding of diabetes and of the treatment options available. Four of the 15 patients used the HCPs at the clinic as their sole source of information on diabetes. The research participants used descriptive words to explain their appreciation for the diabetes care they received from the nurses at the clinic, as discussed in chapter 7.

The HCPs indicated possible barriers that hindered effective communication and these were also found in the literature, for instance, language and a lack of education. Some patients could only communicate in their vernacular languages and thus HCPs had to enlist the services of fellow colleagues to assist them with interpretation. However, the clinic did communicate to patients in both English and isiZulu. Miscommunication contributed negatively to an effective understanding of treatment methods, as discussed empirically by the HCPs.

9.4.3 Research question 3: Does communication either converge or diverge between the HCPs and the patients in terms of effective understanding of diabetes health-care and treatment adherence?

This research question is closely linked to the research question discussed above. The aim of this research question was to analyse how interactive communication either converged or diverged between HCPs and patients for diabetes health-care and treatment adherence. By analysing the convergences and divergences in communication, the researcher was able to uncover similarities and differences in the opinions of HCPs and patients regarding interactive communication and its effectiveness in understanding diabetes. Table 8.1 in chapter 8 indicated how communication either converged or diverged between HCPs and patients for treatment purposes. The findings suggest that there were far more convergences than divergences of opinions. Converged communication indicated that HCPs and patients had similar thoughts on how patients understood diabetes and the treatment options available to them.

Data was compared and contrasted between HCPs and patients in order to reach conclusions about communication convergence and divergence with regard to patients' understanding of diabetes and the various treatment options available to them. Convergent communication occurred between the HCPs and patients with regard to the following themes: *Patients' understanding of diabetes as an illness and treatment options; aspects of negligence and non-adherence; patient-centred care: taking the individual patient into account; recommendations regarding the diabetes clinic; emotional reactions to diabetes diagnosis; and lifestyle challenges.*

Converged communication positively contributed to interactive communication between the HCPs and patients at the clinic. HCPs need to understand the lived experiences of diabetes as an illness, as opposed to the clinical aspects of diabetes management only. This refers to the shift from the conventional biomedical health-care perspective to a more patient-oriented health-care system. Patient-centred care facilitates interactive health communication in medical settings, which contributes positively to individual patients' understanding of their condition. Patients experience more than physical pain with an illness – they experience emotional, psychological and social stress with an illness such as diabetes, as discussed above in section 9.3. According to Ryan (2006:314), *"intangible costs are the economic value of grief, pain, suffering, and other difficult to value costs for the patient and their families"*. According to the health communication models discussed in chapter 3, HCPs need to alter the cognitive mind-set of patients in order to enable them to accept their illness and manage treatment adherence. Patients cognitively experience fear of diabetes and thus process unfavourable thoughts, attitudes, beliefs about the illness. This then leads to a negative attitude towards their acceptance of the disease. This can lead to patients neglecting treatment because they are in denial about their illness (Petty & Cacioppo, 1986). HCPs need to persuade patients in the *pre-contemplation* stage to alter their behaviour through interactive communication (Prochaska & DiClemente 1984:24–25).

The Disease-Illness Model and the literature reviewed in chapter 4 suggest that HCPs need to cater for the patient's perspective to health-care and treatment adherence, as discussed above (Levenstein et al 1989). The notion of patient-centred care is lacking in the seminal models discussed in chapter 3. The findings suggest that both the patients and HCPs perceived that patients understood what

diabetes as an illness entailed and the treatment options available to them. The HCPs, however, explained that even though the patients understood diabetes, negligence and non-adherence towards their treatment did occur.

The data collected from the patient's perspective correlated with similar findings, which indicated that treatment negligence occurred because of personal reasons stemming from their social circumstances. The TTM suggests that patients do *relapse* in treatment and this was confirmed in the findings of this study (Prochaska & DiClemente 1984:29). Eight of the 15 patients did experience a *relapse* in their treatment at least once, after their diabetes diagnosis. The documents used to triangulate this supported these findings with regard to patient treatment adherence. The findings of the study suggest that negligence and non-adherence occurred with similar meaning but in different contexts, which included the following: non-adherence from a medical perspective, and negligence from a more personal perspective.

HCPs at the diabetes clinic focused on catering for the individual patient. This meant that interactive communication was practised at the clinic since individual patients' needs were catered for. However, it was noted that the HCPs strove to cater for individual tailor-made plans only after patients had been non-adherent to their medication, as discussed in research question 1 above. This was noted in the case of five of the 15 research participants and revealed in the analysis of the data collected from both HCPs and patients (as discussed in chapters 7, section 7.10 and 8). This is linked to the conceptual contribution which emphasised that the social context should be integrated into the medical system when treatment commences.

HCPs and patients had the same wish list for core facilities, which were currently lacking at the clinic. The HCPs at the clinic wished for much-needed facilities that would only improve patient care at the clinic. This emphasises their concerns for facilitating effective patient care at the clinic.

9.4.4 Research question 4: What are the possible barriers that could hinder effective communication in HCP-HCP teamwork?

The findings suggest that none of the barriers suggested by Northouse and Northouse (1985) were an obstacle to effective teamwork at the diabetes clinic. It

was found that teamwork occurred effectively at the clinic, since each HCP was aware of the role he or she needed to fulfil to ensure that maximum patient care was achieved. The findings underscore the strength in the team and a high level of awareness of the HCPs at the diabetes clinic of the effect of positive teamwork on diabetes patient care.

However, these findings, when compared to theoretical work on *role stress* and *role overload*, revealed that the HCPs at the diabetes clinic were over-worked and they thus experienced tiredness because they were faced with constant challenges (Northouse & Northouse 1985:96–97; Northouse & Northouse 1998). Staff shortages contributed to fatigue, as expressed by most of the HCPs. High patient numbers contributed to the HCPs being over-worked and their resultant fatigue. The nurses performed duties that fell outside their job description (example, they performed the duties of the medical doctor in his absence – see chapter 8) and thus experienced *role overload* at the clinic. Since only one medical doctor consulted once a week at the clinic, as discussed in chapter 8, the nurses bore the brunt of the work in managing diabetes health-care at the clinic. Despite this, the nurses displayed effective teamwork principles in their work ethic.

The staff at the clinic were not affected by *autonomy struggles*. It was noted that the chief professional nurse ran the diabetes clinic in the absence of the medical doctor, which was a departure from the conventional pattern, where the senior position is always filled by a medical doctor as “head” of the treatment team. Instead, at this clinic, all the HCPs worked as a team in fulfilling their assigned duties as well as duties that fell outside their job descriptions. The findings of the study therefore support the notion that effective teamwork positively contributes to effective patient care for diabetes. Team attributes such as care, support, trust and interactive communication between the HCPs emerged from observational and interview data. The team spirit at the clinic contributed to effective communication dynamics between treatment team members, and thus facilitated effective patient care.

9.5 CONTRIBUTION OF THE STUDY

This study expands the notion of HCP-patient and HCP-HCP communication dynamics in the management of diabetes as an illness from the data collected at the

case study research site, Stanger hospital's diabetes clinic. The data collected clearly indicated how interactive communication emphasises patient-centred care and caters for individual patients' social context when learning to manage their diabetes. Communication dynamics in the form of HCP-patient and HCP-HCP relationships plays a key role in either facilitating or hampering patient's treatment adherence patterns. Teamwork in the HCP-HCP relationship clearly contributed to effective patient care, as reflected in the data collected for the study.

This study should contribute to the existing body of knowledge in the fields of sociological health-care and sociological communication in the form of a conceptual contribution. A model was developed from other models in the literature which emphasised HCP-patient interaction for effective diabetes health-care and treatment adherence in the South African public health-care system which included the social context/social system for individual patient health-care. The model emphasises the patient's perspective on health-care since the patient is the person living with diabetes. Patient-centred care is a vital component of the public health-care system since it caters for the individual patient's perspective on diabetes health-care. Since patients need to indicate factors that hinder their treatment adherence, patient-centred care focuses on exploring the patient's notions about his or her illness.

The theory supports the role played by social factors such as culture and family support to help patients cope with diabetes and adhere to their medication regimen (as discussed in chapter 4). Culture is a vital part of the South African medical system, since many patients seek herbal or cultural remedies to try and maintain their health, as acknowledged in the comic strips (data sources – see appendix J). In a diverse country like South Africa, culture needs to be included in the medical system in order to accommodate the patient's perspective by maintaining cultural sensitivity in diabetes health-care.

This study should also contribute to the limited research, emphasising the notion that diabetes is a silent epidemic that usually goes unnoticed and is not given prime importance in the health-care system, compared to other chronic illnesses such as HIV/AIDS, cancer or TB. As discussed in chapter 1, diabetes is a silent epidemic that is increasing in diagnosis levels daily and is contributing to high mortality rates worldwide. [Research on diagnosis levels was included to conceptualise the study. It

was not intended to give a detailed statistical report on the rates of the illness as discussed in chapter 2, in the same way as other chronic illnesses are.] Hence more attention should be paid to this epidemic in order to emphasise its harsh reality and its social impact on the world. Diabetes is affecting society and its social dimensions therefore need to be addressed with further research in the social disciplines.

9.6 FUTURE POSSIBILITIES FOR RESEARCH, ACTION AND POLICY MAKING

9.6.1 Recommendations for future research

One recommendation for further research is that the conceptual model should be tested using a multiple qualitative case study research approach in order to further evaluate the effectiveness of treatment adherence from the patient's perspective in a social context (family and culture) in different public health-care settings. A further recommendation is that a longitudinal study could be conducted at different South African diabetes clinics to test the model. The conceptual model is theoretically grounded, but needs to be explored at an empirical level in the future.

Another recommendation is that further research should be conducted on a larger sample scale at more diabetes clinics in the country, in order to further explore communication dynamics in HCP-patient relationships and HCP-HCP teamwork on a larger scale. Larger-scale studies would make it possible to generalise the research on this topic.

9.6.2 Policy recommendations: for the South African public health-care system

Since this was a qualitative study with a small sample of research participants, general conclusions and recommendations should be treated with circumspection. However, the researcher drew her conclusions on conceptual grounds in relation to the theoretical models used in the study and the empirical findings of her research.

In a diverse country like South Africa, policy needs to be formulated in relation to the social aspects of health-care, as indicated in this study. In the South African medical system, a team approach needs to be emphasised to achieve effective patient care.

HCPs need to receive training on promoting the teamwork approach in the public health-care system. HCPs need to respect each other's roles in order to achieve optimal patient care. A further policy on the "three-way teamwork approach" should address the dynamic of HCP-patient-family members. A social support system needs to be developed to promote patient support. Hence the public health-care system needs to incorporate family members in patient health-care decisions.

9.7 RECOMMENDATIONS FOR STANGER HOSPITAL'S DIABETES CLINIC: THE CHALLENGE OF CHANGE

The following core requirements are urgently needed at Stanger Hospital's diabetes clinic. These include a toilet located inside the clinic, a larger clinic space, sheltered waiting areas, more clinic staff, especially specialist diabetic medical doctors who are based at the clinic on a permanent basis. These requirements were discussed by the clinical staff and patients (see chapters 7 and 8). It is a matter of human dignity that patients be able to urinate in clean toilets that are conveniently located inside or near to the diabetes clinic. Urine testing is a core requirement in the treatment of diabetes. The KwaZulu-Natal Department of Health should look into building a more permanent and spacious building at the hospital which is devoted to diabetes care. Staff shortages are a challenge of the public health-care system, but it is crucial that more medical doctors be based permanently at the clinic on a daily basis. Patients need to be protected from the cold, sun and rain, and this means that waiting areas at the hospital should be sheltered to cater for effective patient care at public health-care facilities. A larger clinic is urgently required in order to ensure patient privacy. Privacy in the medical system is a core requirement and protects human dignity. All patients have a right to privacy in the health-care system and this should be practised at the diabetes clinic.

The question of finance is a challenge, but the country should invest in maintaining patient care, since healthy patients can contribute positively to the economic force of the country. Nurses in the public health-care system should be respected and treated with dignity. The medical doctor at the diabetes clinic emphasised the importance of the nurses at the clinic: "Nurses should be well respected; they do a lot at this clinic, they are the most important caregivers here." The public health-care

system is challenged on a daily basis by the inequalities of the health-care systems of the past, as discussed in chapter 2. These challenges need to be addressed, in order to improve facilities and overall patient care in South Africa's public health-care system.

9.8 GENERAL CONCLUSION

“Health organizations play an important and unique role in our lives, as patients, as employees, or members, and as consumers of health education. Health organizations share the defining characteristics of organizations: They are social, goal-orientated, structured, coordinated, and function in an embedded environment. Communication constitutes these characteristics and makes health organizing possible” (Apker 2012:14).

The public health-care system provides health-care services to patients. Interactive communication is a core requirement for ensuring that effective diabetes health-care is provided to patients. Patient-centred care is necessary in the public health-care system in South Africa, since it has to accommodate the diverse population of the country. Interactive health communication between HCPs and patients ensures that the individual patient's perspective on health-care is catered for.

For an illness such as diabetes, social factors need to be considered in the medical system to ensure that effective patient care is provided. Cultural factors affect health-care and thus need to be accommodated in the medical system. The aspect of family as a support system contributes positively to patient-centred care and HCPs therefore need to integrate a patient's family members in managing diabetes health-care.

The historical background to diabetes in the developed and developing world was provided in chapter 2. Chapter 2 contextualised the importance of diabetes research in South Africa and indicated how diabetes diagnosis rates are increasing in the developing world. Factors such as urbanisation, poverty, changes in diet and lifestyle patterns are negatively impacting on diabetes rates in Southern Africa. Chapter 2

also explained the epidemiology of diabetes in South Africa and discussed in detail the illness and its impact on the human body.

This study provided a descriptive analysis of interactive health communication and its impact on diabetes health-care and treatment adherence patterns from both the patients' and HCPs' perspectives. The qualitative methodology was suitable for providing an in-depth analysis of communication dynamics in HCP-HCP teamwork relationships and also in HCP-patient relationships for diabetes health-care. The qualitative methodology contributed positively to exploring health-care communication between HCP and patients.

The conceptual model developed caters for interactive health communication in the social context of a South African medical setting. It also accommodates the social context/social system and includes tenets such as culture and family support and focuses on patient-centred care. The model can be used for diabetes health-care in a South African health-care context, and should thus make a positive contribution to the field of sociology and health-care, as well as sociology and communication.

LIST OF SOURCES CONSULTED

- Abbott, P & Payne, G. 1990. Introduction: developing the sociology of health. In *New directions in the sociology of health*, edited by P Abbott & G Payne. Brighton: Falmer Press:1–11.
- Abdulhai, N, Al Shafee, M, Freudenthal, S, Ostenson, G, & Wahlstrom, R. 2007. Patient-provider interaction from the perspective of type-2 diabetes patients in Muscat, Oman: A qualitative study. *BMC Health Services, Research*, 7:162–172.
- Adkins, L. 2002. Reflexivity and the politics of qualitative research. In *Qualitative research in action*, edited by T May. London: Sage:322–348.
- African National Congress. 1994. A national health plan for South Africa. Johannesburg. Available at: <http://www.anc.org.za/show.php?id=257> [Accessed 20/05/2014].
- Airhihenbuwa, CO. 1993. Health promotion for child survival in Africa: implications for cultural appropriateness. *Hygie*, 12(3):10-15.
- Airhihenbuwa, CO. 1995. *Health and culture: beyond the western paradigm*. Thousand, CA: Sage.
- Airhibenbuwa, CO & Obregon, R. 2000. A critical assessment of theories/models in health communication for HIV/AIDS. *Journal of Health Communication*, 5(5):5–15.
- Amos, A, McCarty, D & Zimmet, P. 1997. The rising global burden of diabetes and its complications: estimates and projections to the year 2010. In *Global and societal implications of the diabetes epidemic*, edited by P Zimmet, KGGM Alberti & J Shaw. 2001. *Nature*, 414:782–787.
- Anderson, JM. 1987. The cultural context of caring. *Canadian Critical Care Nursing Journal*, 4(4):7-13.
- Anderson, LA. 1990. Health-care communication and selected psychosocial correlates of adherence in diabetes management. *Diabetes Care*, 13(2):66–76.
- Anderson, RM & Funnell, MM. 2010. Patient empowerment: myths and misconceptions. *Patient Education and Counseling*, 79:277–282.
- Apker, J. 2012. *Communication in health organizations*. Cambridge: Polity Press.
- Armitage, CJ & Conner, M. 2000. Social cognition models and health behaviour: A structured review. *Psychology and Health*, 15(2):173–189.

- Babbie, E & Mouton, J (Eds). 2001. *The practice of social research*. Cape Town: Oxford University Press.
- Baggs, JG. 1998. Nurse-physician collaboration: the challenge of collaboration. In *Partnerships in healthcare: transforming relational process*, edited by AL Suchman, RJ Bothelho & P Hinton-Walker Rochester: University of Rochester Press:185–197.
- Balint, E. 1969. The possibilities of patient-centred medicine. *Journal of the Royal College of General Practitioners*, 17:269–276.
- Bandura, A. 2012. Social cognitive theory. In *Handbook of theories of social psychology*, volume 1, PAM Van Lange, AW Kruglanski & ET Higgins. London: Sage:349–374.
- Banerji, D. 1989. The sociology of health-care in developing countries. In *Health and behaviour: selected perspectives*, edited by D Hamburg & N Sartorius. Cambridge: Cambridge University Press:178–191.
- Baranowski, T, Perry, CL & Parcel, GS. 2002. How individuals, environments, and health behaviour interact. In *Health behavior and health education theory, research, and practice*, edited by K Glanz, BK Rimer & FM Lewis. 3rd edition. San Francisco, CA: Jossey-Bass:165–184.
- Bardsley, JK & Resnick, HE. 2008. Epidemiology of diabetes mellitus. In *Epidemiology and demography in public health*, edited by J Killewo, K Heggenhougen & SR Quah. San Diego: Academic Press:306–313.
- Bartholomew, LK, Parcel, GS, Kok, G & Gottlieb, NH. 2006. *Planning health promotion programs: An intervention mapping approach*. San Francisco: Jossey-Bass.
- Bartz, R. 1999. Beyond the bio-psychosocial model: new approaches to doctor-patient interactions. *The Journal of Family Practice*, 48(8):1–7.
- Bastable, SB. 2008. *Nurse as educator principles of teaching and learning for nursing practice*. 3rd edition. Sudbury, MA: Jones & Barlett.
- Beckert, K & Van der Merwe, L. 2010. South African approaches to structured education in type-1 diabetes. *South African Journal of Diabetes and Vascular Disease*, 7(3):114–116.
- Bellin, SS, Geiger, HJ & Gibson, CD. 1969. Impact of the ambulatory health-care services on the demand for hospital beds. *The New England Journal of Medicine*, 280:808–812.
- Benatar, S. 2013. The challenges of health disparities in South Africa. *South African Medical Journal*, 103(3):1–3.
- Benatar, SR. 1997. Health-care reform in the new South Africa. *The New England Journal of Medicine*, 336(12):891–895.

- Bentancourt, JR. 2006. Cultural competency: providing quality care to diverse populations. *PubMed*, 21(12):988–995.
- Beran, D, Matos, CS & Yudkin, S. 2010. Special report: the diabetes UK Mozambique twinning programme. Results of improvements in diabetes care in Mozambique: a reassessment 6 years later using the rapid assessment protocol for insulin access. *Diabetes Medicine*, 27:855–861.
- Beran, D & Yudkin, JS. 2006. Diabetes care in sub-Saharan Africa. *The Lancet*, 368:1689–1695.
- Berbard, LC & Krupat, E. 1994. *Health psychology biosychosocial factors in health and illness*. Austin, TX: Holt, Rinehart & Winston.
- Bernard, LC & Krupat, E. 1994, *Health psychology biopsychosocial factors in health and illness*. Austin, TX: Holt, Rinehart & Winston.
- Berry, D. 2007. *Health communication: theory and practice*. New York, NY: Open University Press.
- Betancourt, JR, Green, AR & Carrillo, JE & Ananeh-Firemong, OE. 2003. Defining cultural competence: a practical framework for addressing racial/ethnic disparities in health and health-care. *Public Health Reports*, 118:293–302.
- Beukes, S, Nolte, AGW & Arries, E. 2010. Value-sensitive clinical accompaniment in community nursing science. *Health South Africa Gesondheid*, 15(1):1–27.
- Bjork, S. 2001. The cost of diabetes and diabetes care. *Diabetes Research and Clinical Practice*, 54(1):13–18.
- Bloom, A. 1978. *Diabetes explained*. 3rd edition. Lancaster: Falcon House.
- Bond, J & Bond, S. 1994. *Sociology and health-care: An introduction for nurses and other health-care professionals*. 2nd edition. Singapore: Longman.
- Booth-Butterfield, S & Welbourne, J. 2002. The elaboration likelihood model: its impact on persuasion theory and research. In *The persuasion handbook: developments in theory and practice*, edited by JP Dillard & M Pfau. Thousand Oaks, CA: Sage:155–169.
- Boshoff, C & Gray, B. 2004. The relationships between service quality, customer satisfaction and buying intentions in the private hospital industry. *South African Journal of Business Management*, 35(4):27–38.
- Bourne, LT, Lambert, EV & Steyn, K. 2002. Where does the black population of South Africa stand on the nutrition transition? *Public Health Nutrition*, 5(1A):157–162.

- Boyle, JP, Honeycutt, AA, Naryan, KMV, Hoerger, TJ, Geiss, LS, Chen, H & Thompson, TJ. 2001. Projection of diabetes burden through 2050. *Diabetes Care*, 24(11):1936–1940.
- Bradshaw, D, Norman, R, Pieterse, D & Levitt, NS. 2007. Estimating the burden of disease attributable to diabetes in South Africa in 2000. *South African Medical Journal*, 97(7):700–706.
- Brewer, J & Hunter, A. 2006. *Foundations of multi-method research synthesizing styles*. Thousand Oaks, CA: Sage.
- Brisset, C, Leanza, Y & Laforest, K. 2013. Working with interpreters in health-care: A systematic review and meta-ethnography of qualitative studies. *Patient Education and Counselling*, 91:131–140.
- Bui, L, Mullan, B & McCaffery, K. 2013. Protection motivation theory and physical activity in the general population: A systematic literature review. *Psychology, Health and Medicine*, 18(5):522–542.
- Burger, R, Bredenkamp, C, Grobler, C & Van den Berg, S. 2012. Have public health spending and access in South Africa become more equitable since the end of apartheid? *Development Southern Africa*, 29(5):681–703.
- Bury, M. 1998. Post-modernity and health. In *Modernity, medicine and health: medical sociology towards 2000*, edited by G Scambler & P Higgs London: Routledge:1–28.
- Busia, K. 2005. Review: medical provision in Africa, past and present. *Phytotherapy Research*, 19:919–923.
- Campbell, R, Pound, P, Pope, C, Britten, N, Pill, R, Morgan, M & Donovan, J. 2003. Evaluating meta-ethnography: a synthesis of qualitative research on lay experiences of diabetes and diabetes care. *Social Science and Medicine*, 56:671–684.
- Campbell-Hall, V, Petersen, I, Bhana, A, Mjadu, S, Hosegood, V & Flisher, AJ. 2010. Collaboration between traditional practitioners and primary health-care staff in South Africa: developing a workable partnership for community mental health services. *Transcultural Psychiatry*, 47(4): 610–628.
- Campinha-Bacote, J. 1995. The quest for cultural competence in nursing care. *Nursing Forum*, 30(4):19–25.
- Campinha-Bacote, J. 2002. The process of cultural competence in the delivery of healthcare services: a model of care. *Journal of Transcultural Nursing*, 13(3):181–184.
- Carroll, KM, Ball, SA, Nich, C, O'Connor, PG, Eagen, DA, Frankforter, TL, Triffleman, EG, Shi, J & Rounsaville, BJ. 2001. Targeting behavioural therapies to enhance naltrexone

treatment of opioid dependence: efficiency of contingency management and significant other involvement. *Archaeology of General Psychology* 58(8):755–761.

Case, A & Menendez, A. 2009. Sex differences in obesity rates in poor countries: evidence from South Africa. *Economics and Human Biology*, 7:271–282.

Casillas, A, Paroz, S, Green, AR, Wolff, H, Weber, O, Faucherre, F, Ninane, F & Bodenmann, P. 2014. Cultural competency of health-care providers in a Swiss university hospital: self-assessed cross-cultural skilfulness in a cross-sectional study. *Biomedical Central*, 14(19):1–9.

Chang, M & Kelly, AE. 2007. Patient education: addressing cultural diversity and health literacy issues. *Urologic Nursing*, 27(5):411–417.

Chen, S & Chaiken, S. 1999. The heuristic-systematic model in its broader context. In *Dual-process theories in social psychology*, edited by S Chaiken & Y Trope New York, NY: Guilford Press:73–96.

Chen, S, Duckworth, K & Chaiken, S. 1999. Motivated heuristic and systematic processing. *Psychology Inquiry*, 10(1):44–49.

Cioffi, J. 2013. Being inclusive of diversity in nursing care: a discussion paper. *Collegian*, 20:249–254.

Clarke, A. 2001. *The sociology of healthcare*. Harlow: Prentice Hall.

Collinson, MA, Tollman, SM & Kahn, K. 2007. Migration, settlement change and health in post-apartheid South Africa: triangulation health and demographic surveillance with national census data. *Scandinavian Journal of Public Health*, 35(69):77–84.

Corcoran, N. 2013. *Communicating health strategies for health promotion*. London: Sage.

Cooper, HC, Booth, K & Gill, G. 2003. Patients' perspectives on diabetes health-care education. *Health Education Research*, 18(2):191–206.

Coovadia, H, Jewkes, R, Barron, P, Sanders, D & McIntyre, D. 2009. Health in South Africa 1. The health and health system of South Africa: historical roots of current public health challenges. *The Lancet*, 274:817–834.

Cort, MA, Gwebu, ET, Tull, ES, Cox, NA & Modise, T. 2013. The differential gender effect of internalised racism on abdominal obesity in KwaZulu-Natal, South Africa. *The Social Science Journal*, 50:557–564.

Cottrell, RR, Girvan, JT, McKenzie, JF & Seabert, D. 2015. *Principles and foundations of health promotion and education*. Upper Saddle River, NJ: Pearson.

- Coulter, A & Ellins, J. 2006. *Patient-focused interventions: a review of the evidence*. Oxford: The Health Foundation and Picker Institute.
- Creswell, JW. 2003. *Research design: qualitative, quantitative and mixed methods approaches*. 2nd edition. Irvine, CA: Sage.
- Cuellar, NG, Brennan, AMW, Vito, K & De Leon Siantz, ML. 2008. Cultural competence in the undergraduate nursing curriculum. *Journal of Professional Nursing*, 24(3):143–149.
- Dattani, N & Jiang, A. 2009. The diabetic pandemic: globalization, industrialization, and type-2 diabetes. *The Meducator*, 1(15):1–5.
- Davis, K, Schoenbaum, SC & Audet, AM. 2005. A 2020 vision of patient-centered primary care. *Journal of Internal Medicine*, 20:953–957.
- De Haan, M. 1996. *The health of Southern Africa*. 7th edition. Kenwyn: Juta.
- De Vera, N. 2003. Perspectives on healing foot ulcers by Yaquis with diabetes. *Journal of Transcultural Nursing*, 14(1):39–47.
- De Vos, AS. 1998. *Research at grassroots: a primer for the caring professions*. Pretoria: Van Schaik.
- Delahanty, LM, Grant, RW, Wittenberg, E, Bosch, JL, Wexler, DJ, Cagliero, WE & Meigs, JB. 2007. Association of diabetes-related emotional distress with diabetes treatment in primary care patients with type-2 diabetes. *Diabetic Medicine*, 24:48–54.
- Deneckere, S, Euwema, M, Lodewijckx, C, Panella, M, Mutsari, T, Sermeus, W & Vanhaecht, K. 2013. Better inter-professional teamwork, higher level of organized care, and lower risk of burnout in acute health-care teams using care pathways: a cluster randomized controlled trial. *Medical Care*, 51(1):99–107.
- Denscombe, M. 2010. *The good research guide for small-scale social research projects*. 4th edition. Maidenhead, UK: Open University Press.
- Deutschlander, MS, Lall, N & van de Venter M. 2009. Plant species used in the treatment of diabetes by South African traditional healers: an inventory, *Pharmaceutical Biology*, 47(4):348–356.
- Diabetes South Africa. 2000. *Diabetes and you*. [Booklet]. [Si]: Clacherty.
- Dogar, IA. 2007. Biopsychosocial model. *Australian Primary Mathematics Classroom*, 1(1):11–13.
- Douglas, MK & Pacquiao, DF. 2010. Preface. *Journal of Transcultural Nursing*, 21(1):5–6.

- Du Plooy, GM. 2009. *Communication research techniques, methods and applications*. Cape Town: Juta.
- Edwards, S. 2014. Health promotion and health needs assessment. In *Contemporary occupational health nursing a guide for practitioners*, edited by G Thornbory New York: Routledge:53–74.
- Elder, JP, Ayala, GX, Parra-Medina, D & Talavera, GA. 2009. Health communication in the Latino community: issues and approaches. *Annual Review Public Health*, 30:227–251.
- Elder-Vass, D. 2012. *The reality of social construction*. Cambridge: Cambridge University Press.
- Elliott, P. 2009. *Infection control: a psychosocial approach to changing practice*. Oxford: Radcliffe.
- Engel, GL. 2013. The need for a new medical model: a challenge for biomedicine. In *Handbook of patient-provider interaction: raising and responding to concerns about life, illness, and disease*, edited by WA Beach. Liberty, OH: Hampton:89–98.
- Erasmus, RT, Blanco, BE, Okesina, AB, Arana, JM, Gqweta, Z & Matsha, T. 2001. Importance of family history in type-2 black South African diabetic patients. *Postgraduate Medical Journal*, 77:323–325.
- Feldman, DS, Novack, DH & Gracely, E. 1998. Effects of managed care on physician-patient relationships, quality of care, and the ethical practice of medicine. *Archives Internal Medicine*, 158:1626–1632.
- Ferzacca, S. 2012. Diabetes and culture. *Annual Review of Anthropology*, 41: 411–26.
- Fisher, L, Chesla, CA, Bartz, RJ, Gillis, C, Skaff, MA, Sabogal, F, Kanter, RA & Lutz, CP. 1998. The family and type 2 diabetes: a framework for intervention. *The Diabetes Educator*, 24(5):599–607.
- Fisher, JD & Fisher, WA. 1992. Changing AIDS risk behavior. *Psychological Bulletin*, 111(3):455–474.
- Fleming, E & Gillibrand, W. 2009. An exploration of culture, diabetes, and nursing in the South Asian community: a metasynthesis of qualitative studies. *Journal of Transcultural Nursing*, 20(2):146–155.
- Flick, U. 2011. *Introducing research methodology: a beginner's guide to doing a research project*. London: Sage.
- Floyd, DL, Prentice-Dunn, S & Rogers, RW. 2000. A meta-analysis of research on protection motivation theory. *Journal of Applied Social Psychology*, 30:407–429.

- Forsyth, LH & Goetsch, LV. 1997. Perceived threat of illness and health protective behaviors in offspring of adults with non-insulin dependent diabetes mellitus. *Behavioural Medicine* 23(3):112–120.
- Foster, KE. 2005. Clinics, communities, and cost recovery: primary health-care and neoliberalism in post-apartheid South Africa. *Cultural Dynamics*, 17(3):241–266.
- Foy, R, Hempel, S, Rubenstein, L, Suttorp, M, Seelig, M, Shanman, R & Shekelle, PG. 2010. Meta-analysis: effect of interactive communication between collaborating primary care physicians and specialists. *Annals of Internal Medicine*, 152:247–258.
- Frankel, RM & Devers, KJ. 2000. Study design in qualitative research 1: developing questions and assessing resource needs. *Education for Health*, 13(2):251–261.
- Freeman, A & Dolan, M. 2001. Revisiting Prochaska and DiClemente's stages of change theory: an expansion and specifications to aid in treatment planning and outcome evaluation. *Cognitive and Behavioral Practice*, 8:224–234.
- Freidson, E. 2008. The social organisation of illness. In *Perspectives in medical sociology*, edited by P Brown. 4th edition. Long Grove, IL: Waveland Press:273–291
- Freund, PES & McGuire, MB. 1991. *Health, illness, and the social body: a critical sociology*. Englewood Cliffs, NJ: Prentice-Hall.
- Gary, FA, Sigsby, LM & Campbell, D. 1998. Preparing for the 21st century: diversity in nursing education, research, and practice. *Journal of Professional Nursing*, 14(5):272–279.
- Gavgani, RM, Poursharifi, H & Aliasgarzadeh, A. 2010. Effectiveness of information-motivation and behavioral skill (IMB) model in improving self-care behaviors & Hba1c measure in adults with type2 diabetes in Iran-Tabriz. *Procedia Social and Behavioral Sciences*, 5:1868–1873.
- Gerteis, M, Edgman-Levitan, S, Daley, J & Delbanco, TL. 1993. *Through the patient's eyes*. San Francisco: Jossey-Bass.
- Ghaye, T. 2005. *Developing the reflective healthcare team*. Oxford: Blackwell.
- Gibson, TB, Song, X, Alemuyehu, B, Wang, SS, Waddell, JL, Bouchard, JR & Forma, F. 2010. Cost sharing, adherence, and health outcomes in patients with diabetes. *The American Journal of Managed Care*, 16(8):589–600.
- Giger, JN & Davidhizar, RE. 1995. *Transcultural nursing: assessment and intervention*. 2nd edition. St. Louis, MA: Mosby-Year Book.
- Glanz, K, Rimer, BK & Lewis, FM. 2002. *Health behaviour and health education: theory, research, and practice*. 3rd edition. San Francisco CA: Jossey-Bass.

- Goudge, J, Gilson, L, Russell, S, Gumede, T & Mills, A. 2009. Affordability, availability and acceptability barriers to health-care for the chronically ill: longitudinal case studies from South Africa. *Biomedical Central Health Services Research*, 9:75.
- Grant, R. 2013. Patient-centred care: is it the key to stemming the tide? *International Journal of Tuberculosis and Lung Disease*, 17(10):3–4.
- Greaves, D. 2004. *The healing tradition: reviving the soul of Western medicine*. Milton Keynes, UK: Radcliffe.
- Greenhalgh, PM. 1997. Diabetes in British South Asians: nature, nurture, and culture. *Diabetes Medicine*, 14:10–18.
- Gulati, S, Watt, L, Shaw, N, Sung, L, Poureslami, IM, Klaassen, R, Dix, D, & Klassen, R. 2012. Communication and language challenges experienced by Chinese and South Asian immigrant parents of children with cancer in Canada: implications for health services delivery. *Paediatric Blood Cancer*, 58:572–578.
- Gurung, RAR. 2006. *Health psychology a cultural approach*. Boston, MA: Thomson Wadsworth.
- Guy, M. 2005. *Recommendations for the provision of services in primary care for people with diabetes*. London: Diabetes UK.
- Habayeb, GL. 1995. Cultural diversity: a nursing concept not yet reliably defined. *Nursing Outlook*, 43(5):224–227.
- Hall, V, Thomsen, RW, Henriksen, O & Lohse, N. 2011. Diabetes in sub-Saharan Africa, 1999–2011: epidemiology and public health implications, a systematic review. *BMC Public Health*, 11:1–12.
- Hamilton, MA, Hunter, JE & Boster, FJ. 1993. The elaboration likelihood model as a theory of attitude formation: a mathematical analysis. *Communication Theory*, 3:50–66.
- Hansen, EC. 2006. *Successful qualitative health research a practical introduction*. London: Open University Press.
- Harris, B, Goudge, J, Ataguba, JE, McIntyre, D, Nxumalo, N, Jikwana, S & Chersich, M. 2011. Inequalities in access to health-care in South Africa. *Journal of Public Health Policy*, 32:102–123.
- Hayden, J. 2009. *Introduction to health behavior theory*. Sudbury, MA: Jones & Barlett.
- Hayes, E, McCahon, C, Panahi, MR, Hamre, T & Pohlman, K. 2008. Alliance not compliance: coaching strategies to improve type 2 diabetes outcomes. *Journal of American Academy of Nurse Practitioners*, 20:155-162.

- Heesacker, M & Shanbhag, MG. 2002. Social influence in counselling: application of the elaboration likelihood model to counseling. In *Counseling based on process research applying what we know*, edited by GS Troyon. Boston MA: Allyn & Bacon:298–324.
- Herselman, S. 1996. Some problems in health communication in a multicultural clinical setting: a South African experience. *Health Communication*, 8(2):153–170.
- Holtz, C. 2008. *Global health-care issues and policies*. Sudbury, MS: Jones & Bartlett.
- Hugman, B. 2009. *Healthcare communication*. London: Pharmaceutical Press.
- Hunter, DJ & Srinath Reddy, K. 2013. Global Health: Non-communicable diseases. *The New England Journal of Medicine*, 369(14):1336–1343.
- Husband, C & Hoffman, E. 2004. Transcultural health-care practice: Transcultural communication and health-care practice. London: Royal College of Nursing. Available at: http://www.rcn.org.uk/development/learning/transcultural_health/communication [Accessed 08/12/14].
- Igbojiaku, OJ, Harbor, OC & Ross, A. 2013. Compliance with diabetes guidelines at a regional hospital in KwaZulu-Natal, South Africa. *African Journal of Primary Health-care Family Medicine*, 5(1):1–5.
- Janz, NK & Becker, MH. 1984. The health belief model: a decade later. *Health Education Quarterly*, 11(1):1–47.
- Janz, NK, Champion, VL & Stretcher, VJ. 2002. The health belief model. In *Health Behaviour and health education theory, research, and practice*. 3rd edition. San Francisco, CA: Jossey-Bass.
- Johns Hopkins Medicine. 2011a. *Risk factors for diabetes*. Health Source– Consumer Edition. *Diabetes*:6–11.
- Johns Hopkins Medicine. 2011b. *Treatment of diabetes*. Health Source– Consumer Edition. *Diabetes*:18–59.
- Johnson, BT & Eagly, AH. 1989. Effects of involvement on persuasion: a meta-analysis. *Psychological Bulletin*, 106(2):290–314.
- Kale, E & Syed, HR. 2010. Language barriers and the use of interpreters in the public health service: a questionnaire-based survey. *Patient Education and Counselling*, 81:187–191.
- Karliner, LS, Perez-Stable, EJ & Gildengorin, G. 2004. The language divide: the importance of training in the use of interpreters for outpatient practice. *Journal of General Internal Medicine*, 19:175–183.

- Kelloway, EK & Barling, J. 1991. Job characteristics, role stress and mental health. *Journal of Occupational Psychology*, 64:291–304.
- Kettunen, T, Poskiparta, M, Kiuru, P & Kasila, K. 2006. Lifestyle counselling in type-2 diabetes prevention: a case study of a nurse's communication activity to produce change talk. *Communication and Medicine*, 3(1):3–14.
- Kim, MS, Klingke, RS, Sharkey, WF, Park, HE, Smith, DH & Cai, D. 2000. A test of a cultural model of patients' motivation for verbal communication in patient-doctor interactions. *Communication Monographs*, 67(3):262–283.
- Kirkham, SR, Smye, V, Tang, S, Anderson, J, Blue, C, Browne, A, Coles, R, Dyck, I, Henderson, A, Lynam, MJ, Perry, J, Semeniuk, P & Shapera, L. 2002. Rethinking cultural safety while waiting to do fieldwork: methodological implications for nursing research. *Research in Nursing and Health*, 25:222–232.
- Kleinert, S & Horton, R. 2009. South Africa's health: departing for a better future? *The Lancet*, 374:759–760.
- Koh, HK, Brach, C, Harris, LM & Parchman, ML. 2013. A proposed "health literate care model" would constitute a systems approach to improving patients' engagement in care. *Health Affairs*, 32(2):357–367.
- Kreuter, MW & McClure, SM. 2004. The role of culture in health communication. *Annual Review of Public Health*, 25:439–455.
- Kruger, HS, Venter, CS, Vorster, HH & Margetts, BM. 2002. Physical inactivity is the major determinant of obesity in Black women in the North West province, South Africa: the THUSA study. *Nutrition* 18:422–427.
- Kumar, R. 2011. *Research methodology: a step-by-step guide for beginners*. Los Angeles, CA: Sage.
- KwaDukuza Municipality. 2011. *Integrated development plan*. KwaZulu-Natal, South Africa: KwaDukuza Municipality.
- Larkey, LK & Hecht, M. 2010. A model of effects of narrative as culture-centric health promotion. *Journal of Health Communication*, 15:114–135.
- Laugesen, J & Hassanein, K. 2011. Protection motivation theory, task-technology fit and the adoption of personal health records by chronic care patients: the role of educational interventions. *Educational Interventions and PHR Adoptions*, 8(6):1–8.

- Lawton, J, Ahmad, N, Hanna, L, Douglas, M & Hallowell, N. 2006. Diabetes service provision: a qualitative study of the experiences and views of Pakistani and Indian patients with type-2 diabetes. *Diabetic Medicine*, 23:1003–1007.
- Lawton, J, Parry, O, Peel, E & Douglas, M. 2005. Diabetes service provision: a qualitative study of newly diagnosed type-2 diabetes patients' experiences and views. *Diabetic Medicine*, 22:1246–1251.
- Lee, RG & Garvin, T. 2003. Moving from information transfer to information exchange in health and health-care. *Social Science and Medicine*, 56:449–464.
- Legare, F, Stacey, D, Graham, ID, Elwyn, G, Pluye, P, Gagnon, MP, Frosch, D, Harrison, MB, Kryworuchko, J, Pouliot, S & Desroches, S. 2008. Advancing theories, models and measurement for an inter-professional approach to shared decision making in primary care: a study protocol. *BioMedical Central Health Services Research*, 8(2):1–8.
- Levenstein, JH, Brown, JB, Weston, WW, Stewart, M, McCracken, EC & McWhinney, IM. 1989. Patient-centered clinical interviewing. In *Communicating with medical patients*, edited by M Stewart & D Roter. Newbury Park, CA: Sage 107–120.
- Leventhal, H, Weinman, J, Leventhal, EA & Phillips, LA. 2008. Health psychology: the search for pathways between behavior and health. *Annual Review Psychology*, 59:477–505.
- Levitt, NS, Steyn, K, Dave, J & Bradshaw, D. 2011. Chronic non-communicable disease and HIV-AIDS on a collision course: relevance for health-care delivery, particularly in low-resource settings-insights from South Africa. *The American Journal of Clinical Nutrition*, 94:1690–1696.
- Levitt, NS, Steyn, K, Lambert, EV, Reagon, G, Lombard, CJ, Fourie, JM, Rossouw, K & Hoffman, M. 1999. Modifiable risk factors for type-2 diabetes mellitus in peri-urban community in South Africa. *Diabetic Medicine*, 16:946–950.
- Lincoln, YS & Guba, EG. 1985. *Naturalistic inquiry*. Thousand Oaks, CA: Sage.
- Lutfey, KE & Wishner, WJ. 1999. Beyond “compliance” is “adherence”: improving the prospects of diabetes care. *Diabetes Care*, 22(4):635–639.
- Macha, J, Harris, B, Garshong, B, Ataguba, JE, Akazili, J, Kuwawenaruwa, A, & Borghi, J. 2012. Factors influencing the burden of health-care financing and the distribution of health-care benefits in Ghana, Tanzania and South Africa. *Health Policy and Health Planning*, 27:46–54.
- Makoul, G & Clayman, ML. 2006. An integrative model of shared decision making in medical encounters. *Patient Education and Counseling*, 60:301-312.

- Malterud, K. 2001. Qualitative research: standards, challenges, and guidelines. *The Lancet*, 358:483–488.
- Marais, H. 2010. *South Africa pushed to the limit: the political economy of change*. Claremont: UCT Press.
- Marcinkiw, KL. 2003. A goal for nursing education. *Nurse Education Today*, 23:174–182.
- Marks, DF, Murray, M, Evans, B, Willig, C, Woodall, C & Sykes, CM. 2005. *Health psychology theory, research and practice*. 2nd edition. London: Sage.
- Masombuka, S. 2015. What kills our old folk? *The Times* 20, February 7.
- Mason, J. 2002. Qualitative interviewing: asking, listening and interpreting. In *Qualitative research in action*, edited by T May. London: Sage:225–241.
- Mason, J. 2006. Mixing methods in a qualitatively driven way. *Qualitative Research*, 6(1):9–25.
- Mathee, A, Harpham, T, Barnes, B, Swart, A, Naidoo, S, De Wet, T & Becker, P. 2009. Inequality in poverty: the emerging public health-care challenge in Johannesburg. *Development Southern Africa*, 26(5):721–732.
- Mauthner, NS & Doucet, A. 2003. Reflexive accounts and accounts of reflexivity in qualitative data analysis. *Sociology*, 37(3):413-431.
- Mayosi, BM, Flisher, AJ, Lalloo, UG, Sitas, F, Tollman, SM & Bradshaw, D. 2009. Health in South Africa 4: the burden of non-communicable diseases in South Africa. *The Lancet*, 10(1016):1–14.
- Mays, N & Pope, C. 1995. Rigour and qualitative research. *Biomedical Journal*, 311:109–112.
- Mbanya, JCN, Motala, AA, Sobngwi, E, Assah, FK & Enoru, S. 2010. Diabetes in sub-Saharan Africa. *The Lancet*, 375:2254–2266.
- Mduluza, T (Ed). 2007. *A gateway to biomedical research in Africa*. New York, NY: Nova Science.
- Mead, N & Bower, P. 2000a. Measuring patient-centredness: a comparison of three observation-based instruments. *Patient Education and Counselling*, 39:71–80.
- Mead, N & Bower, P. 2000b. Patient-centredness: a conceptual framework and review of the empirical literature. *Social Science and Medicine*, 51:1087–1110.
- Mead, N & Bower, P. 2002. Patient-centred consultations and outcomes in primary care: a review of the literature. *Patient Education and Counselling*, 48:51–61.

- Mechanic, D. 1998. Foreword. In *Partnerships in healthcare transforming relational process*, edited by AL Suchman, RJ Botelho & P Hinton-Walker. New York, NY: University of Rochester Press.
- Meetoo, D. 2008. Chronic diseases: the silent global epidemic. *British Journal of Nursing*, 12(21):1320–1325.
- Meneghini, L, Kennedy, L, Koff, R, Kuritzky, L, Leal, S, Peterson, K & Zamudio, V. 2007. Appropriate advancement of type-2 diabetes therapy. *Current Clinical Practice*, 1(1):19–29.
- Merriam, SB. 1988. *Case study research in education a qualitative approach*. San Francisco, CA: Jossey-Bass.
- Mertig, RG. 2007. *The nurse's guide to teaching diabetes self-management*. New York, NY: Springer.
- Minaire, P. 1992. Disease, illness and health: theoretical models of the disablement process. *World Health Organization Bulletin (WHO)*, 0(3):373–379.
- Mohebi, S, Azadbakht, L, Feizi, A, Sharifirad, G & Kargar, M. 2013. Structural role of perceived benefits and barriers to self-care in patients with diabetes. *Journal of Education and Health Promotion*, 2:37:1–10.
- Mohebi, S, Sharifirad, G, Feizi, A, Botlani, S, Hozori, M & Azadbakht, L. 2013. Can health promotion model constructs predict nutritional behavior among diabetic patients? *International Journal of Research in Medical Sciences*, 18(4):346–359.
- Montano, DE & Kasprzyk, D. 2002. The theory of reasoned action and the theory of planned behavior. In *Health behavior and health education theory, research, and practice*, edited by K Glanz, BK Rimer & FM Lewis. 3rd edition. San Francisco, CA: Jossey-Bass:67–98.
- Mooney, G & Gilson, L. 2009. The economic situation in South Africa and health inequalities. *The Lancet*, 347:858–859.
- Morisky, DE, DeMuth, NM, Field-Fass, M, Green, LW & Levine, DM. 1985. Evaluation of family health education to build social support for long-term control of high blood pressure. *Health Education Quarterly*, 12(1):35–50.
- Morse, MJ, Barrett, M, Mayan, M, Olson, K & Spiers, J. 2002. Verification strategies for establishing reliability and validity in qualitative research. *International Journal of Qualitative Methods*, 1(2):1–19.
- Motala, AA. 2002. Diabetes trends in Africa. *Diabetes/Metabolism Research and Reviews*, 18:14–20.

- Motala, AA, Esterhuizen, T, Gouws, E, Pirie, FJ & Omar, MAK. 2008. Diabetes and other disorders of glycemia in a rural South African community. *Diabetes Care*, 31(9):1783–1788.
- Mshunqane, N, Stewart, AV & Rothberg, AD. 2012. Type-2 diabetes management: Patient knowledge and health-care team perceptions, South Africa. *African Journal of Primary Health-care and Family Medicine*, 4(1):1–7.
- Naidoo, N. 2013. Excellence in diabetes: missed opportunities for optimal care. *South African Journal of Diabetes and Vascular Disease*, 10(4):134–138.
- Narayan, KMV, Gregg, EW, Fagot-Campagna, A, Engelgau, MM & Vinicor, F. 2000. Diabetes: a common, growing, serious, costly, and potentially preventable public health problem. *Elsevier Science*, 50(2):77–84.
- National Association of country and city health officials. 1991. *Assessment protocol for excellence in public health workbook*. Washington, DC.
- National Aging Research Institute. 2006. *What is person-centred health-care? A literature review*. Melbourne: Victorian Government Department of Human Services.
- Ndaba, M. 2014. Acting District Manager, *ILembe District Municipality, KwaDukuza*. 2014. Interview by the author. [Telephonic interview]. 2 April. Pretoria.
- Nelkin, D. 1973. *Methadone maintenance: a technological fix*. New York, NY: George Braziller.
- Netto, G, Bhopal, R, Lederle, N, Khatoon, J & Jackson, A. 2010. How can health promotion interventions be adapted for minority ethnic communities? Five principles for guideline the development of behavioural interventions. *Health Promotion International*, 25(2):248–257.
- Neuman, WL. 2007. *Basics of social research qualitative and quantitative approaches*. 2nd edition. Upper Saddle River, NJ: Pearson.
- Niemeier, BS. 2010. A review of: Prez, MA & Luquis, RR. 2008. *Cultural competence in health education and health promotion*. *Journal of Health Communication*, 15(3):351-353.
- Nightingale, EO, Hannibal, K, Geiger, J, Hartmann, L, Lawrence, R & Spurlock, J. 1990. Apartheid medicine health and human rights in South Africa. *Journal of the American Medical Association*, 264(16):2097–2102.
- Northouse, LL & Northouse, PG. 1985. *Health communication: a handbook for health professionals*. Upper Saddle River, NJ: Prentice-Hall.
- Northouse, LL & Northouse, PG. 1998. *Health communication strategies for health professionals*. 3rd edition. Stamford, CN: Appleton & Lange.

- Novo Nordisk– changing diabetes. [Sa]. *Your personal guide to living with diabetes*. [Booklet]. Johannesburg: Novo Nordisk.
- Novo Nordisk. [Sa]. *Diabetes education: foot care*. [Booklet]. Johannesburg: Novo Nordisk.
- Obrist, B, Tanner, M & Harpham, T. 2003. Engaging anthropology in urban health research: issues and prospects. *Anthropology and Medicine*, 10(3):361–371.
- Oftedal, B, Karlsen, B & Bru, E. 2010. Perceived support from health-care practitioners among adults with type-2 diabetes. *Journal of Advanced Nursing*, 66(7):1500–1509.
- Ong, LML, De Haes, JCJM, Hoos, AM & Lammes, FB. 1995. Doctor-patient communication: a review of the literature. *Social Science Medicine*, 40(7):903–918.
- Oomen, JS, Owen, LJ & Suggs, LS. 1999. Culture counts: why current treatment models fail Hispanic women with type-2 diabetes. *The Diabetes Educator*, 25(2):220–225.
- Osborn, CY & Egede, LE. 2010. Validation of an information-motivation-behavioral skills model for diabetes self-care (IMB-DSC). *Patient Education and Counseling*, 79:49–54.
- Osman, A. 2012. South Asian cultural concepts in diabetes. *Nursing Times*, 108(10):28–32.
- Packard, RM. 1989. *White plague, black labour: tuberculosis and the political economy of health and disease in South Africa*. Pietermaritzburg: University of Natal Press.
- Parikh, NS, Parker, RM, Nurss, JR, Baker, DW & Williams, MV. 1996. Shame and health literacy: the unspoken connection. *Patient Education and Counseling*, 27:33–39.
- Parker, W, Steyn, N, Levitt, NS & Lombard, CL. 2012. Health promotion services for patients having non-communicable diseases: feedback from patients and health-care providers in Cape Town, South Africa. *BioMedical Central Public Health*, 12:1–10.
- Parry, O, Peel, E, Douglas, M & Lawton, J. 2006. Issues of cause and control in patient accounts of type-2 diabetes. *Health Education Research*, 21(1):97–107.
- Patton, MQ. 1999. Enhancing the quality and credibility of qualitative analysis. *Health Services Research*, 34(5):1189–1208.
- Pereira, CMAS, Amaral, CFS, Ribeiro, MMF, Paro, HBMS, Pinto, RMC, Reis, LET, Silva, CHM & Krupat, E. 2013. *Patient Education and Counseling*, 91:37–43.
- Peyrot, M, Rubin, RR, Lauritzen, T, Snoek, FJ, Matthews, DR & Skovlund, SE. 2005. Psychosocial problems and barriers to improved diabetes management: results of the Cross-National Diabetes Attitudes, Wishes and Needs (DAWN) study. *Diabetes Medicine*, 22:1379-1385.

- Pescosolido, BE. 2006. Of pride and prejudice: the role of sociology and social networks in integrating the health sciences. *Journal of Health and Social Behaviour*, 47:189–208.
- Petersen, I. 2000. Comprehensive integrated primary mental health-care for South Africa. Pipedream or possibility? *Social Science and Medicine*, 51:321–334.
- Petty, RE & Brinol, P. 2012. The elaboration likelihood model. In *Handbook of theories of social psychology*, volume 1, edited by PAM Van Lange, AW Kruglanski & ET Higgins. London: Sage:224–245.
- Petty, RE & Cacioppo, JT. 1981. Schematic depiction of the elaboration likelihood model of attitude change. In *Counselling based on process research applying what we know*, edited by GS Tryon. Boston, MA: Allyn & Bacon:298–324.
- Petty, RE & Cacioppo, JT. 1986. *Communication and persuasion central and peripheral routes to attitude change*. New York, NY: Springer.
- Petty, RE & Cacioppo, JT. 1990. Involvement and persuasion: tradition vs integration. *Psychological Bulletin*, 107(3):367–374.
- Petty, RE, Kasmer, JA, Haugtvedt, CP & Cacioppo, JT. 1987. Source and message factors in persuasion: a reply to Stiff's critique of the elaboration likelihood model. *Communication Monographs*, 54(3):233–249.
- Petty, RE & Wegener, DT. 1999. The elaboration likelihood model: current status and controversies. In *Dual-process theories in social psychology*, edited by S Chaiken & Y Trope. New York, NY: Guilford Press:41–72.
- Poggenpoel, M. 1998. Data analysis in qualitative research. In *Research at grass roots, a premier for the caring professions*, edited by AS de Vos. Pretoria: Van Schaik:334–353.
- Polonsky, WH, Anderson, BJ, Lohrer, PA, Welch, G, Jacobson, AM, Aponte, JE & Schwartz, CE. 1995. Assessment of diabetes-related distress. *Diabetes Care*, 18(6):754–760.
- Pooley, CG, Gerrard, C, Hollis, S, Morton, S & Astbury, J. 2001. "Oh it's a wonderful practice...you can talk to them": a qualitative study of patients' and health professionals' views on the management of type 2 diabetes. *Health and Social Care in the Community*, 9(5):318–326.
- Price, JL & Cordell, B. 1994. Cultural diversity and patient teaching. *Journal of Continuing Education in Nursing*, 25(4):163–166.
- Price, RH & Hooijerg, R. 1992. Organizations exit pressures and role stress: impact on mental health. *Journal of Organizational Behavior*, 13:641–651.

- Prochaska, JO & DiClemente, CC. 1984. *The trans-theoretical approach*. Malabar, FL: Krieger.
- Prochaska, JO, Redding, CA & Evers, KE. 2002. The trans-theoretical model and stages of change. In *Health behaviour and health education: theory, research and practice*, edited by K Glanz, BK Rimer & FM Lewis. 3rd edition. San Francisco, CA: Jossey-Bass:99–120.
- Prochaska, JO, Redding, CA & Evers, KE. 2008. The trans-theoretical model and stages of change. In *Health behaviour and health education: theory, research and practice*, edited by K Glanz, BK Rimer & K Viswanath. 4th edition. San Francisco, CA: Jossey-Bass:97–121.
- Punch, K. 1998. *Introduction to social research: quantitative and qualitative approaches*. London: Sage.
- Puoane, T, Steyn, K, Bradshaw, D, Laubscher, R, Fourie, J, Lambert, V & Mbananga, N. 2002. Obesity in South Africa: the South African demographic and health survey. *Obesity Research*, 10(10):1038–1048.
- Rabe, M. 2003. Revisiting “insiders” and “outsiders” as social researchers. *African Sociological Review*, 7(2):149–161.
- Rad, GS, Bakht, LA, Feizi, A & Mohebi, S. 2013. Importance of social support in diabetes care. *Journal of Education and Health Promotion*, 30(2):62.
- Redman, BK. 2001. *The practice of patient education: a case study approach*. 9th edition. St. Louis, MO: Mosby.
- Renzaho, AMN, Mellor, D, Boulton, K & Swinburn, B. 2009. Effectiveness of prevention programmes for obesity and chronic diseases among immigrants to developed countries: a systematic review. *Public Health Nutrition*, 13(3):438–450.
- Reynolds, F. 1996. Models of health and illness. In *Behavioural sciences for health professionals*, edited by V Aitken & H Jellicoe. Philadelphia, PA: Saunders:3–21.
- Richter, M. 2003. Traditional medicines and traditional healers in South Africa. Discussion paper prepared for the Treatment Action Campaign and AIDS Law Project.
- Rimer, BK & Glanz, K. 2005. *Theory at a glance: a guide for health promotion practice*. 2nd edition. Washington: National Cancer Institute.
- Ritchie, J, Lewis, J, McNawghton, Nicholts, C & Ormston, R. 2014. *Qualitative research practice: a guide for social science students and researchers*. 2nd edition. Los Angeles, CA: Sage.

- Rockhill, K. 1987. Gender, language and the politics of literacy. *British Journal of Sociology of Education*, 8(2):153–167.
- Rogers, RW. 1975. A protection motivation theory of fear appeals and attitude change 1. *The Journal of Psychology: Interdisciplinary and Applied*, 91(1):93–114.
- Rogers, RW. 1983. Cognitive and physiological processes in fear-based attitude-change: a revised theory of protection motivation. In *Social psychophysiology: A sourcebook*, edited by J Caccioppo & R Petty. New York: Guilford Press.
- Rose, PR. 2011. *Cultural competency for health administration and public health*. Sudbury, MA: Jones & Bartlett.
- Rosland, AM & Heisler, M. 2012. The impact of family behaviors and communication patterns on chronic outcomes: a systematic review. *Journal of Behavior Medicine*, 35:221–239.
- Ross, H & Mico, P. 1980. *Theory and practice in health education*. Palo Alto, CA: Mayfield.
- Ross, CE, Mirowsky, J & Goldsteen, K. 1990. The impact of the family on health: the decade in review. *Journal of Marriage and the Family*, 52(4):1059–1078.
- Rowley, J. 2002. Using case studies in research. *Management Research News*, 25(1):16–27.
- Rowley, J. 2004. Researching people and organizations. *Library Management*, 25(4):208–214.
- Ryan, J. 2006. Economics, in *Handbook of diabetes management*, edited by D Zazworsky, JN Bolin & VB Gaubeca. New York: Springer:311-316.
- Sandelowski, M. 2001. Focus on research methods: real qualitative researchers do not count: The use of numbers in qualitative research. *Research in Nursing and Health*, 24:230–240.
- Sargent, SE, Sedlak, CA & Martsof, DS. 2005. Cultural competence among nursing students and faculty. *Nurse Education Today*, 25:214–221.
- Schiavo, R. 2014. *Health communication: from theory to practice*. San Francisco, CA: Jossey-Bass.
- Schillinger, D, Piette, J, Grumbach, K, Wang, F, Wilson, C, Daher, C, Leong-Grotz, K, Castro, C & Bindman, AB. 2003. Closing the loop: physician communication with diabetic patients who have low health literacy. *Archives of Internal Medicine*, 163:83–90.

- Seekings, J. 2002. The broader importance of welfare reform in South Africa. *Social Dynamics*, 28(2):1–38.
- Sekar, R & Mythreyee, M. 2012. Tuberculosis, HIV/AIDS and diabetes: Is it time to think together? *Journal of Medical Microbiology and Diagnosis*, 1(1):1–4.
- Sharma, M & Romas, JA. 2012. *Theoretical foundations of health education and health promotion*. 2nd edition. Sudbury, MA: Jones & Bartlett.
- Shilling, C. 2002. Culture, the “sick role” and the consumption of health. *British Journal of Sociology*, 53(4):621–638.
- Shillitoe, RW. 1988. *Psychology and diabetes psychosocial factors in management and control*. London: Chapman & Hall.
- Sibiya, MN & Gwele, NS. 2013. A model for the integration of primary health-care services in the province of KwaZulu-Natal, South Africa. *Journal of Nursing Management*, 21:387–395.
- Silverman, D. 2010. *Doing qualitative research*. 3rd edition. London: Sage.
- Silverman, J, Kurtz, S & Draper, J. 2005. *Skills for communicating with patients*. 2nd edition. Milton Keynes, UK: Radcliffe Medical.
- Simons-Morton, BG, McLeroy, KR & Wendel, ML. 2012. *Behaviour theory in health promotion practice and research*. Sudbury, MA: Jones & Barlett.
- Simons-Morton, BG, Greene, WH & Gottlieb, NH. 1995. *Introduction to health education and health promotion*. 2nd edition. Prospect Heights, IL: Waveland.
- Skeggs, B. 2002. Techniques for telling the reflexive self. In *Qualitative research in action*, edited by T May. London: Sage.
- Snoek, FJ, Pouwer, F, Welch, GW & Polonsky, WH. 2000. Diabetes-related emotional distress in Dutch and US diabetic patients. *Diabetes Care*, 23(9):1035–1309.
- Sobngwi, E, Mauvais-Jarvis, F, Vexiau, P, Mbanya, JC & Gautier, JF. 2001. Diabetes in Africans. *Diabetes Metabolism*, 27:628–634.
- Sorensen, K, Van den Broucke, S, Fullam, J, Doyle, G, Pelikan, J, Slonska, Z & Brand, H. 2012. Health literacy and public health: a systematic review and integration of definitions and models. *Biomedical Central Public Health*, 12:1–13.
- South Africa, 1996. Constitution of the Republic of South Africa Act 108 of 1996, Chapter 2, the Bill of Rights. Pretoria: Government Printer.

- South Africa. Department of Health. 2007. *A policy on quality in health-care for South Africa*. Pretoria. Available at: http://www.cohasa.co.za/sites/cohasa.co.za/files/publication_pdfs/qhc.pdf. [Accessed 20/05/2014].
- Stake, R. 2000. Case studies. In *Doing qualitative research*, edited by D Silverman. 3rd edition. London: Sage:39.
- Starr, S, Shattell & MM, Gonzales, C. 2011. Do nurse educators feel competent to teach cultural competency concepts? *Teaching and Learning in Nursing*, 6:84–88.
- Statistics South Africa. 2014. *Mid-year population estimates, 31 July 2014*. Pretoria: Statistics South Africa.
- Statistics South Africa. 2015. *Patterns of morbidity and mortality among older persons in South Africa, 2013*. Pretoria: Statistics South Africa.
- Stewart, M. 2001. Towards a global definition of patient-centred care. *British Medical Journal*, 322:444–445.
- Steyn, K & Levitt, NS. 2006. Health services research in South Africa for chronic diseases of lifestyle. In *Chronic diseases of lifestyle in South Africa: 1995–2005*, edited by K Steyn, J Fourie & N Temple. Cape Town: Medical Research Council:226–248.
- Stiff, JB. 1986. Cognitive processing of persuasive message cues: a meta-analytical review of the effects of supporting information on attitudes. *Communication Monographs*, 53(1):75–89.
- Street, LS Jr & Epstein, RM. 2008. Key Interpersonal functions and health outcomes: lessons from theory and research on clinician-patient communication. In *Health behaviour and health education: theory, research and practice*, edited by K Glanz, BK Rimer & K Viswanath. 4th edition. San Francisco CA: Jossey-Bass:237–267.
- Strole, L, Langner, TS, Micheal, MK & Rennie, TA. 1962. *Mental health in the metropolis*. New York, NY: McGraw-Hill.
- Suchman, AL. 1998. Control and relation: two foundational values and their consequences. In *Partnerships in healthcare: transforming relational process*, edited by RJ Suchman, P Botelho & P Hinton-Walker. Rochester, NY: University of Rochester Press:9–49.
- Summerton, JV. 2006. The organisation and infrastructure of the African traditional healing system: reflections from a sub-district of South Africa. *African Studies*, 65(2):297-319.
- Taylor, B. 2013. *Case study research*. New York, NY: Routledge.

- Taylor, HA, Faden & RR, Kass. 2010. Ethics of public health research. In *Epidemiology and demography in public health*, edited by J Killewo, K Heggenhougen & SR Quah San Diego, CA: Academic Press.
- Tesch, R. 1990. Eight steps for data analysis. In *Data analysis in qualitative research*, edited by AS De Vos. Pretoria: Van Schaik.
- Thorne, S & Paterson, B. 1998. Shifting images of chronic illness. *Journal of Nursing Scholarship*, 30(2):173–178.
- Tokuhata, GK, Miller, W, Digon, E & Hartman, T. 1975. Diabetes mellitus: an underestimated public health problem. *Pergamon Press* 28:23–35.
- Trochim, WMK. 2006. Unit of analysis. [O]. Available at: <http://www.socialresearchmethods.net/kb/unitanal.php> [Accessed 02/03/2015].
- Truong, M, Paradies, Y & Priest, N. 2014. Interventions to improve cultural competency in health-care: a systematic review of reviews. *BioMedical Central Health Services Research*, 14:1–14.
- Twaddle, AC. 1969. Health decisions and sick role variations: an exploration. *Journal of Health and Social Behaviour*, 10(2):105–115.
- Updegraff, JA, Sherman, DK, Luyster, FS & Mann, TL. 2007. The effects of message quality and congruency on perceptions of tailored health communications. *Journal of Experimental Social Psychology*, 43:249–257.
- Van de Sande, MAB, Walraven, GEL, Bailey, R, Rowley, JTF, Banya, WAS, Nyan, OA, Faal, H, Ceesay, SM, Milligan, PJM & McAdam, KPW. 1999. Is there a role for glycosuria testing in Sub-Saharan Africa? *Tropical Medicine and International Health*, 4(7):506–513.
- Villagran, M, Goldsmith, J & Wittenberg-Lyles, E & Baldwin, P. 2010. Creating comfort: a communication-based model from breaking bad news. *Communication Education*, 59(3):220–234.
- Wade, DT & Halligan, PW. 2004. Do biomedical models of illness make for good healthcare systems? *British Medical Journal*, 329:1398–1401.
- Wagner, EH, Austin, BT, Davis, C, Hindmarsh, M, Schaefer, J & Bonomi, A. 2001. Improving chronic illness care: translating evidence into action. *Health Affairs*, 20(6):64–78.
- Walker, ARP. 1995. Nutrition-related diseases in Southern Africa: with special reference to urban and African populations in transition. *Nutrition Research*, 15(7):1053–1094.

- Walker, R & Rodgers, J. 2010. *Diabetes: a practical guide to managing your health*. London: Dorling Kindersley.
- Wand, H & Ramjee, G. 2013. High prevalence of obesity among women who enrolled in HIV prevention trials in KwaZulu-Natal, South Africa: healthy diet and life style messages should be integrated into HIV prevention programmes. *Biomedical Central Public Health* 13:159-163.
- Waters, E, Gibbs, L, Riggs, E, Priest, N, Renzaho, A & Kulkens, M. 2008. Cultural competence in public health. In *International Encyclopaedia of Public Health*. Amsterdam: Elsevier/Academic Press:38–44.
- Weinstein, ND & Sandman, PM. 2002. The precaution adoption process model. In *Health behavior and health education theory, research and practice*, edited by K Glanz, BK Rimer & FM Lewis. 3rd edition. San Francisco, CA: Jossey-Bass:121–143.
- Weinstein, ND, Sandman, PM & Blalock, SJ. 2008. The precaution adoption process model in health behaviour and health education. In *Health behavior and health education*, edited K Glanz, BK Rimer & K Viswanath. 4th edition. San Francisco, CA: Jossey-Bass:123–147.
- Wens, J, Vermeire, E, Van Royen, P, Sabbe, B & Denekens, J. 2005. GPs' perspectives of type-2 diabetes patients' adherence to treatment: a qualitative analysis of barriers and solutions. *BMC Family Practice*, 6(20):1–10.
- West, R. 2005. Time for change: putting the trans-theoretical (stages of change) model to rest. *Addiction*, 100:1036–1039.
- Weston WW, Brown, JB & Stewart, MA. 1989. Patient-centered interviewing, part 1: understanding patients' experiences. *Canadian Family Physician*, 35:147–151.
- Williamson, M & Harrison, L. 2010. Providing culturally appropriate care: a literature review. *International Journal of Nursing Studies*, 47:761–769.
- Wilson, C, Alam, R, Latif, S, Knighting, K, Williamson, S & Beaver, K. 2012. Patient access to healthcare services and optimisation of self-management for ethnic minority populations living with diabetes: A systematic review. *Health and Social Care in the Community*, 20(1):1–19.
- World Health Organization (WHO). 2011. Media Centre: diabetes fact sheet. [Online]. Available at: <http://who.int/mediacentre/factsheets/fs312/en/> [Accessed 2012/12/11].
- World Health Organization (WHO). 2014. Media Centre: diabetes fact sheet. [Online]. Available at: <http://who.int/mediacentre/factsheets/fs312/en/> [Accessed 2012/12/11].

- Wynia, MK & Osborn, CY. 2010. Health literacy and communication quality in health-care organizations. *Journal of Health Communications*, 15:102–115.
- Yach, D & Seager, J. 1991. *Urbanisation and its implications for health. MRC report to the President's Council*. Tygerberg: Medical Research Council (MRC).
- Yin, RK. 1999. Enhancing the quality of case studies in health services research. *Health Services Research*, 34(5):1209–1224.
- Yin, RK. 2014. *Case study research design and methods*. 5th edition. Irvine, CA: Sage.
- Young, Z & Pemba, L. 2012. Novo Nordisk: Roche Diabetes update symposium 24 August. *South African Journal of Diabetes*:41–42.
- Zimmet, P, Alberti, KGM & Shaw, J. 2001. Global and societal implications of the diabetes epidemic. *Nature*, 414:782–787.
- Zimmet, PZ. 1999. Diabetes epidemiology as a tool to trigger diabetes research and care. *Diabetologia*, 42:499–518.

APPENDIX B: LETTER OF APPROVAL FOR RESEARCH ILEMBE HEALTH DISTRICT MUNICIPALITY FROM MANAGER: MS S DUBE



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

ILEMBE HEALTH DISTRICT/DISTRICT MANAGERS
OFFICE
Private Bag x 10620
KwaDukuza, 4450
36/40 Chief Albert Luthuli
OK Mall, First Floor, KwaDukuza, 4450
Tel.: 032 437 3500 Fax: 032 551 1592/425
Email.:sibongile.dube@kznhealth.gov.za
www.kznhealth.gov.za

Reference: DM2012/02/2480
Enq: Ms. S Dube
Date: 27 February 2012

TO: Principal Investigator
Department of Sociology
University of South Africa (UNISA)

Attention: Ms. Sabihah Moola: Lecturer: Department of Communication Science

**RE: PERMISSION TO CONDUCT A PHD RESEARCH ON AT STANGER
PROVINCIAL HOSPITAL – DIABETIC CLINIC**

I have pleasure in informing you that permission has been granted to you by the District Office to conduct your PHD research at Stanger Provincial Hospital – Diabetic Clinic.

Please note the following:

1. Please ensure that you adhere to all the policies, procedures, protocols and guidelines of the Department of Health with regards to this research.
2. This study will commence once this Office has received confirmation from the Provincial Health Research Committee in the KZN Department of Health.
3. Please ensure this Office is informed before you commence your research.
4. The District Office / Facilities will not provide any resources for this research.
5. You will be expected to provide feedback on your findings to the District Office and the hospitals selected for the research.

Thank you,


Ms. S Dube
District Manager
Ilembe Health District

APPENDIX C: LETTER OF APPROVAL FROM DEPARTMENT OF HEALTH, KWAZULU-NATAL



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Health Research & Knowledge Management sub-component
10 – 103 Natalia Building, 330 Langalibalele Street
Private Bag x9051
Pietermaritzburg
3200
Tel.: 033 – 3953189
Fax.: 033 – 394 3782
Email.: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

Reference : HRKM 43/12
Enquiries : Mr X Xaba
Tel : 033 – 395 2805

Dear Ms S. Moola

Subject: Approval of a Research Proposal

1. The research proposal titled was reviewed by the KwaZulu-Natal Department of Health.

The proposal is hereby **approved** for research to be undertaken at Stanger Hospital.
Data collection is scheduled for 3 months.

2. You are requested to take note of the following:
 - a. Make the necessary arrangement with the identified facility before commencing with your research project.
 - b. Provide an interim progress report and final report (electronic and hard copies) when your research is complete.
3. Your final report must be posted to **HEALTH RESEARCH AND KNOWLEDGE MANAGEMENT, 10-102, PRIVATE BAG X9051, PIETERMARITZBURG, 3200** and e-mail an electronic copy to hrkm@kznhealth.gov.za

For any additional information please contact Mr X. Xaba on 033-395 2805.

Yours Sincerely


Dr E Lutge
Chairperson, Health Research Committee
KwaZulu-Natal Department of Health
Date: 28/03/2012

uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

APPENDIX D: SEMI-STRUCTURED INTERVIEW SCHEDULE: HEALTH-CARE PROVIDER/PROFESSIONAL

- 1 Medical professional 1:
 - 2 Occupation of medical professional
 - 3 Gender
 - 4 Age
 - 5 Ethnicity/Language
-
- 6 How does the patient interact with you for treatment and diagnosis?
 - 7 How long have you been treating diabetic patients?
 - 8 Do you feel you are experienced enough in this field?
 - 9 Do you like attending to DM patients?
 - 10 In your opinion, do patients understand diabetes as a disease? Why do you say so?
 - 11 In your opinion, do patients understand their treatment options? Why do you say so?
 - 12 I am going to give a brief explanation of six theoretical stages for diagnosis and treatment. At each stage, please tell me how you would communicate with a patient at that stage.
 - i. Pre-contemplation stage
 - ii. Contemplation stage
 - iii. Action stage
 - iv. Maintenance stage
 - v. Relapse stage
 - vi. Termination stage
 - 13 Typically, how does a patient react to a DM diagnosis?
 - 14 What in your opinion are the major barriers to treatment adherence in DM patients?
 - 15 How do you persuade a DM patient to adhere to treatment?
 - 16 Do DM patients grasp the severity of their illness?
 - 17 Do the educational levels of DM patients affect their treatment adherence?
 - 18 Do you tailor individual DM treatment plans to cater for unique individual patient needs?
 - 19 Are you able to consider each DM patient's **ideas, expectations and feelings** towards diabetes during your interaction?
 - 20 What in your opinion are the major communication problems you experience with DM patients?
 - 21 Do you operate as part of a team at the clinic in terms of diabetic patients?
Please explain your role in the team.
 - 22 When working as part of a team, do you experience
 - i. Rolestress?
 - ii. Insufficient interdisciplinary understanding?
 - iii. Autonomy struggles?
 - iv. Communication breakdowns in the team?
 - 23 If you could change the communication dynamics in your health-care teams, what would you change? Why?

APPENDIX E: SEMI-STRUCTURED INTERVIEW SCHEDULE: PATIENT

- 1 Age:
- 2 Gender:
- 3 Ethnicity/Language: Diabetes diagnosis:
- 4 How would you rate your own understanding of diabetes?
- 5 To what extent have health-care professionals assisted you to understand the disease?
- 6 What is your major source of information about diabetes?
- 7 Do you understand the treatment options available to you?
- 8 Did the health-care professional communicate treatment options to you?
- 9 Do you feel satisfied that all your questions have been answered regarding treatment?
- 10 Please tell me about each HCP that attends to you at the clinic. How do you feel about them? Do they communicate effectively? Why do you say so?
- 11 I am going to give a brief explanation of six stages for diagnosis and treatment. At each stage, please tell me how you felt at each stage.
 - i. **Pre-contemplation stage:** When you were first diagnosed, were you afraid to confront your illness?
 - ii. **Contemplation stage:** Upon receiving the diagnosis, did you understand what was communicated to you? Did the HCP reassure you about your illness? How? Did you understand the communication?
 - iii. **Action stage:** Did you change your behaviour after diagnosis? Do you feel confident about treatment adherence? Did the HCP help you achieve such confidence?
 - iv. **Maintenance stage:** Which lifestyle changes did you make? Were you ever tempted to go against the HCP's advice?
 - v. **Relapse stage:** Did you ever stop your treatment? Did you ever feel confused about the HCP's communication? Would you tell the HCP if you have relapsed?
 - vi. **Termination stage:** Would you regard yourself as fully adherent?

- 12 Does the HCP encourage you to adhere and change your lifestyle?
- 13 Do you find the HCP's communication helpful?
- 14 Are there any problems in your communication with the HCP? What are they?
- 15 Explain to me how you would describe yourself as a DM patient?
- 16 Who (at the clinic) would you ask for help? Why?
- 17 Does the HCP take your concerns into consideration?
- 18 Are you involved in your treatment decisions?
- 19 Do you ever feel "powerless" in your communication with the HCP? Please explain.
- 20 Do you feel the HCP asks you enough questions about your own experiences and management of your disease?
- 21 Do you ever feel that the HCP is too preoccupied with getting the job done to consider all of your concerns about your disease?
- 22 Does the HCP use medical jargon that you do not understand?
- 23 If you could change ONE thing about the communication with your HCP about your disease, what would you change? Why?

APPENDIX F: OBSERVATIONAL SCHEDULE

- How are patients received at the clinic at a general level? Does the HCP greet the patient? How is the patient addressed? Is a trusting relationship created?
- How did interactive communication occur at the clinic: In the HCP-patient relationship (that is nurse, medical doctor and patient)?
- How are patients treated at the clinic?
- How do patient consultations occur? Who takes the lead at the clinic (tone, eye- contact, medical jargon used)?
- What is the communication process that occurs at the clinic? (Is diabetes discussed as an illness; when and how is adherence maintained/monitored?)
- Teamwork: Is there teamwork, do HCPs consult with each other for help or patient advice; how is the HCP-HCP relationship depicted at the clinic (see theoretical barriers for HCP-HCP relationships)?
- How are patients dealt with? (Note: patient-centred care)
- What is the team spirit at the clinic?
- What is the patient spirit upon receiving care at the clinic? (Are patients engaged/included in medical aspects/decisions?)
- How do the HCPs deal with each other's job descriptions?
- Is the clinic a helpful and happy environment?
- How is communication depicted at the clinic (clinic structure, environment, visual communication)?
- How is patient care depicted? (Note: To analyse this over many patient interactive sessions) –(Patient-centred care theory as well as patient involvement in his/her individual care.)
- How is patient education provided? (Note: To view and analyse interactive communication sessions/educational sessions. Also what documents (forms)/informative material are used.)
- How are newly diagnosed patients treated (for interest sake view this)?
- What do the nurses do during free time? Is there free time?
- Do the nurses communicate with each other in a friendly manner?
- Do the nurses help each other? (Note: Language barriers for communicative methods).

- How does the medical doctor communicate with the nurses? (Persuasive communication).
- How are student nurses educated on diabetes?
- Observe verbal and non-verbal communication (For interest sake: body language, facial expressions, general attitude).
- Are question sessions held during the HCP-patient interactive sessions?
- How are sessions concluded? (Note: TTM/stages of change theory – analyse different stages).

APPENDIX G: INFORMED CONSENT FORM

Dear Participant

Hello, my name is Sabihah Moola, and I am a PhD student at the University of South Africa (Unisa). You are invited to be part of a study entitled:

Communication dynamics in producing effective patient care: a case study at Stanger Hospital's diabetes clinic in KwaZulu-Natal, South Africa

First, however, I want to tell you exactly what participation in this study would entail. Note that participation is **completely voluntary**, which means that you can refuse to take part or withdraw your participation at any time without suffering any penalties. There are **no incentives** paid for participation and there may be no direct benefits to you; however, your participation will help us with information that might benefit other patients at the hospital who receive treatment at the diabetes clinic. Please note that all information you provide in this study is treated as **highly confidential**. Your name will only be known to me and the nurse, but in writing up the data, personal identity information will be removed. This means that **your true identity will remain a secret** and your name and true identity will not be revealed to anyone else or be made public when the data is written up. The only place your name will be recorded is on this information sheet and informed consent form. These sheets are kept in a locked cabinet and your name will never be used in any of the research outputs.

If you agree to participate in the study I will conduct a brief personal interview with you and ask you a few questions about your experiences here at the clinic. This personal interview will be tape-recorded. All my notes, tape recordings and transcriptions will be treated as extremely confidential materials and I will keep them securely locked away.

If you have questions about the study you may ask them now or you can call: *****.

If you have no further questions and agree to participate in this study, then I will ask you to sign this form, stating that I, the interviewer, have informed you of your rights as a participant and that you have agreed to participate in the study. This is the only

place where your name will be entered. If you do not wish to sign your name, you may simply mark the space with an "X".

Volunteer's statement

THE STUDY (INCLUDING THE OBSERVATIONS AND THE INTERVIEW) HAS BEEN EXPLAINED TO ME. I HAVE BEEN GIVEN A CHANCE TO ASK ANY QUESTIONS I MAY HAVE AND I AM CONTENT WITH THE ANSWERS TO ALL OF MY QUESTIONS.

I ALSO KNOW THAT:

- 1 MY RECORDS WILL BE KEPT PRIVATE AND CONFIDENTIAL.
- 2 I CAN CHOOSE NOT TAKE PART IN THE STUDY, NOT TO ANSWER CERTAIN QUESTIONS, OR TO STOP AT ANY TIME.
- 3 IF I REFUSE TO BE INTERVIEWED, IT WILL NOT AFFECT MY MEDICAL CARE AT THE CLINIC.
- 4 I GIVE CONSENT THAT THE PERSONAL INTERVIEW CAN BE TAPE-RECORDED.
- 5 I UNDERSTAND THAT THE INFORMATION COLLECTED FROM VARIOUS VOLUNTEERS WILL BE ANALYSED AND REPORTED ON AS FINDINGS OF THE STUDY, BUT THAT ALL IDENTIFYING DETAILS THAT LEAD BACK TO ME WILL NOT BE DISCLOSED.
- 6 I UNDERSTAND THAT THE INFORMATION COLLECTED THROUGH THIS STUDY WILL BE WRITTEN UP AS A RESEARCH REPORT AND AS A DISSERTATION, AND I GIVE CONSENT THAT MY RESPONSES MAY BE QUOTED AS LONG AS MY TRUE NAME AND IDENTITY ARE NOT REVEALED.

Date Name of volunteer

Signature or mark

Date Name of witness

Signature of witness

APPENDIX H: ETHICAL CLEARANCE LETTER FROM UNISA (UNIVERSITY OF SOUTH AFRICA)

APPENDIX J: Ethical clearance letter from UNISA (University Of South Africa)



Department of Sociology
College of Human Sciences
3 November 2011

Proposed title: A sociological study of communication dynamics in effective patient care at a diabetes clinic in South Africa

Principal Investigator: Sabinah Moola (student number 42881891)

Reviewed and processed as: Class approval (see paragraph 10.7 of the UNISA GU defines for Ethics Review)

Approval status recommended by reviewers: Approved

The Higher Degrees Committee of the Department of Sociology in the College of Human Sciences at the University of South Africa has reviewed the proposal and considers the methodological, technical and ethical aspects of the proposal to be appropriate to the tasks proposed. Approval is hereby granted for Ms. Moola to proceed with the study in strict accordance with the approved proposal and the ethics policy of the University of South Africa.

In addition, the candidate should heed the following guidelines:

- To only start this research study after obtaining informed consent from the interviewees and from the management of the hospital's diabetic clinic
- To carry out the research according to good research practice and in an ethical manner
- To maintain the confidentiality of all data collected from or about research participants and maintain security procedures for the protection of privacy
- To notify the committee in writing immediately if any adverse event occurs.

Kind regards

Gretchen de Plessis

Prof Gretchen de Plessis
Department of Sociology
Tel 012 429 6507
E-mail Dplessis@unisa.ac.za



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STANGER HOSPITAL DIABETES UNIT

D

KZ

Surname: _____

Names: _____

Date of birth: _____ Age: _____ Gender: _____

Date of entry: _____ Referral source: _____

Diabetes classification: _____

Date of diagnosis: _____ Age at diagnosis: _____

Mode of Presentation: _____

Insulin therapy: (date of commencement) _____

Complications:

Date of first diagnosis:

1. Retinopathy – background: _____

2. Retinopathy - proliferative: _____ Names: _____

3. Laser therapy: _____

4. Cataract: _____

5. Microalbuminuria: _____

6. Proteinuria: _____

7. GFR < 60 ml/min/m²: _____

Neuropathy: (specify) _____

9. Ischaemic heart disease: _____

10. Peripheral vascular disease: _____

11. Cerebrovascular disease: _____

12. Foot ulcer: _____

13. Hypertension: _____

14. Dyslipidaemia: _____

Additional diagnoses: 1. _____
2. _____
3. _____
4. _____
5. _____

Obstetric history: Gravida _____ Para _____ Mode of delivery: _____
Birth weights: _____
Gestational diabetes: _____
PIH: _____
Other: _____

Gynaecologic history: Menarche: _____ Menopause: _____
Menstrual cycle: _____
Other: _____

Puberty: Age of onset: _____ Normal development: Yes No
Specify: _____

Family history:

Father: _____

Mother: _____

Brothers: _____

Sisters: _____

Offspring: _____

Other: _____

Cigarette smoking: _____

Alcohol consumption: _____

Diabetes Record Book

Week Beginning:

Day	Insulin Injections			Monitoring Blood						Remarks						
	Type Of Insulin	Units Given		Breakfast	Lunch	Dinner	Before Bed	Before Breakfast	After Breakfast		Before Lunch	After Lunch	Before Dinner	After Dinner	Before Supper or Bed	Over Night
Mon		Pre Breakfast	Dinner													
Tue																
Wed																
Thur																
Fri																
Sat																
Sun																

APPENDIX J: EDUCATIONAL DIABETES MATERIAL USED AT STANGER HOSPITAL'S DIABETES CLINIC FOR PATIENT CARE

STANGER HOSPITAL: DIETETICS DEPARTMENT
DIABETES AND HYPERTENSION EATING PLAN

Food Group	Foods Allowed	Have in Moderation (not more than twice a week)	Foods to avoid Hypertensive's can take small amounts of sugar
Starch Group 2- 3 slices of bread/day (2 per meal) 1 cup starch at a time	Low GI Brown Bread, low GI whole wheat bread, high fiber cereal, meali pap, whole wheat rusks, whole wheat biscuits	Potatoes with skin. Sweet potatoes, Baked Potatoe chips (once a week)	White bread, refined biscuits, cakes, sweets, pastries (Pies, Pizza, Roti), tarts
Fruit group Handful, More green/sour > 2/day	All fresh fruit with skin	Dried fruit, fruit rolls, Yellow or red pears or apples	Sugared dried fruit, Banana with black spots
Vegetable Group 1-1½ cup/ meal >2/day	All fresh and frozen vegetables (eat with skin)	Avocado, vegetables with margarine, vegetables in a tin	Fried vegetables
Protein Group 2 match box size at a time	Lean meat (mutton, Beef), chicken, fish, legumes (dried beans, peas, lentils)	Tinned fish, baked beans, sausages, polony, Vienna, bacon, tongue, tripe, livers, flame grilled take aways e.g. Nandos)	REMOVE SKIN BEFORE COOKING, deep fried chicken Only 3 boiled eggs per week, 1 egg a day
Milk Group 2 cups per day	Low fat milk, or fat free milk, low fat products e.g. low fat mass, low fat cheese and low fat yoghurt	Low fat ice cream	Condensed milk, milk shakes, ice cream
Fat Group	Light margarine e.g. flora light, canola oil, olive oil. Use margarine in a tub	Light Mayonnaise	Hard brick margarine in a paper, normal butter, fish oil
Beverages 1-2 cups per day	Rooibos (Bush Tea only), ½ cup 100% fruit juice with ½ cup water, brookes low cal, TAB	Diet cokes with caffeine e.g. coke zero, sprite zero	Fizzy Drinks, concentrated juice (Oros, halls, daily's, 7 up) pure fruit juice
Miscellaneous	Pepper, herbs, garlic, vinegar, lemon juice, mustard powder, sweeteners	Curry, knorrox soup and stock, light jelly, diabetic jam	Sugar, sweets, chocolates, jam, marmalade, syrup, jelly

STANGER HOSPITAL: DIETETICS DEPARTMENT

Indlela Yokudla uma unesifo sikashukela noma I BP

Food Group	Ukudla Okuvumelekile	Okuvumeleke kabili ngeviki	Ukudla okungavumelekanga
Isitashi 2 yezilayi zezikwa ngosuku ngesikhathi esisodwa 1 yenkomishi yesitashi	Isikwa isibrown, noma esinokolo, ipapa elinsundu, amakhekhe anokolo, oats, umdoko wamabele, ama weet-bix, all bran flakes	Izambane elinesikhumba noma ubhatata onesikhumba sakhona	Isikwa esimhlophe, amakhekhe amhlophe, amaswidi, o-pizza
Izithelo (ama-fruit) Kala ngesandla > 2/day	Zonke izithelo (idla namakhasi akhona)	Izithelo ezomisiwe	Ubhanana onemibala eminyama
Izitshalo 1-1½, yenkomishi ngesikhathi esisodwa >2/day	Izitshalo ezifreshi kuphela (idla namakhasi akhona)	Ukotapheya	Izitshalo ezithosiwe
Inyama Qhathanisa nesandla sakho	Inyama noma inkukhu engenamafutha, inhanzi engenamafutha, ubhantsisi onsundu, I nandos	Inhlanzi esethinini, ubhontshisi osethinini, sausages, upholoni, iviyana, ubhekeni, ulimi lwenkomo, inyama yangaphakathi, isibindi, amaqanda	Isikhumba senkukhu sikhishwa ngaphambi kokuphekwa, KFC, amaqanda amathathu ngeviki
Ubisi 2 wezinkomishi ngosuku	Konke ukudla okweziwa ngobisi kumele kube namafutha amancane (low fat)		Condensed milk, milk shakes, ice cream
Amafutha	Ibhotela elinamafutha amancane. e.g. flora light, canola oil, olive oil . Sebenzisa elisesitsheni ibhotela		Amafutha amaningi, ibhotela elisephepheni
Okuphuzwayo 1-2 wezinkomishi ngosuku	Bush Tea kuphela, ^½ wenkomishi we 100% ujusto uhlangene no ^½ wenkomishi lamanzi, noma I brookes low cal, TAB	Ama dilinki ane khafeni e.g. coke zero, sprite zero	Udilinki onoshukela, ujusti ohlanganiswa namanzi (oros, halls, 7 up, daily's) pure fruit juice
Okokupheka	Pepper, herbs, garlic, vinegar, ulamula, mustard powder	Ocurry, I knorrox soup, noma I stock, usawoti	Ushukela, amaswidi, ujelly noma I syrup

Ungaphindi isitashi esisodwa ngosuku olulodwa..... 2-3 amalitha amanzi ngosuku

DIABETES EDUCATION Foot Care

Avoid long boots
Gwema amabhuthisi



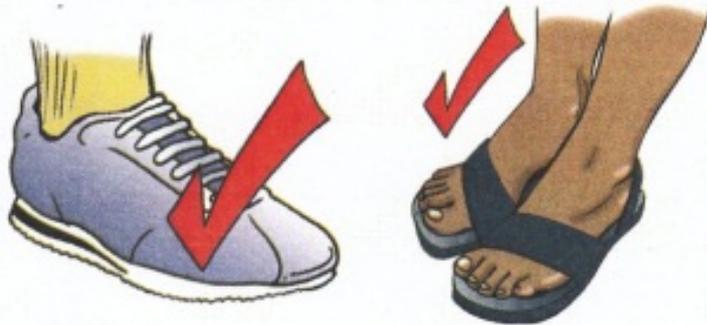
Avoid tight socks
Gwema amasokisi akumpintshayo



Avoid high shoes with no support
Gwema izicathulo eziphakeme futhi ezicijile



Wear well fitting flat shoes
Qgoka izicathulo ezimfushane ezikulingana kahle



Avoid extreme heat
Ungazithinti izinto ezishisa ngokweqile



Never put your feet near open heat
Ungothi eduze kakhulu nomlilo



Never walk barefoot
Ungahambi ungaziqgokile izicathulo



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Tel: (011) 202 0500 Fax: (011) 807 7989 Toll-Free 0800-11-6941 Website: www.novo.co.za

DIABETES EDUCATION Foot Care

HYGIENE/UKUHLANZEKA



Always keep your feet clean
Gcina izinyawo zihlanzekile



Dry feet well especially in between your toes
Sulisisa kome phakathi kwezinzwane

HOME CARE/UKUNAKEKELA EKHAYA



Check under your feet regularly
Hlola ngaphansi kwezinyawo ngezikhathi ezijwayelekile



If you can't see under your feet check with a mirror...
Uma wehluleka sebenzisa isibuko...



... or get someone to check for you
...noma uthole umuntu ozokusiza

MEDICAL CARE/UKUNAKEKELA NGOKWEZEMPILO



Never cut corns or use sharp objects on your feet
Ungawasiki amakhona futhi ungasebenzisi izinto ezibukhali ezinyaweni



Get help from the clinic or doctor
Thola usizo emtholampilo noma kudokotela

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HEALTHY EATING

DIABETES EDUCATION

Eat at regular intervals i.e. breakfast, lunch, supper



Trim off excess fat



Eat smaller portions



Foods to Avoid

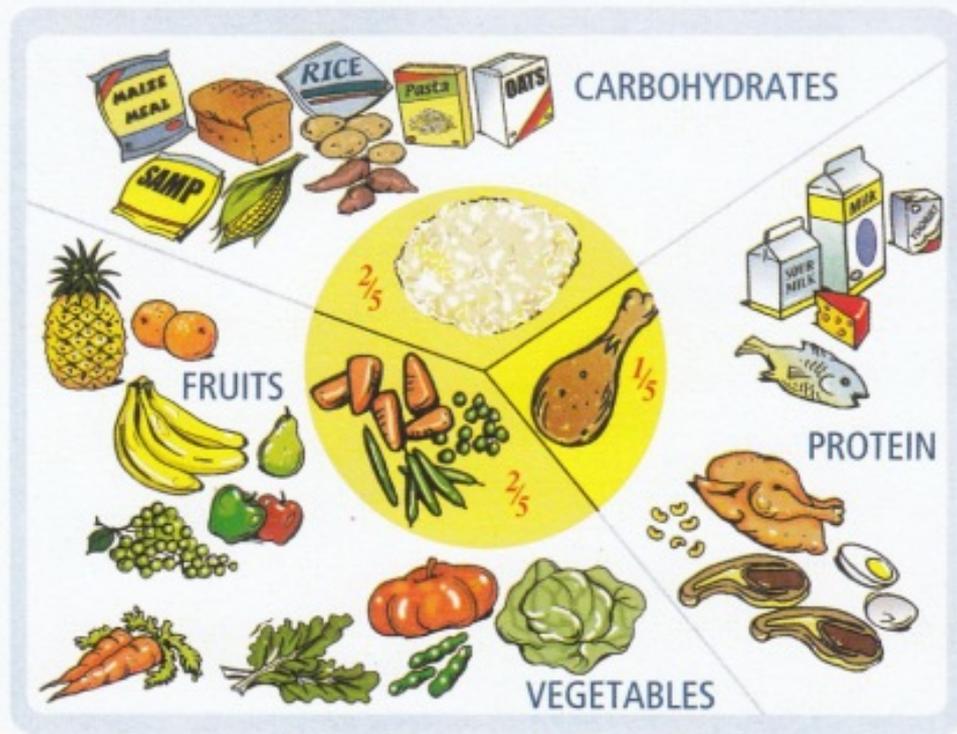
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PLANNING YOUR MEAL

DIABETES EDUCATION

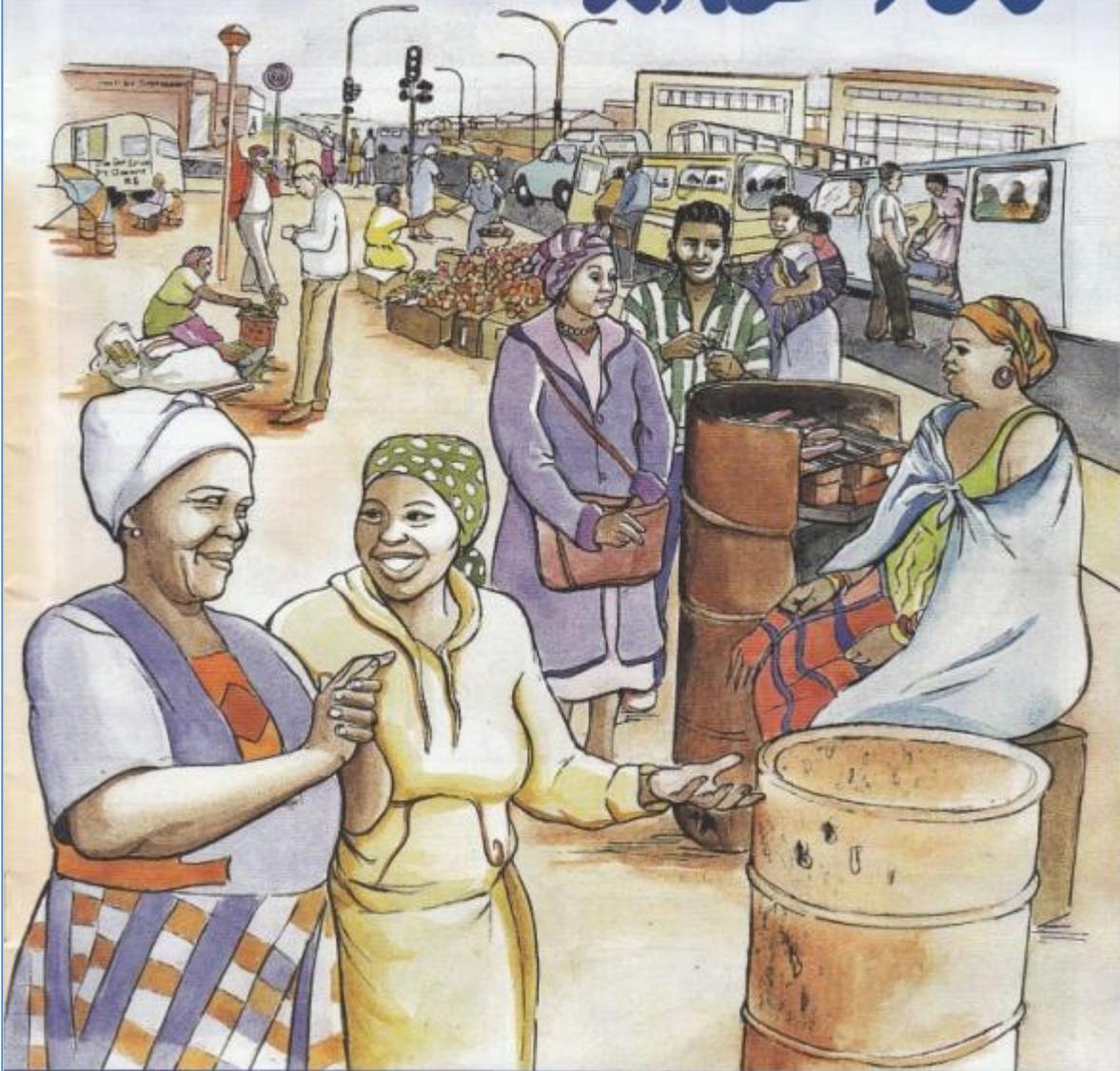


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Diabetes and You



DIABETES SOUTH AFRICA



Lindiwe's Story

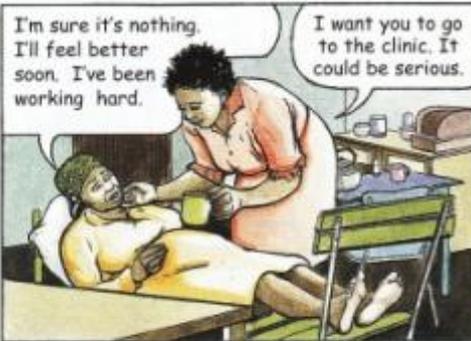
This story shows how Lindiwe found out she had diabetes and how she learnt to manage her condition.

At Lindiwe's house.

I feel so tired all the time and I'm always so thirsty.



Our uncle felt like that. He had diabetes.



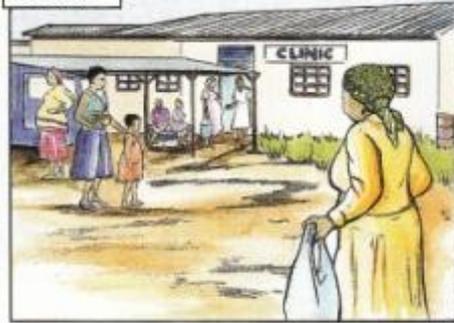
I'm sure it's nothing. I'll feel better soon. I've been working hard.

I want you to go to the clinic. It could be serious.



Do you think so?

Later ...



At the clinic.

My sister thinks I have something called diabetes.



Your sister could be right. There is sugar in your urine. I'll take you to see the nurse.

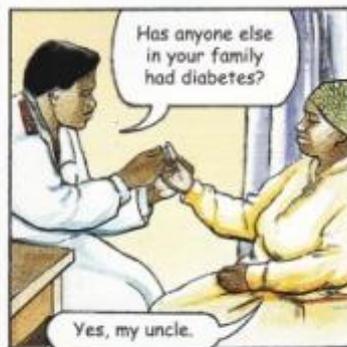


Sisi, tell me, how have you been feeling?



I'm always thirsty. And I have to go to the toilet all the time - even at night.

That could be serious. I will need to test your blood.

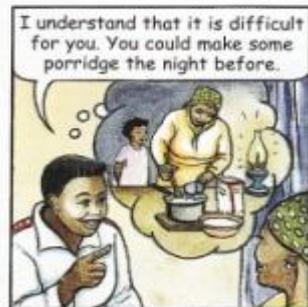
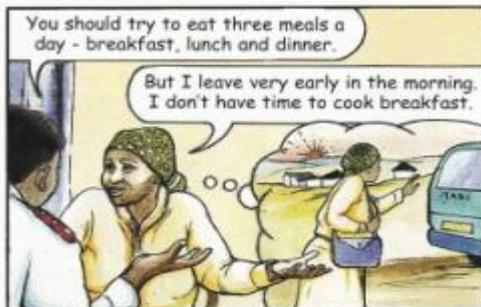
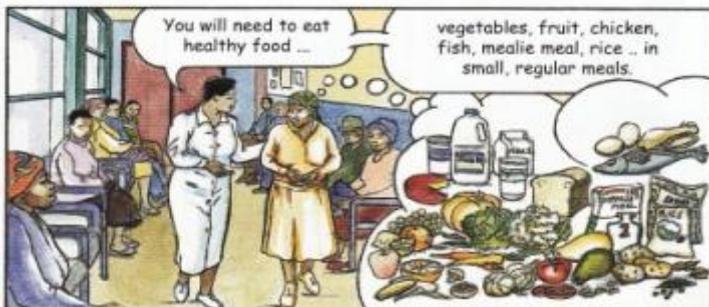
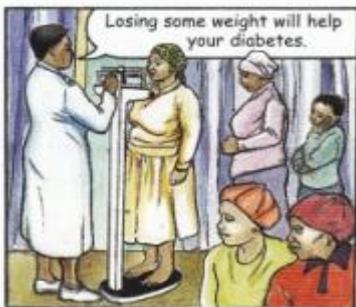
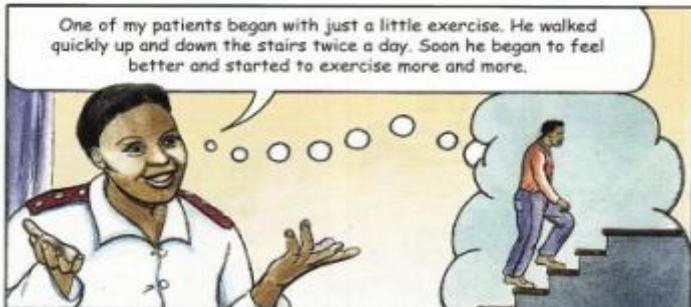
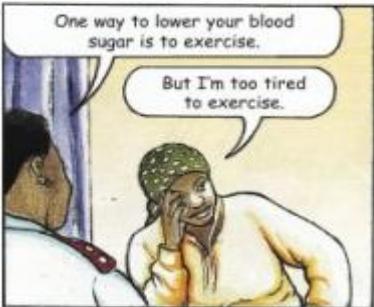
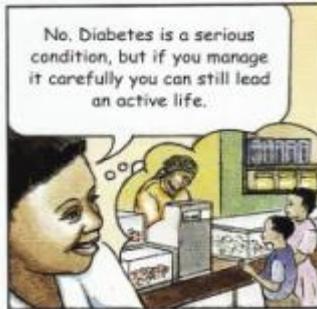


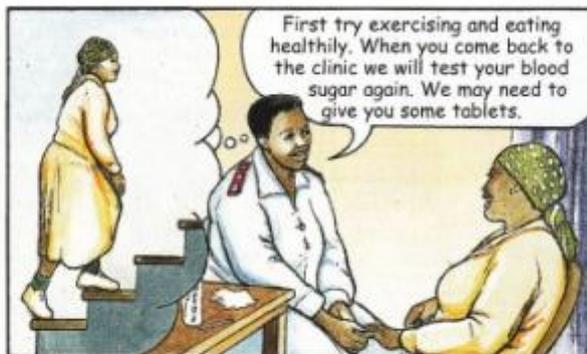
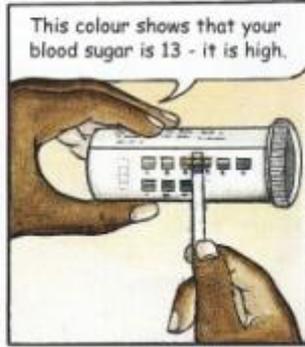
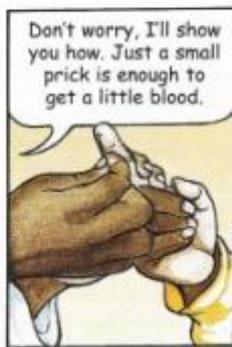
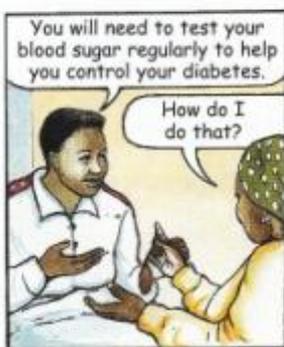
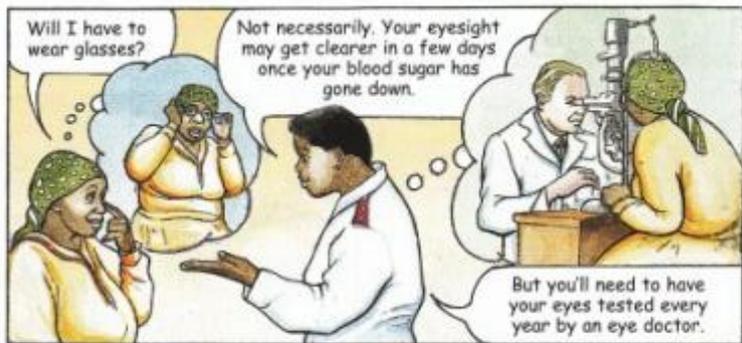
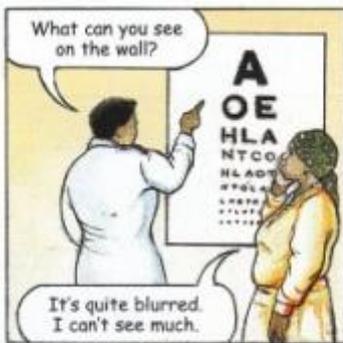
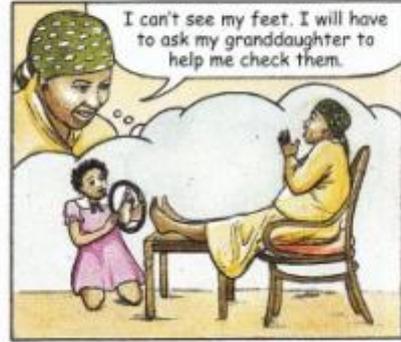
Has anyone else in your family had diabetes?

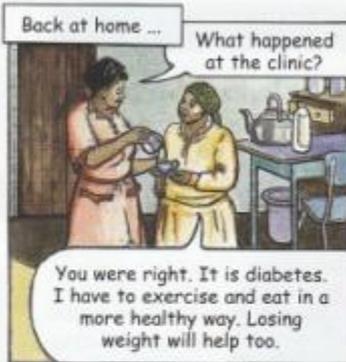
Yes, my uncle.



Hmm ... let's see ...







Back at home ...

What happened at the clinic?

You were right. It is diabetes. I have to exercise and eat in a more healthy way. Losing weight will help too.



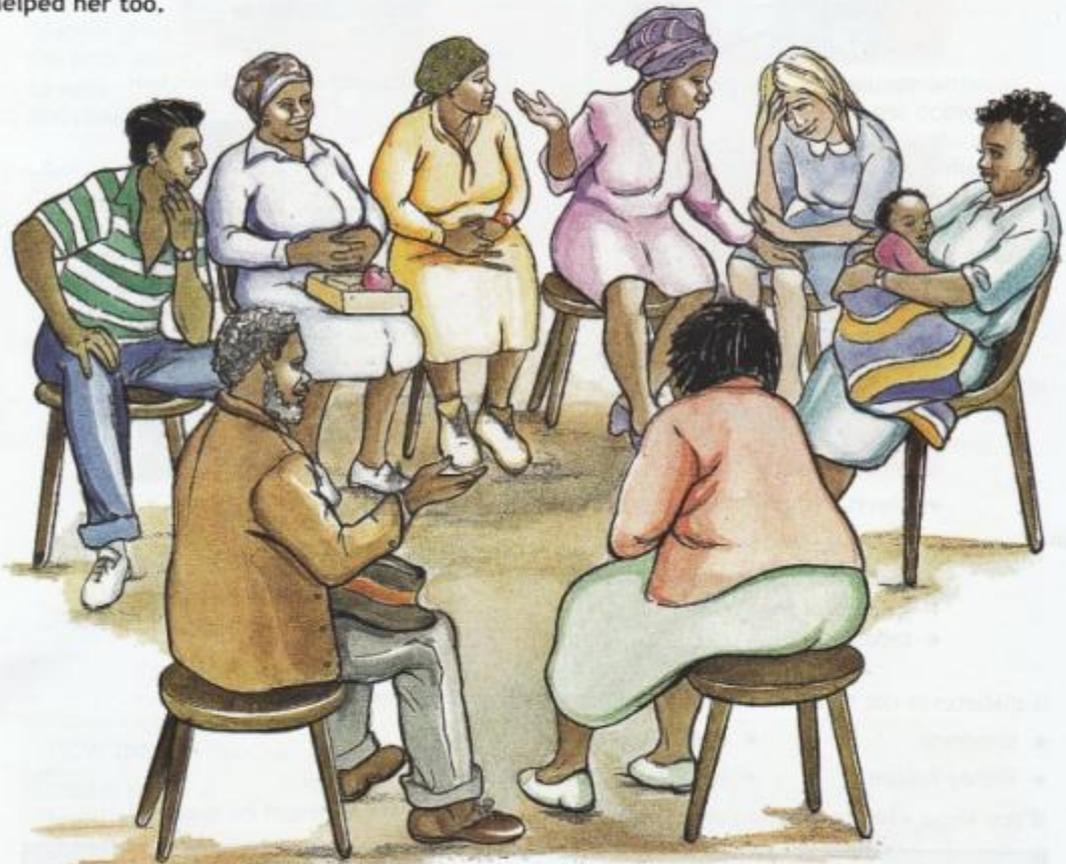
I'm worried. What will Thabo say when I start cooking differently?

You must tell him about diabetes.



You must tell everyone in the family so they can support you.

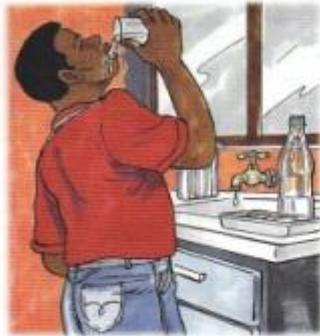
Lindiwe joined a Diabetes South Africa support group at her local clinic. They helped her too.



You will find out more about diabetes in this booklet.

SIGNS OF DIABETES

Here are some of the health problems that can be caused by diabetes. If you have any of these problems go to your clinic or doctor and ask to be tested for diabetes.



◆ Feeling very, very thirsty



◆ Sores and boils that do not heal



- ◆ Always feeling tired
- ◆ Not seeing well
- ◆ Losing weight even though you eat well
- ◆ Itchiness of private parts
- ◆ Impotence



◆ Going to the toilet often

Some people with diabetes have no signs or symptoms.

If diabetes is not treated it can lead to more serious problems like:

- ◆ blindness
- ◆ heart attacks and strokes
- ◆ kidney failure
- ◆ amputation of legs and feet

If you know what to do and get the right treatment these problems can be avoided!

Some people are more likely to get diabetes than others. Have a diabetes test if you are over 40, overweight and do not exercise. If you have family members with diabetes you should have a diabetes test every year.

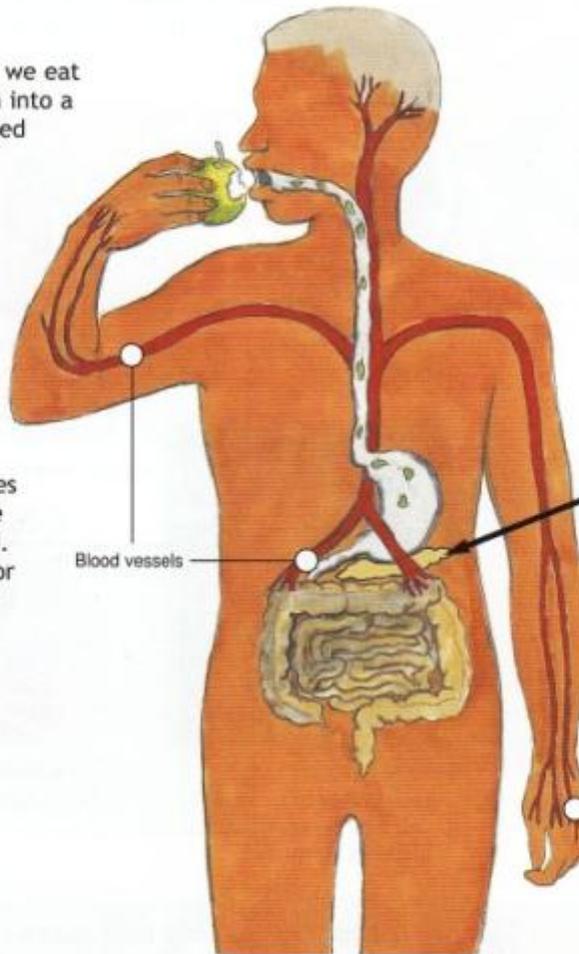
WHAT IS DIABETES?

We need energy to live. Our bodies get energy from the food we eat. People who have diabetes cannot use food correctly to give them energy.

Some of the food we eat gets broken down into a type of sugar called glucose.

Glucose gives the body energy to work, think and play.

Glucose is taken from our intestines to all parts of the body in our blood. Glucose is used for energy inside our body cells.



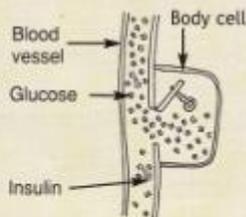
We need insulin so our bodies can use the glucose. Insulin is made in the pancreas.

A person with diabetes has too little insulin or the insulin does not work properly.

Blood vessels carry glucose and insulin

How insulin works

Insulin is like a key that opens the door to allow glucose from the blood into the body cells.

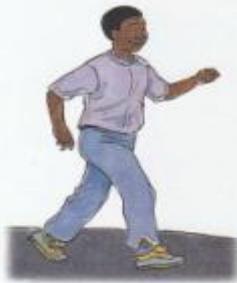


If there is not enough insulin the glucose stays in the blood. This means that the body cells get no energy.



MANAGING DIABETES

If you have diabetes you have to make sure that there is not too much or too little glucose in your blood. To do this you need to exercise regularly and eat in a healthy way. You may also need to take tablets or have insulin injections.



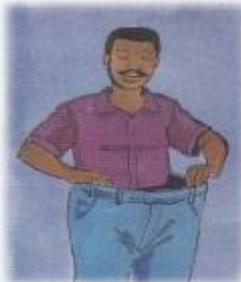
- ◆ Exercise regularly



- ◆ Eat small, regular healthy meals



- ◆ Take tablets or insulin injections if your doctor recommends them



- ◆ Exercising and eating healthily will help you to lose weight



- ◆ Having regular blood tests will help to show if you are managing your diabetes correctly



- ◆ Don't smoke if you have diabetes



If you think you may have diabetes you can go to a traditional healer but you must also:

- ◆ go to a clinic or hospital to be tested for diabetes *and*
- ◆ take any tablets or insulin that the doctor gives you *and*
- ◆ go back to the clinic or hospital for regular check-ups.

EXERCISE

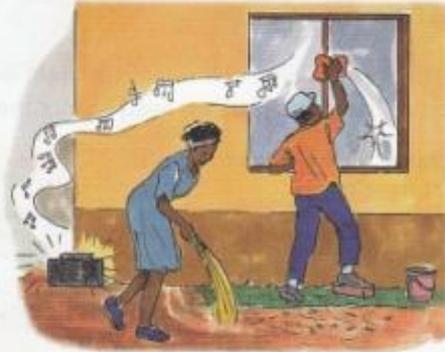
Regular exercise is good for everyone. It is especially important for people with diabetes.

Try to exercise at least three times a week for 30 minutes each time.

Any kind of exercise helps. You do not need a gym or special equipment to exercise. Here are some ideas.



◆ Join the TV exercise class!



◆ Use music to help you do housework a little faster!

- ◆ Exercise helps your insulin to work better.
- ◆ Exercise can help you to lose unhealthy weight (fat).
- ◆ Exercise makes you fit and strong.
- ◆ Exercise reduces stress and makes you feel good.



◆ Walk around your house every day



◆ Get out of the taxi early and walk the last few blocks home.

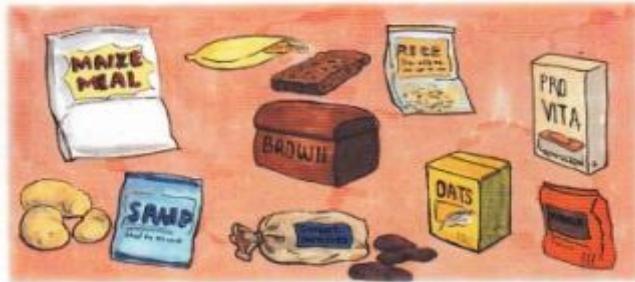
HEALTHY EATING

Eating puts glucose into your blood. If you have diabetes you must be careful about what you eat, how much you eat and when you eat.

What to eat

To stay healthy we need to eat the **right** amount of different types of food. There are no good or bad foods, but we need to mix the foods we eat carefully.

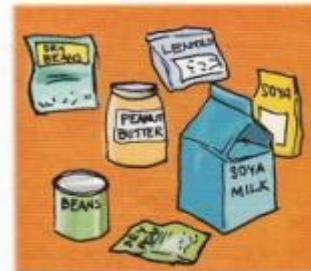
- ◆ Make starchy foods the basis of most meals.



- ◆ Eat plenty of vegetables and fruit every day.



- ◆ Eat dried beans and peas, lentils, peanut butter, tinned beans and soya products regularly.



- ◆ Chicken, fish, meat, eggs or milk can be eaten every day.



What to drink

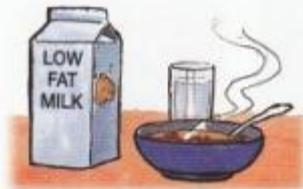
- Water:** Drink lots of clean, safe water.
- Alcohol:** If you drink alcohol, drink no more than 1 to 2 standard drinks per day with a meal.
- Cold drinks** Drink water or diet cold drinks rather than sweetened cold drinks or fruit juices that contain a lot of sugar.
- Hot drinks** Use sweetener tablets instead of sugar in hot drinks. If you use sweetener tablets, do so in moderation.

How much to eat and when to eat

Make meals more or less the same size. If you are overweight, eat smaller meals. Very large meals can put too much glucose into your blood at one time.



Space your meals evenly throughout the day. Eat at the same time each day, if possible.



◆ Eat breakfast



◆ Eat lunch



◆ Eat supper

Use salt sparingly. Rather use herbs, garlic and chilli to flavour your food.



Eat fats sparingly

Eat small amounts of fat. Too much fat can make you put on weight quickly. Eat very little fried food.

- ◆ Choose low fat foods.
- ◆ Remove any fat from meat and the skin from chicken before cooking it.
- ◆ Grill, bake or steam food rather than frying it.
- ◆ Don't add oil or margarine to food.



Sweetening your diet

People with diabetes can use a little sugar in mixed meals.

- ◆ Eat sugar on soft porridge
- ◆ Spread jam thinly on brown bread
- ◆ Eat some foods which contain small amounts of sugar, such as:
 - Tinned baked beans in tomato sauce
 - Peanut butter
 - Sweetened low fat yoghurt



Some sweetened foods can be eaten on special occasions!

Some foods such as cakes, biscuits and sweets are made with sugar and fat. These foods can be eaten on special occasions, in moderation.

MEDICATION

Eating healthily, exercising regularly and losing weight may be all you need to manage your diabetes. But most people also have to take tablets or have insulin injections.

If you have to take medication remember:

- ◆ Take tablets or insulin injections exactly as your doctor or clinic nurse tells you.
- ◆ Take tablets at the same time every day, with meals.
- ◆ Do not stop taking the tablets unless your doctor tells you to.
- ◆ Always make sure you have enough tablets to last until your next clinic visit.
- ◆ If you have high blood pressure take your tablets everyday. Do not stop.



TESTING

Measuring the glucose in your blood

When you visit the clinic the nurses will do a blood test to see how much glucose is in your blood. You can learn how to test your own blood for glucose. Make sure your health worker shows you how to do this and ask questions if anything is not clear. Ask a family member or a friend to help you do the tests if you need help.

Write your test results in a book. Take the book with you when you visit the clinic.



Blood testing meter



Blood testing strips are put in a meter or compared to a colour bar. Strips are often provided free at clinics.

If there is too much or too little glucose in your blood you may need to change your diet or exercise. You may also need to take tablets if you are not already taking them or have insulin injections.

WATCH OUT FOR THESE SIGNS

Learn to recognise your body's warning signs of having too much or too little glucose in your blood.

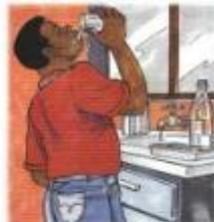
All these are warnings that you have **too much glucose** in your blood:



◆ going to the toilet often



◆ feeling very tired and weak



◆ feeling very thirsty



◆ not seeing well

If you have diabetes and you have these signs check that you are eating healthily, exercising and taking your medicines as you should. If you are doing all these things correctly, go to the clinic for advice.

If you take **diabetes tablets** or **insulin** you need to watch out for these signs. They are warnings that you have **too little glucose** in your blood. People call this hypoglycaemia (hypo).



◆ sweating



◆ feeling confused



◆ feeling faint or weak

- ◆ feeling shaky, nervous or irritable
- ◆ pounding of the heart
- ◆ feeling drunk

As soon as you feel any of these signs eat a sweet or have a sweet drink, then eat a sandwich.



If you take **diabetes tablets** or **insulin** always:

- ◆ carry sugary sweets like Super C with you;
- ◆ wear a MedicAlert bracelet, with 'diabetic, give sugar if confused' written on it.

LOOKING AFTER YOURSELF

If you have diabetes your body can easily get infections. Small injuries can develop into serious problems if they are not noticed at an early stage.

Looking after your feet

Diabetes can reduce the flow of blood to your feet and make them cold. It can also cause loss of feeling in your feet.



- ◆ Check your feet carefully every day (go to the clinic if you have sores that won't heal)



- ◆ Wash feet every day in warm (not hot) water



- ◆ Dry feet well especially between toes



- ◆ Put cream on feet (not between toes) to keep them soft



- ◆ Cut toe nails straight across



- ◆ Wear comfortable, well-fitting shoes or sandals (not plastic)



- ◆ Check shoes every day for nails and stones



- ◆ Keep feet warm and dry in winter



- ◆ Don't walk barefoot



- ◆ Be careful of heaters and hot water bottles (you may burn your feet on these and not feel it)

Looking after your eyes

High blood sugar may affect your eyesight. If you notice any changes in your eyesight go to see a doctor at the clinic. Have your eyes tested once a year, even if your vision has not changed.



Looking after your mouth

Brush your teeth at least twice a day. Visit your dentist regularly and tell him you have diabetes.



LIVING WITH DIABETES

Keeping up the treatment for diabetes can be difficult. It helps to have support from your family, friends and co-workers.

Talk with your family and friends about how they can support you. Join the Diabetes South Africa diabetic support group at your local clinic. As part of a support group you will be able to share ideas about living with diabetes. You will no longer have to depend only on your healthcare workers - you can also depend on yourself and the others in your group.



Did you know ...?
Many successful people live with diabetes



Walter Sisulu



Albertina Sisulu



Elizabeth Taylor



Mangosuthu Buthelezi

DIABETES SOUTH AFRICA



National Office: PO Box 604, Fontainebleau 2032 Tel: (011) 886 3765/21 Fax: (011) 886 2735
email: national@diabetessa.co.za web: www.diabetessa.co.za

Diabetes South Africa aims to assist people with diabetes to understand their condition so that they can look after themselves and lead healthy and active lives. The Association provides information pamphlets, organises lectures and courses on diabetes and produces a magazine, Diabetes Focus.

Diabetes SA has a network of branches and support groups around the country to help people in their own communities. Most of the work done in the Association is by volunteers - people with diabetes helping each other. Why not start a Diabetes SA group in your area. Diabetes South Africa speaks out for all people with diabetes. Join us and be a voice for diabetes.

Diabetes SA Branch Offices

Durban (031) 764 3953
East London 082 327 1571
Kimberley 082 923 4620
Lenasia (011) 852 5773
Pietermaritzburg (033) 346 0934
Port Elizabeth 082 579 9059
Pretoria 083 294 1726
Western Cape (021) 425 4440

Diabetes SA Local Contacts

Bloemfontein 082 419 6601
Elim Hospital (Venda) 083 703 2063
George (044) 874 6769
Graaff Reinet (049) 891 0102
Margate (039) 312 0375

Nelspruit (013) 741 4599
Phalaborwa (015) 781 1759
Pietersburg/Polokwane (015) 291 1598
Potchefstroom (018) 293 2089
Thohoyandou (Malumele) 084 416 2725
Uitenhage (041) 995 1331



We take diabetes personally.

Lilly Diabetes

Each person living with diabetes faces individual challenges that require individual solutions. We not only understand that, we're doing something about it. We're committed to providing healthcare professionals and their patients the treatments, tools, education, and support they need to make the journey a successful one. One person at a time.
Your journey inspires ours.


Answers That Matter.

You can take care of your feet!

Do you want to avoid serious foot problems that can lead to a toe, foot, or leg amputation?

Take Care of Your Feet for a Lifetime tells you how. It's all about taking good care of your feet.

Foot care is very important for every person with diabetes, but especially if you have:

- Loss of feeling in your feet
- Changes in the shape of your feet
- Foot ulcers or sores that do not heal

Nerve damage can cause you to lose feeling in your feet. You may not feel a pebble inside your sock that is causing a sore. You may not feel a blister caused by poorly fitting shoes. Foot injuries such as these can cause ulcers, which may lead to amputation.

Keeping your blood glucose (sugar) in good control and taking care of your feet every day can help you avoid serious foot problems.

Use this guide to make your own plan for taking care of your feet. Helpful tips make it easy! Share your plan with your doctor and health care team and get their help when you need it.

There is a lot you can do to prevent serious problems with your feet. Here's how.



Take care of your diabetes.

- Make healthy lifestyle choices to help keep your blood glucose (sugar), blood pressure, and cholesterol levels close to normal. Doing so may help prevent or delay diabetes-related foot problems as well as heart, eye, and kidney disease.

- Work with your health care team to make a diabetes plan that fits your lifestyle. The team may include your doctor, a diabetes educator, a nurse, a dietitian, a foot care doctor called a podiatrist (pah-DI-ah-trist), and other specialists. This team will help you to:
 - Know when to get your diabetes ABCs checked: **A**1C* (blood glucose), **B**lood pressure, and **C**holesterol.
 - Know how and when to test your blood glucose.
 - Take your medicines as prescribed.
 - Eat regular meals that contain a variety of healthy, low-fat, high-fiber foods including fruits and vegetables each day.
 - Get physical activity each day.
 - Stop smoking.
 - Follow your foot care plan.
 - Keep all your appointments and have your feet, eyes, and kidneys checked at least once a year.
 - Visit your dentist twice a year.

*A1C is an average measure of your blood glucose over a 3-month period.

2 Check your feet every day.

- You may have serious foot problems, but feel no pain. Check your feet for cuts, sores, red spots, swelling, and infected toenails. Find a time (evening is best) to check your feet each day. Make checking your feet part of your everyday routine.
- If you have trouble bending over to see your feet, use a plastic mirror to help. You also can ask a family member or caregiver to help you.



Reminder



Make sure to call your health care team right away if a cut, sore, blister, or bruise on your foot does not begin to heal after one day.

3 Wash your feet every day.

- Wash your feet in warm, not hot, water. Do not soak your feet because your skin will get dry afterwards.
- Before bathing or showering, test the water to make sure it is not too hot. You can use a thermometer (90° to 95° F is safe) or your elbow.
- Dry your feet well. Be sure to dry between your toes. Use talcum powder or cornstarch to keep the skin between your toes dry.

4 Keep the skin soft and smooth.

- Rub a thin coat of skin lotion, cream, or petroleum jelly on the tops and bottoms of your feet.
- Do not put lotion or cream between your toes because this might cause an infection.



Put lotion on the tops and bottoms of your feet.

3

5 Smooth corns and calluses gently.

- If you have corns and calluses, check with your doctor or podiatrist about the best way to care for them.
- If your doctor tells you to, use a pumice stone to smooth corns and calluses after bathing or showering. A pumice stone is a type of rock used to smooth the skin. Rub gently, only in one direction, to avoid tearing the skin.
- Do not cut corns and calluses. Don't use razor blades, corn plasters, or liquid corn and callus removers—they can damage your skin.

Gently rub calluses with a pumice stone.





Trim your toenails each week or when needed.

- Have a foot care doctor trim your toenails if you can't see well, if you cannot reach your feet, if your toenails are thick or yellowed, or if your nails curve and grow into the skin.
- If you can see and reach your toenails, trim them with clippers after you wash and dry your feet.
- Trim toenails straight across and smooth them with an emery board or nail file.
- Do not cut into the corners of the toenail.



Reminder



Make sure to call your health care team right away if a cut, sore, blister, or bruise on your foot does not begin to heal after one day.



Wear shoes and socks at all times.

- Wear shoes and socks at all times. Do not walk barefoot—not even indoors—because it is easy to step on something and hurt your feet.
- Always wear socks, stockings, or nylons with your shoes to help avoid blisters and sores.
- Choose clean, lightly padded socks that fit well. Socks that have no seams are best.
- Check the insides of your shoes before you put them on to be sure the lining is smooth and that there are no objects in them.
- Wear shoes that fit well and protect your feet.



Check the inside of your shoes before you put them on.



Protect your feet from hot and cold.

- Wear shoes at the beach or on hot pavement.
- Put sunscreen on the top of your feet to prevent sunburn.
- Keep your feet away from radiators and open fires.
- Do not put hot water bottles or heating pads on your feet.
- Wear socks at night if your feet get cold. Lined boots are good in winter to keep your feet warm.
- Check your feet often in cold weather to avoid frostbite.



Protect your feet when walking on hot surfaces.

Reminder



Make sure to call your health care team right away if a cut, sore, blister, or bruise on your foot does not begin to heal after one day.

9 Keep the blood flowing to your feet.

- Put your feet up when you are sitting.
- Wiggle your toes for 5 minutes, two or three times a day. Move your ankles up and down and in and out to improve blood flow in your feet and legs.
- Do not cross your legs for long periods of time.
- Do not wear tight socks, elastic or rubber bands, or garters around your legs.
- Do not smoke. Smoking reduces blood flow to your feet. Ask for help to stop smoking or call 1-800-QUITNOW (1-800-784-8669).
- Work with your health care team to control your A1C (blood glucose), blood pressure, and cholesterol.



*Put your feet up
when you are
sitting.*

10 Be more active.

- Ask your health care team to help you plan a daily activity program that is right for you.
- Walking, dancing, swimming, and bicycling are good forms of exercise that are easy on the feet.
- Avoid activities that are hard on the feet, such as running and jumping.
- Always include a short warm-up and cool-down period.
- Wear athletic shoes that fit well and that provide good support.



Walking briskly is good exercise.



Make sure to call your health care team right away if a cut, sore, blister, or bruise on your foot does not begin to heal after one day.

9



Be sure to ask your health care team to:

- Tell you if you are likely to have serious foot problems. If you have serious foot problems, your feet should be checked at every visit to your doctor.
- Check the sense of feeling and pulses in your feet at least once a year.
- Show you how to care for your feet.
- Refer you to a podiatrist if needed.
- Decide if special shoes would help your feet stay healthy.



Ask your doctor to check the sense of feeling in your feet.

12 Get started now.

- Begin taking good care of your feet today.
- Set a time every day to check your feet.
- Note the date of your next visit to the doctor.
- Cut out the foot care tip sheet in this booklet and put it on your bathroom or bedroom wall or nightstand as a reminder.
- Complete the “To Do” list at the back of this booklet. Get started now.
- Set a date for buying the things you need to take care of your feet: nail clippers, pumice stone, emery board, skin lotion, talcum powder, plastic mirror, socks, athletic shoes, and slippers.
- Most important, stick with your foot care program...and give yourself a special treat such as a new pair of soft, lightly padded socks. You deserve it!

Reminder



Make sure to call your health care team right away if a cut, sore, blister, or bruise on your foot does not begin to heal after one day.

Tips for Proper Footwear

- Proper footwear is very important for preventing serious foot problems. Athletic or walking shoes are good for daily wear. They support your feet and allow them to “breathe.”
- Never wear vinyl or plastic shoes, because they don’t stretch or “breathe.”
- When buying shoes, make sure they are comfortable from the start and have enough room for your toes.
- Don’t buy shoes with pointed toes or high heels. They put too much pressure on your toes.

Ask your doctor about Medicare or other insurance coverage for special footwear.

You may need special shoes or shoe inserts to prevent serious foot problems. If you have Medicare Part B insurance, you may be able to get some of the cost of special shoes or inserts paid for. Ask your doctor whether you qualify for

- 1 pair of extra depth shoes* and 3 pairs of inserts, or
- 1 pair of custom molded shoes (including inserts) and 2 additional pairs of inserts.

If you qualify for Medicare or other insurance coverage and would benefit from the use of the shoes, your doctor or podiatrist will tell you how to get your special shoes.

* Extra depth shoes look like athletic or walking shoes, but have more room in them. The extra room allows for different shaped feet and toes or for special inserts made to fit your feet.

For more information, please contact:

National Diabetes Education Program
www.YourDiabetesInfo.org
800-438-5383

American Association of Diabetes Educators
www.diabeteseducator.org
800-TEAM-UP-4 (800-832-6874)

American Diabetes Association
www.diabetes.org
800-DIABETES (800-342-2383)

American Podiatric Medical Association
www.apma.org
800-FOOTCARE (800-366-8227)

Centers for Disease Control and Prevention
Division of Diabetes Translation
www.cdc.gov/diabetes
877-232-3422

Juvenile Diabetes Research Foundation International
www.jdrf.org
800-533-CURE (800-533-2873)

National Institute of Diabetes and Digestive and Kidney Diseases
National Diabetes Information Clearinghouse
www.niddk.nih.gov
800-860-8747



U.S. DEPARTMENT OF HEALTH
AND HUMAN SERVICES
Public Health Service
National Institutes of Health



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Your personal guide to living with diabetes



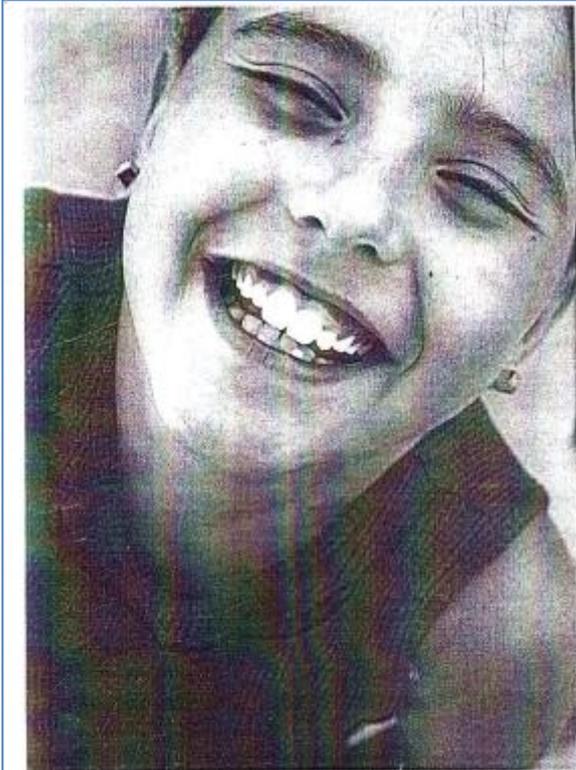
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OVERVIEW

INTRODUCTION

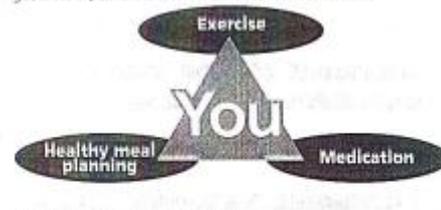
Give yourself the best start.

*"Is my health more at risk now because I have diabetes?
Will I have to drastically change my lifestyle?"*

This book has been written for people living with diabetes and it is also useful for the family and friends of the person with diabetes. The information in this booklet is to help you understand what is happening to your body as a result of having diabetes. It will also help you to understand some of the complexities of the condition, as well as the most important principles of treatment. Now that you are starting on insulin, you will probably have lots of questions that you want to ask. It is not surprising, as insulin therapy can seem overwhelming at first.

The treatment of diabetes

The three cornerstones of ideal diabetes management, and thus good health, centre around a careful balance between...



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1

Your diabetes care team will help improve your understanding of your body and its reactions to changes in your lifestyle. However, it is up to you to be motivated to exercise regularly, to test your blood glucose (sugar) level, to eat foods that will help stabilise your blood glucose level and to take your medication.

The diabetes care team

All members of the diabetes care team are there to help you with the questions and problems you may encounter during the course of maintaining a well-controlled blood glucose level. The ultimate objective of each team member is to assist you to self-manage your condition.

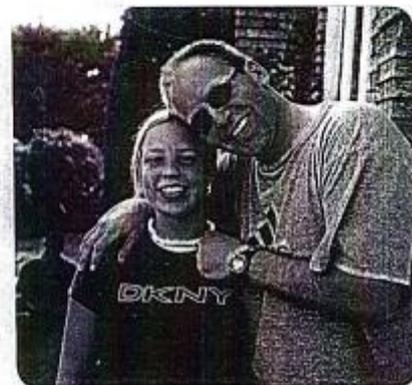
Members of the diabetes care team would include:

- Endocrinologist/Diabetologist/Paediatrician/Physician.
- General Practitioner.
- Diabetes Educator.
- Pharmaceutical/Drug Companies (call Novo Nordisk Toll Free on 0800 11 69 41 for advice – office hours only).
- Biokineticist (to assist you in formulating an exercise regimen suitable for you).
- Dietician (to help you with meal planning).
- Ophthalmologist (for regular eye check-ups).
- Urologist (for advice and treatment of kidney complications and sexual dysfunction).
- Podiatrist (for foot care advice and treatment).
- Pharmacist.
- Obstetrician/Gynaecologist (if you are pregnant and have diabetes).

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- Neurologist (to help with the treatment of nerve damage).
- Psychologist (for emotional support).
- Spiritual Counselor.



Important points to bear in mind while reading through your personal guide to living with diabetes:

- It is important to understand diabetes is not a disease, it is a metabolic disorder resulting in abnormal glucose metabolism.
- People living with diabetes can live a full, healthy and active lifestyle provided blood glucose levels are controlled.

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- Diabetes does not have to be feared for all its possible complications, if you make sure that you follow the basic principles of achieving good control.
- Good control can be achieved when you are empowered with the necessary knowledge, skills and motivation to understand your condition.
- This means that in order to maintain good control and live a life free of complications, you need to abide to the following:
 - Monitor how you feel
 - Test your blood glucose level every day
 - Adjust the previously mentioned three components (exercise, healthy meal planning and medication)

Remember:

The reward of understanding and adhering to the basic principles of good control is a healthy, active life. Implications of poor control include long-term complications such as: blindness, lower limb amputations and kidney failure.



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WHAT IS DIABETES?

- Diabetes is a condition in which the body cannot control the level of sugar in the blood.
- Insulin, a hormone produced by the beta cells in the pancreas, helps regulate the level of glucose in the blood.
- In people with diabetes the beta cells either produce too little or no insulin, or the insulin produced cannot be used effectively.
- The body's supply of energy comes from digested foods such as: bread, maize, potatoes, rice, milk, honey, sugar, fruits and vegetables.
- These foods are broken down into glucose which feeds the cells in the body by providing the necessary energy.

What does insulin do?

The glucose in the blood cannot get into the cells without the aid of insulin. Insulin helps with the uptake of glucose into the cells and facilitates the storage of fat. Normally, the glucose in the blood (the blood sugar) stays within a narrow range (4-10 mmol/l) because insulin is secreted automatically by the body, in the correct amount and at the correct time, as food is being converted into glucose.

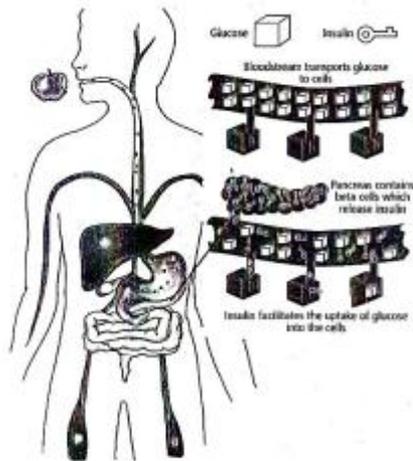
Remember:

- A person with diabetes has no, or relatively little, insulin and therefore their glucose cannot get into their cells to be used.
- This leads to a build-up of glucose in the blood making it thick and syrup like.
- The name of this condition, Diabetes Mellitus, actually means 'the passing of honeyed urine'.

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- A continuously elevated blood glucose level will initially cause symptoms like: weakness, thirst, weight loss, increased frequency of urination and a general unwell feeling.
- If left untreated, it can lead to more serious complications involving the nerves, blood vessels, eyes and kidneys.



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TYPES OF DIABETES

There are two types of diabetes:

Type 1 Diabetes Mellitus:

- Type 1 Diabetes Mellitus usually occurs in young people, under the age of 30.
- The beta cells in the pancreas no longer produce any insulin and therefore these individuals must inject insulin every day to maintain a blood glucose level within the acceptable range.
- This is referred to as an 'absolute' insulin deficiency.
- Insulin is a protein and therefore must be injected. It cannot be taken orally because it is destroyed by the digestive juices in the stomach before it can be used.

Type 2 Diabetes Mellitus:

- Type 2 Diabetes Mellitus tends to occur in people older than 40 years of age.
- People who are overweight and relatively inactive are more susceptible to type 2 diabetes.
- As type 2 diabetes is a progressive condition, treatment usually begins with changes to diet and exercise. Thereafter tablets are prescribed and after a while, insulin therapy may be needed to achieve and maintain good blood sugar control.
- Excessive weight inhibits the proper utilisation of glucose in the peripheral tissues and often these people need to lose weight and increase their activity levels.

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WHAT ARE THE SYMPTOMS OF DIABETES?

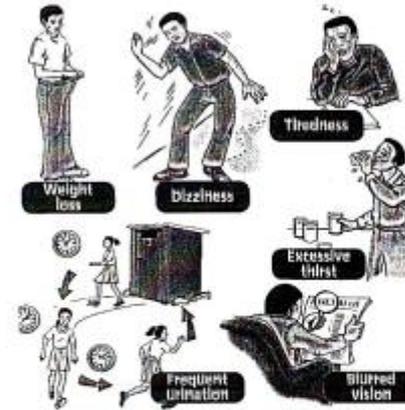
The five main symptoms of diabetes (i.e. an elevated blood glucose level) are:

- High frequency of urination.
- Abnormal thirst.
- Unexplained feelings of weakness and exhaustion.
- Weight loss.
- General unwell feeling.

Before you were diagnosed and treated for diabetes, you may have experienced the following additional symptoms:

- Excessive thirst.
- Increased frequency and the amount of urine passed.
- Excessive hunger.
- Weight loss.
- Feelings of weakness and tiredness.
- General aches and pains.
- Itchiness of the skin.
- Slow healing of cuts and wounds.
- Frequent infections.
- Blurred vision.
- Numbness or tingling in the feet and hands.
- Intermittent dizziness and loss of balance.

Symptoms Of Diabetes



Remember:

Now that you have been diagnosed as having diabetes, your aim should be to bring your blood glucose back to an acceptable level. This will alleviate your symptoms.

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MONITORING

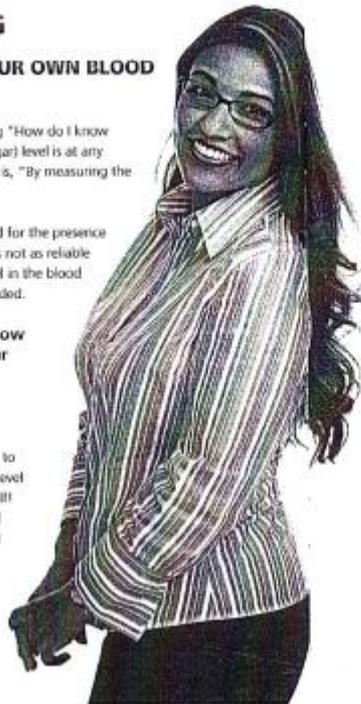
MONITORING YOUR OWN BLOOD GLUCOSE LEVEL

You may now be wondering "How do I know what my blood glucose (sugar) level is at any point in time?" The answer is, "By measuring the glucose in your blood."

In the past, urine was tested for the presence of glucose. This, however, is not as reliable as measuring the sugar level in the blood and is no longer recommended.

What you need to know about measuring your blood glucose level

It has been shown that the long-term complications of diabetes are directly related to a persistently high glucose level and not to the diabetes itself! Therefore, the goal of good control is to keep the blood glucose level within the optimal range.



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Measure your blood glucose level

- It gives you an accurate and instant reading of your blood glucose level.
- In order to get a blood glucose reading, you will have to prick your finger to get a drop of blood.
- To do this, you can use the LifeScan OneTouch® Meter and lancing device.
- Make sure that your finger is clean, dry and warm (do not use alcohol).
- A light prick is all that is required.
- Squeeze your finger gently and hold downwards for a few seconds.
- The drop of blood is applied to the test strip which is used in conjunction with the LifeScan OneTouch® Meter, to get a reading.
- The LifeScan OneTouch® Meter is simple to use and will help you to monitor your blood glucose level in order to keep it within the acceptable range.
- It is recommended that you test your blood glucose levels up to four times a day.

Keeping a record

You will be asked by your diabetes care team to keep a record of your blood glucose level so that they can analyse your readings and advise you of any changes that need to be made.

- It is important to test your blood glucose level regardless of whether you are a person with type 1 or type 2 diabetes.
- You should test your blood glucose level at least twice daily, although for optimal control, it is recommended that you test your blood glucose levels four times a day.

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First thing in the morning: the reading should be between 4 - 6 mmol/L

Two hours after breakfast, lunch & dinner: the reading should be between 4 - 8 mmol/L

The above recommendations are a guide and targets/frequency of testing may differ, for example in children, or if you have recently been diagnosed, or have just started insulin therapy. Although these are blood glucose values you need to strive for, you may experience high and low blood glucose levels from time to time. The blood glucose averaging function on the LifeScan OneTouch® Meter will help you monitor your general control and also provide a good indication as to how your HbA_{1c} is probably tracking. The LifeScan OneTouch® Meter also allows you to flag your test results as 'before' and 'after' a meal so that you can see your pre- and post-meal blood glucose averages.

Note:
Initially, after you have been diagnosed as having diabetes, you may need to test your blood glucose more frequently until your blood glucose level stabilises.

Please take note of the following:

- Blood glucose levels may be elevated for no obvious reason, therefore a doctor must be consulted.
- Influenza or an infection could be a possible reason for the reactions.
- Urine should be checked for ketones if blood sugar level is high.

MONITORING YOUR HbA_{1c}

This test is done at a laboratory to see what your average blood glucose level was over the last six weeks.

What is the HbA_{1c} (Glycosylated Haemoglobin)?

- The oxygen-carrying component of the red blood cells – the haemoglobin, is affected by the amount of glucose carried by the red cells in the blood.
- The HIGHER the level of glucose in the blood, the more the red blood cells (haemoglobin) 'stick' together.
- The LOWER the blood glucose, the less 'stuck' together the haemoglobin will be.
- The HbA_{1c} is given as a percentage, i.e. a percentage of 'stuck togetherness'.

Interpreting the results

	HbA _{1c} %	Mean Plasma Glucose mmol/l
Excellent	6	7.8
Good	7	9.8
	8	11.9
	9	13.9
Attention Suggested	10	15.9
	11	17.9
	12	19.9

Note:

- If during the last six weeks you have had a high level of glucose in your blood, your HbA_{1c} level will show this.
- If your blood glucose level has been generally well controlled, the test will also display this.
- Everyone who has diabetes should have their HbA_{1c} checked at least every three months to check their overall level of control.
- Make a point of consulting with your diabetes care team to interpret the results of your HbA_{1c} test.

LifeScan:



TREATMENT

PRINCIPLES OF TREATMENT FOR DIABETES MELLITUS

In order to manage your diabetes, you have to:

- Take control.
- Be in charge.
- Consult with your health care team.
- Implement some simple lifestyle modifications.

Remember that having a well-controlled blood glucose level is a daily choice. This commitment is not as formidable as it sounds, because as with any other habit, once you have incorporated it into your life, it becomes part of how you live your life. Let us examine the three components of diabetes management: exercise, healthy meal planning and medication.



EXERCISE

Exercise is important as it:

- Improves blood glucose control.
- Reduces risk of developing heart and blood vessel disease and high blood pressure.
- Reduces weight which, in turn, improves blood glucose control by increasing the body's insulin sensitivity.

Exercise can be an enjoyable way of improving the control of your diabetes. This could mean just a few simple adjustments to your daily activities.

Try some of the following:

- Walk up stairs instead of taking the lift.
- Park your car a distance from your destination and walk.
- Walk about while you are waiting for something.
- Play actively with your children/grandchildren.
- Take your dog for a walk.
- Do a little gardening.

Your exercise routine:

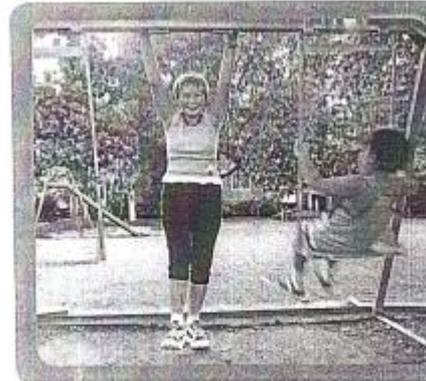
- Start your exercise routine by exercising for 30 minutes three to four times a week and increase this gradually to 45 minutes, three to four times a week.
- A combination of cardiovascular/aerobic exercise (such as walking & swimming) and light resistance exercise (such as weight training) is recommended.

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Keep the following in mind:

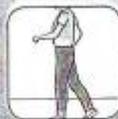
- Choose something that you enjoy.
- Start gradually but exercise regularly.
- Include a brief warm-up and cool-down period before and after your exercise session.
- Wear comfortable and suitable clothing/footwear.
- Carry some glucose sweets at all times and when playing a contact sport, give the sweets to your coach to keep for you.
- Test your blood glucose before and after exercising.
- Always have a small snack before and after exercising as hypoglycaemia can develop up to 24 hours after the exercise session.



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Some basic suggested exercises:



Walk and lean a hip, don't walk on the hip and don't try to become the advanced body bow.



Heel raises. Walk on a flat floor and raise the heels of your feet.



Chair sit down on a chair and raise yourself up to 45°. Keep your arms folded.



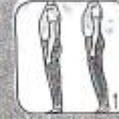
Heel raise. Hold onto a chair for balance and raise up onto your heel.



Stretch Calf Muscles. Lean with your palms against a wall. Keep your feet turned inwards always, press your heel firmly on the ground. Bend your arms to times 4, knee back and feet straight. This also equates to a heel raise.



Heel raises. Hold onto a chair for balance, step forward on the ledge, keeping both feet on the floor, shifting your weight from your back leg to the front one. Repeat 15 times and swap legs.



Heel raises. Put tip of your toes and then slowly raise your heels about 20 times. A tip try built up your whole weight on one leg and then the other.



Leg Sweeps. Stand with one leg slightly raised, lean a knee for stability with your hand on a chair for balance. Swing your other leg in and then 10 times swap legs.



Wall Heel raise. Sit down on the floor and against the wall. Shake your feet out, they are warm and warm.

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Note!

- If your blood glucose reading is below 4 mmol/l (70 mg/dl), you should be alert for symptoms of hypoglycaemia.
- If your blood glucose level is above 14 mmol/l and you still have ketones, you will need to check with your doctor or whoever you should be consulting.
- People with diabetes can have problems with peripheral circulation in their legs and feet.
- Exercising daily and stopping smoking will help minimise circulation and prevent complications from occurring.
- Ask your diabetes care team or doctor out for:
 - Advice on starting your feet with an exercise programme.
 - What sort of hat you will need to adjust your insulin requirements for your exercise routine.



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MEAL PLANNING

- There is no such thing as a 'diabetic diet'. It is simply a healthy eating plan – and the way we should all eat.
- Having someone with diabetes in the family can lead the way to a healthier eating plan for the whole family.
- Following a healthy eating plan is important to help keep your blood glucose and cholesterol levels within the acceptable ('normal') range.
- All people with diabetes, irrespective of whether they have type 1 or type 2 diabetes, need to eat a healthy balanced diet to prevent the complications of a consistently high blood glucose (sugar) level.
- If you have type 2 diabetes, losing weight with a kilogramme restricted healthy eating plan may be an important part of your treatment.
- If possible, consult a dietician for personalised meal planning.

Healthy eating habits are one of the most important factors in the successful treatment of diabetes.

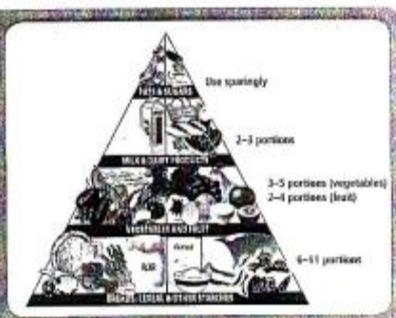


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- The 'diabetic diet' is simply a healthy eating plan – use the Healthy Diet Pyramid as a guide.

THE HEALTHY DIET PYRAMID



As a general rule it is best not to use a product where sugar appears first on the list of ingredients shown on the package. You may be able to include the food item in your diet if sugar is listed as the third or fourth ingredient.

For more information on healthy meal planning, please feel free to request the Novo Nordisk brochure "A guide to healthy eating for people with diabetes."

Be positive. An improvement in your food choices can make a vital difference to your health.

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INSULIN THERAPY

Correct eating habits and exercise are two of the three fundamental components in the treatment of diabetes. However:

- in type 2 diabetes, insulin and/or tablets often need to be added to the diabetic treatment for optimal blood glucose control.
- Patients who are not well controlled on oral diabetic medication will need to be initiated on insulin therapy.
- Insulin therapy, a substitute for your natural insulin needs to be injected because if given in a tablet form, the insulin would be destroyed in the stomach.

Type 1 diabetes

People with type 1 diabetes need to inject insulin every day, as their pancreas no longer produces any insulin.

Type 2 diabetes

Over a period of time the pancreas may produce less and less insulin, regardless of what medication the person has taken. In this case, the initiation of insulin therapy should ensure good blood glucose control, and is often accompanied by a noticeable feeling of improved well-being.

Normal insulin release in people without diabetes

The pancreas releases insulin in varying quantities throughout the day and night according to the natural body rhythm and foods eaten. The slow and small release of insulin over a 24-hour period is known as the basal insulin requirement. Conversely, at mealtimes, the pancreas quickly releases large amounts of insulin, depending

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on the amount and type of foods eaten. In a person with diabetes, insulin therapy attempts to mimic the normal release of insulin from the pancreas.

Types of insulins

There are several different types of insulin preparations which are generally classified:

- According to origin
 - Human insulin
 - Modern insulin
- According to the speed and time over which they act
 - Short/rapid-acting
 - Intermediate/long-acting
 - Pre-mixed insulin

Your doctor will prescribe the insulin/s which is/are most suitable for you, according to your insulin requirements during the day and to achieve the best long-term blood glucose control.

1. Human insulin preparations

These insulins resemble the insulin molecule made by the human body. They are produced through a process called genetic engineering.

2. Modern insulin preparations

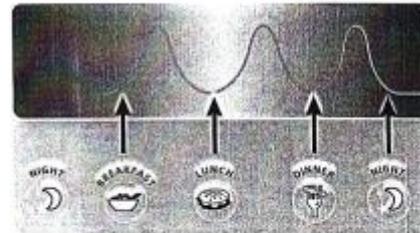
In addition to the range of human insulins, Novo Nordisk also offer modern insulins. Modern insulins are derivatives of human insulins which have been modified to closely mimic the characteristics of

the body's own insulin, i.e. faster absorption from the injection site which enables one to inject the insulin immediately before a meal (as opposed to human insulin which needs to be injected half an hour before meals) and allows post-meal glucose peaks to be better matched and thus better controlled.

Modern insulins currently available from Novo Nordisk include:

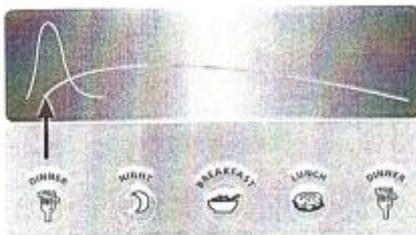
Rapid-acting bolus insulin (mealtime insulin)

This is the insulin that you would inject immediately before eating, to help with the glucose absorbed from that particular meal and which stays in the blood stream for 3-5 hours.



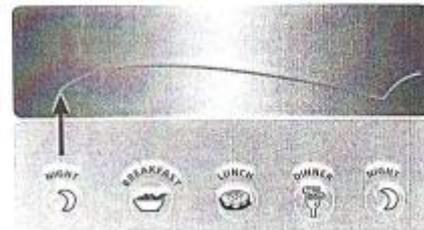
Pre-mixed (dual-acting insulin)

This is dual-release insulin which would be injected once, twice or three times a day. When compared to the pre-mixed human insulin, it mimics the body's natural insulin release pattern more closely in that it acts quicker, covers the post-meal peaks more adequately and reduces the risk of hypoglycaemia, providing fast and lasting glycaemic control.



Basal insulin (background insulin)

A basal insulin is long acting and provides background insulin for 24 hours depending on the dose injected. Basal insulin is normally injected in the evening (at dinner or at bedtime).



Insulin Regimens

Your doctor will advise you which insulin regimen to follow and how many units of each insulin to inject at different times of the day. The most commonly recommended regimens are:

- Basal insulin once a day (type 2 diabetes)
- Pre-mixed (biphasic or dual release) insulin once, twice or three times a day
- Basal-bolus insulin: basal insulin in the evening and rapid insulin at meal times

INSULIN INJECTION DEVICES

Novo Nordisk offers a range of state-of-the-art injection devices to simplify the administration of insulin including:

1. FlexPen®



FlexPen® is a pre-filled insulin pen designed to be simple, easy and discreet to use. FlexPen® contains 300 units of injectable insulin and is suitable for all people with type 1 or type 2 diabetes.

Features:

- Pre-filled disposable insulin pen injector.
- Large, clear scale with audible "clicks" for dose setting (one click = one unit of insulin).
- A safety feature exists that will not allow you to dial a dose larger than the amount of insulin remaining in the pen.
- If an incorrect dose is selected, this can be corrected immediately without the loss of insulin by a simple dial back process.
- Dose scale returns to zero during injection to allow for visual confirmation of dose delivery.
- Precise dose adjustments in single unit increments up to 60 units per injection.
- Easy identification of insulin type with colour and tactile coding.
 - Rapid acting bolus insulin – orange
 - Long acting basal insulin – green
 - Pre-mixed dual acting insulin – blue
- The FlexPen® uses a thin, short (8 mm) silicone coated needle, minimising injection pain.

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2. NovoPen® 3



NovoPen® 3 is a durable, stainless steel insulin pen injector to be used with 3 ml PenFill® cartridges.

Features:

- Durable, stainless steel insulin pen injector.
- Dials up in single unit increments from 0–70 units.
- Two easy steps: dial and inject.
- Uses only 3 ml cartridges and NovoLine® 8 mm needles.

3. NovoPen® 3 Demi / NovoPen® 3 Junior



NovoPen® 3 Demi and NovoPen® 3 Junior are coloured, durable insulin pen injectors which allow insulin dosage adjustments in ½ unit increments up to 35 units and are therefore suitable for children.

4. NovoPen® 3 PenMate®



NovoPen® 3 PenMate® is an optional accessory for people who need extra confidence when injecting or for those who are afraid of needles, because it hides the needle before injecting.

The NovoPen® 3 and the FlexPen® do not come with needles.

5. NovoFine® Needles



Your doctor will need to prescribe NovoFine® needles to fit these NovoPen® devices. NovoFine® needles are available in boxes of 100.

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How to store insulin

- Cold insulin injected into the body causes a burning sensation, so insulin currently in use can be kept out of the refrigerator for up to one month (at room temperature – maximum 30°C).
- Do not expose insulin to extreme temperatures, bright light or direct sunlight.
- Spare, unused insulin must be stored in the fridge at 2 – 8 °C (see package insert for product specific information).
- If no refrigerator is available, store in a cool dark place (don't add ice).
- Do not freeze or expose to dry ice.
- Store flat in refrigerator door.
- Do not use after expiry date.

If stored correctly, the insulin will remain fully effective up until the final expiry date marked on the label.

When to inject insulin

Ask your doctor or diabetic nurse educator to help you work out a regimen that will best suit your daily routine.

There are a few basic principles in determining when to inject your insulin and how much to inject.

- Always inject your rapid acting or pre-mixed insulin when you are about to eat, as per your doctor's recommendations.
- Never inject your insulin and then skip a meal.
- Try to inject your bigger dose when you are eating the larger meal (this applies particularly to those people injecting twice a day):
 - a. If you are an elderly person with diabetes who habitually eats the main meal at lunchtime, you would need to change your injection times to fit in with the main meal of the day.

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- a. Similarly, if you are a shift worker, you will need to adapt your injection times to the times you are awake and to match your mealtimes.
 - b. Similarly, if you are a shift worker, you will need to adapt your injection times to the times you are awake and to match your mealtimes.
 - c. Ask your diabetes care team to help you work out the regimen that will suit your daily habits in the best possible way.
- Under no circumstances should you stop your insulin therapy, when you are feeling well, or unwell, without the instruction of your doctor.
 - Consult your doctor/diabetes team for the appropriate dosages of insulin when you are ill.

Preparing insulin for injection

Always ensure that cloudy insulins (premixed) are properly mixed before injecting i.e must appear uniformly white and cloudy.

In order to ensure insulins are properly mixed before injecting, it is recommended that insulin be rolled between the palms in a horizontal position 10 times and then rotated in an "up-down" movement 20 times.



Injection techniques and injection sites

- Do not clean the injection site with spirits or alcohol, as this causes skin hardening.
- Pinch up a roll of skin between thumb and index finger.
- Inject into the subcutaneous tissue fold at a 90 degree angle (45 degree angle if person is very thin).

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- Hold the FlexPen®/NovoPen® 3 delivery device firmly and gently press the plunger down all the way until no further clicks can be heard.
- After injecting, the needle should remain under the skin for a few seconds to ensure complete delivery of the dose.

Injection site selection

When selecting a site remember:

- Insulin is absorbed more rapidly from the thigh than the upper arm and more rapidly from the abdomen than the unexercised thigh (it is however absorbed faster from the thighs after exercise).
- You should not inject into your thighs if you are doing strenuous exercise, as this drastically increases the rate of absorption.
- Short-acting insulin should be injected into the abdomen and long-acting insulin into the thighs, if you are on a basal-bolus regimen (four injections a day).
- Use the same injection area at the same time every day, but rotate the site within this area in a grid-like pattern as shown in the diagram on the right.

Remember!

Take the leading role. The most important player in the team is YOU. If you take the time to learn and understand your condition, YOU will benefit from good control. The long-term complications of an uncontrolled high blood glucose (sugar) level are devastating. Exercise, eat healthily and take your medication as prescribed.

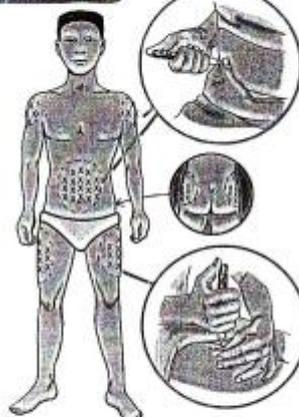
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Injection site selection

Rotate the injection site/area every 3 months.

Inject into the injection site area at a 90° angle, or at a 45° angle if you're very thin.



Rotate the insulin injections within the injection site/area for every injection.

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COMPLICATIONS

Keep in mind:

- During the early stages of diagnosis, people with type 2 diabetes may be able to control their condition through exercise and healthy eating alone.
- This is possible as their bodies are still able to produce some insulin which can be optimised.
- However, due to the progressive nature of type 2 diabetes, people may find that, eventually, most people with type 2 diabetes will need to inject insulin or take tablets if their blood glucose level is not controlled within the acceptable range.
- Under no circumstances should you stop taking your medication when you are feeling well, or for that matter unwell, without the instruction of your doctor.

The following is a discussion of some of the immediate, short-term and long-term complications you may experience from an uncontrolled blood glucose level.

SHORT-TERM COMPLICATIONS

Hypoglycaemia

- If your blood glucose level drops very low (below 3.5 mmol/l) you may experience hypoglycaemia or low blood sugar reactions.
- Hypoglycaemia may occur very quickly and if the first signs are not recognised and treated, it may lead to unconsciousness or coma within minutes.

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People with type 2 diabetes tend to experience less hypoglycaemia than people with type 1 diabetes.

Causes of hypoglycaemic episodes (hypo?)

- Too much insulin is injected.
- Too little food is eaten, or a snack/meal is missed.
- Very strenuous exercise which burns up a lot of glucose, thereby lowering your reserves (glycogen). Unless you eat enough before and after exercising, you could experience a hypoglycaemic reaction – for up to 24 hours.
- When insulin is still active and glucose level may be low (e.g. between midnight and 3am).
- Drinking alcohol without eating – alcohol inhibits the recognition of hypoglycaemic symptoms.



Remember!
It is essential that you learn to recognise the early warning signs of hypoglycaemia.

Symptoms and treatment of hypoglycaemia

SYMPTOMS	TREATMENT
<p>Early symptoms</p> <ul style="list-style-type: none"> hunger irritability tiredness poor concentration 	<ul style="list-style-type: none"> Starch (e.g. sandwich, fruit or biscuit)
<p>Later symptoms</p> <p>(below 3.5 mmol/l)</p> <ul style="list-style-type: none"> sweating shaking palpitations nausea 	<ul style="list-style-type: none"> rapidly absorbed snacks (e.g. glucose sweets, non-diet cold drink or fruit juice) followed by a light meal
<ul style="list-style-type: none"> confusion aggression lack of co-ordination inability to help oneself 	<ul style="list-style-type: none"> rapidly absorbed sugar to be given by another person (e.g. non-diet cold drink, sugar, water, honey or glucose powder) followed by a light meal
<p>Late symptoms</p> <ul style="list-style-type: none"> hypoglycaemic coma seizures 	<ul style="list-style-type: none"> glucagon 0.5 or 1 mg by injection or intravenous glucose followed by a light meal

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Practical notes on hypoglycaemic episodes (hypo's)

- People who have a high blood sugar level, i.e. above 12 mmol/l all the time, may feel 'hypo' at levels between 5 and 6 mmol/l. In this case it will take longer before severe symptoms occur.
- People who are well controlled with a blood sugar level between 3 mmol/l and 8 mmol/l may only go 'hypo' between 2 and 3.5 mmol/l, and sometimes lower. Here the move from the first symptoms to unconsciousness is very quick. In some cases there may be no warning signals.
- Do a blood test, i.e. finger prick, when you feel the mild symptoms, so that you know between what blood sugar levels you may experience a 'hypo'.
- Your symptoms may vary from those listed and from those of other people with diabetes. They may also vary according to the time of day when they occur. Know your symptoms well.

Treating a 'hypo'

At the first sign of symptoms, if you are able to swallow:

- Suck a sweet.
- If your blood sugar level is very low, this may not be sufficient to get it back to normal in which case you must drink a glass of sweetened fruit juice or cola (no diet drinks).
- Always follow this with a meal, for example, a cheese or peanut butter sandwich.



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If unable to swallow:

This will be in the case of a severe 'hypo', i.e.:

- Fainting
- Convulsions
- Coma

Immediately call for assistance.

- Treatment will be administered by another person, e.g. parent, friend, etc. So teach them about your condition and how to use a glucagon hypokit.
- Rub honey, syrup or sugar into the inside of the mouth.
- A glucagon hypokit should be used to treat any severe hypoglycaemic episode where the person cannot/will not swallow or is unconscious.
- An injection of glucagon increases blood glucose temporarily. It is important for others to know where the glucagon hypokit is kept and how it is used.
- Prepare the glucagon hypokit solution and inject (as shown in the instructions). As soon as the person is able to swallow, give a sweetened drink and something to eat to prevent a further 'hypo'.
- Never give anything to eat or drink if the person is unable to swallow or is unconscious. If unconscious, turn the person on his/her side. Ensure that nothing is blocking the airway.
- If within 10 minutes, there is no obvious response, the glucagon may be injected (if available), but call an ambulance (or doctor) or take the person to the nearest Hospital Casualty or Emergency Department.

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Remember!

Let those close to you practice their injection technique by injecting your insulin for you occasionally. You don't want their first-ever injection attempt to occur in an emergency.

Important notes on how to avoid hypo's

General:

- Do not miss meals or snacks or have them late.
- Always carry glucose sweets with you.
- Always have a glucagon hypokit available:
 - At home
 - In your lunch box or drawer at work
- Make sure people close to you, e.g. family, friends, teachers, fellow workers all know:
 - What a 'hypo' is
 - What your symptoms are
 - Where you keep your glucose sweets and your glucagon hypokit
 - How to treat your 'hypo' and ensure that they are able to use the glucagon hypokit
 - Wear a medic alert bracelet

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The Novo Nordisk glucagon hypokit for hypoglycaemic emergencies



Instructions for use:

- Step 1:** Remove the cap with which the vial is sealed. Slide the protective sheath off the needle.
- Step 2:** Inject all the sterile water into the vial containing the freeze dried glucagon. Leave the needle inserted in the vial.
- Step 3:** Gently shake the vial until the glucagon has dissolved completely.
- Step 4:** Draw the solution up into the syringe. Keep the needle tip submerged in the solution until the vial is empty.
- Step 5:** Choose the most accessible injection site – upper arm, buttock or thigh – and inject the solution according to the following recommended dosage:
- Adults and children weighing 25 kg and more: 1.0 ml
 - Children weighing less than 25 kg: 0.5 ml

Please Note:

- The injection can be administered subcutaneously, intramuscularly or intravenously (the intravenous route is for health care professional's only).
- Always discard the remaining solution once reconstituted.
- A glucagon hypokit has an 18 month shelf life if stored at 20 degrees Celsius.

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Hyperglycaemia

This is when the blood glucose is very high, i.e. over 10 mmol/l.

Causes of hyperglycaemia

- Skipped (missed) injections or injecting too little insulin.
- Poor control of your diet.
- Severe stress and emotional upsets.
- Illness.
- Repeated infections.
- Over-the-counter medication.
- Menstruation.

If your blood glucose is consistently more than 16.7 mmol/l or if you have any kind of infection, stress and/or experience nausea or feel abdominal pain, check for ketones in the blood or urine.

Symptoms and treatment of hyperglycaemia

Symptoms	Treatment
Excessive thirst Frequent Urination Tiredness and weakness Weight loss Blurred vision	No Ketones Drink lots of fluids – this will help to prevent ketones from forming. Increase your insulin dosage as per your doctor's recommendation

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Symptoms	Treatment
Excessive thirst Frequent urination Tiredness and weakness Weight loss Blurred vision	Ketones are present Immediately contact your doctor for advice

If you are experiencing diarrhoea (no vomiting):

Drink lots of fluids – this will help to prevent ketones from forming.

Check for ketones if any of the following are present:

- Blood glucose level is above 16.7 mmol/l
- Nausea or abdominal pain
- Infection of any kind (bladder, flu, etc.)

If ketones are found in the urine:

- Check blood glucose level hourly
- If blood sugar level is above 10 mmol/l drink diet cola
- If blood sugar level is below 10 mmol/l drink cola
- Take an injection of soluble insulin hourly 4-8 units intramuscularly if possible, otherwise subcutaneously.

If you are vomiting:

- The general rules are as above BUT if it is difficult to achieve rehydration through oral means then it must be done intravenously by a health care professional
- If vomiting is under control, then treat as diarrhoea
- In the event of a ketoacidotic coma, get the patient to a hospital immediately

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Important notes:

Know the difference between 'hypo's' and 'hyper's'

Hypo (as in 'low' blood glucose)	Hyper (as in 'high' blood glucose)
Fast onset Poor concentration Irritability Sweating Nausea Hunger	Slow onset (12-24 hours) Excessive thirst Frequent urination Tiredness Weakness

N.B.

Always test the blood glucose level to confirm symptoms and if in doubt, give sugar.

If you are uncertain of how to treat any of the above symptoms, contact your diabetes care team immediately for assistance.



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Diabetic Ketoacidosis (DKA)

Ketoacidosis is a serious condition, which usually results from insufficient insulin, poor control or illness/stress. It develops from a severe shortage of insulin or when the body is starved of glucose (for example if you are vomiting or have diarrhoea). When this happens, fats and protein are broken down to supply energy. This results in the formation of ketones and acidosis.

Symptoms of DKA:

- Ketones in the urine.
- Nausea and vomiting.
- Abdominal pain, sometimes due to the swelling of the liver.
- Shortness of breath or rapid breathing due to acidosis.
- Sweet smelling fruity breath (smells like nail polish remover/acetone) – this is due to the presence of ketones (it is sometimes misinterpreted as smelling alcohol).
- Drowsiness.
- Blurred vision.
- Coma – when the blood sugar and ketones reach a very high level, the patient will gradually become confused, drowsy and fall into a ketoacidotic coma.

It usually takes a number of hours to develop ketones, so as soon as you notice the first symptom of DKA contact your diabetes care team immediately.

- You should not exercise when ketones are present in the urine.

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LONG-TERM COMPLICATIONS

Throughout the booklet, emphasis has been placed on the importance of having good control of your blood glucose level.

BUT what happens if the blood glucose level is high over a prolonged period of time?

A continuous high blood glucose over a prolonged period of time will damage the blood vessels and nerves. The main complications of diabetes therefore result in one, or more, of the following:

- Blindness due to damage of the sensitive blood vessels in the eye.
- Kidney failure due to long-term strain on the kidneys to clean sugary blood.
- Fungal diseases in parts of the body where moisture accumulates (e.g. under arms, breast and in genital areas).
- Strokes and heart attacks due to the constriction or blockage of arteries or blood vessels.
- Lower limb amputations as poor circulation causes even minor injuries to heal slower making them prone to infections.



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Footcare:

Footcare is especially important for a person with diabetes as:

- Damage to the nerve endings may cause numbness, or tingling, itches in the legs and feet.
- Due to this loss of feeling in the feet, a person with diabetes may walk on a sharp object such as a thorn without feeling pain.
- As there is poor circulation in this part of the body, there is a high risk of infection.
- It is therefore important that you protect your feet by wearing comfortable shoes that fit properly. You should not walk around barefoot or sit too close to an open fire.
- Check your feet every day for abrasions and treat them immediately to avoid infections.



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The harmful effects of smoking:

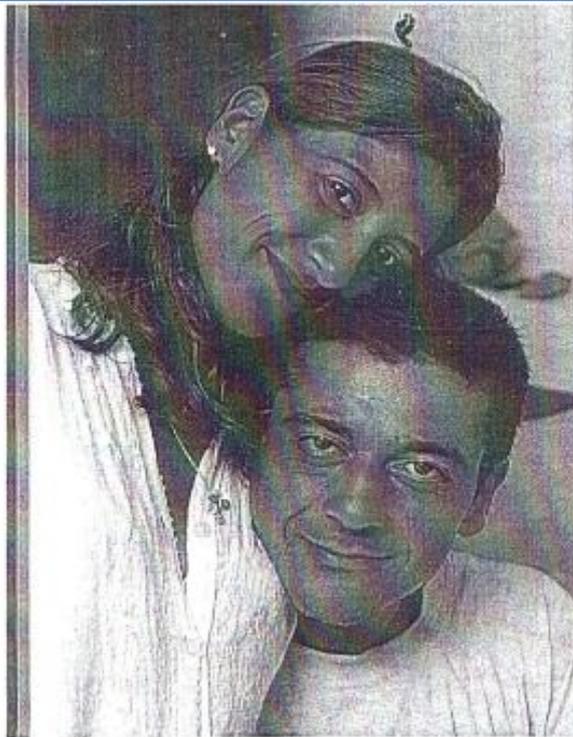
- Smoking damages your blood vessels - this is a devastating problem for people with diabetes. It constricts blood vessels, which can worsen foot ulcers and lead to blood vessel disease and leg and foot infections. It also reduces the amount of oxygen which reaches the tissues.
- Smoking also increases your blood pressure and raises your blood glucose level, making it harder to control your diabetes. It also increases your cholesterol levels and the level of other fats in the blood.
- 95% of people with diabetes who need amputations are smokers.
- Furthermore, people with diabetes who smoke are three times more likely to die of cardiovascular (heart) disease than non-smoking people with diabetes.

Prevention of long-term complications:

- Monitor your blood glucose level regularly and as advised by your healthcare practitioner.
- Adhere to the three main principles of treatment:
 - Exercise
 - Healthy meal planning
 - Medication
- Have your eyesight checked once a year.
- Take special care of your feet.
- Have your blood pressure checked frequently.
- Stop smoking.
- Reduce alcohol intake.
- Regular visits to your diabetes care team.

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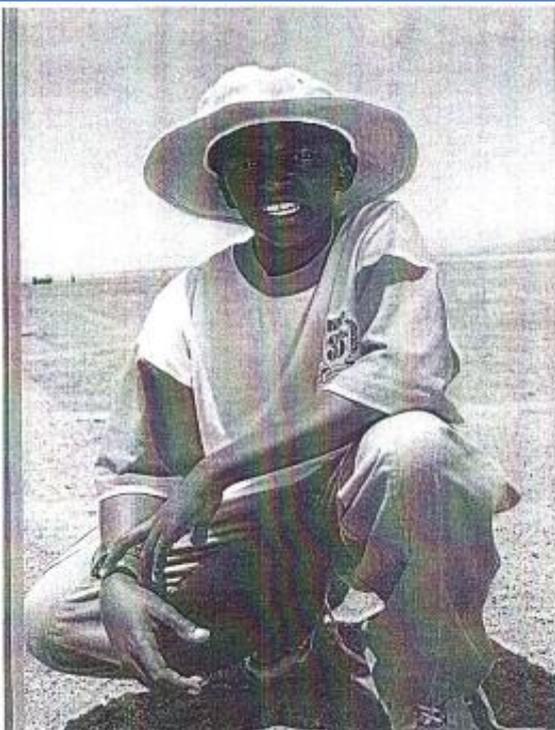
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GENERAL PREGNANCY

Please note:

- It is recommended that a woman with diabetes who is planning to conceive, should have an optimal blood glucose level (between 4 and 6 mmol/l) for at least three months prior to conception and during pregnancy. It would also be advisable to have your HbA_{1c} level checked.
- By adhering to these guidelines a woman with diabetes who becomes pregnant has every reason to expect a normal pregnancy and a healthy baby.
- The requirements for insulin may rise after four to five months of pregnancy, at which time the doctor may advise a change in the dosage and number of daily injections.
- A minor complication of pregnancy is that the usual warning symptoms of hypoglycaemia may not be so easily felt and therefore more frequent daily blood glucose tests will be required.
- Breastfeeding is recommended for mothers with diabetes. All mothers should make use of advice from members of the diabetes care team to help deal with any concerns during pregnancy.
- The genetic factor in diabetes is not clearly understood, however there is no reason why persons with diabetes should not have children – their children only have a small chance of also developing diabetes.



CHILDREN WITH DIABETES

- Children who develop diabetes usually suffer from type 1 diabetes, in other words:
 - They are insulin-dependant
 - They require insulin injections
- When your child is first diagnosed with diabetes, you may feel quite devastated.
- The thought of injections, diets and complications can be overwhelming, however with good information, routines and an understanding of diabetes, both you and your child can settle down to a pretty normal life.
- Good diabetic control will keep him/her healthy and enable him/her to do all the things other children do.

Teaching your child about diabetes

Remember:

Children with diabetes are very good at adjusting to their condition and the treatment required. You must however, be honest with your child.

Encourage him/her to be well informed, after all, he/she will have to cope with it for the rest of his/her life.

Establishing routines

- Children can be taught to administer their own insulin at an early age, therefore:
 - You must encourage responsible care of insulin and injection devices
 - Teach them to recognise the signs of hypoglycaemia (low blood sugar), what action to take and to report it to a responsible person immediately
 - Explain the reasons for the emphasis on healthy food choices and teach them which foods to eat sparingly
 - Explain the importance of eating regular meals and see that these are always available
 - Be aware of undue fatigue, abdominal pain and nausea in your child. If you notice any of these symptoms, check for ketones in the urine – ketones are dangerous and need to be treated immediately
 - Teach sensible foot care at an early age
 - Always keep check-up appointments
 - Arrange Medic-Alert or other identification for your child

Who should know about your child's diabetes?

- All members of your family and close acquaintances should be taught about diabetes and how to deal with problems such as hypoglycaemia.
- Explain your child's condition to his/her teacher and babysitter and teach him/her how to deal with hypoglycaemia - give him/her details of whom to contact in an emergency.
- Your child could do a presentation about diabetes to his/her classmates to help them understand his/her condition and dietary requirements.

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- If your child is invited to a party, ensure that a responsible adult is aware of your child's condition and how to deal with any problems. Supply special diabetic sweets.
- If your child goes on a camp (or to a party), make sure he/she has an extra peanut butter sandwich or butterless popcorn with him/her so that he/she doesn't feel left out.
- If your child is away, he/she must have a glucagon hypokit with, as well as sufficient insulin.

Do not let your child borrow medication from friends, even if they also have diabetes.

Participating in sport

- There is no reason why your child should not be able to participate in normal sporting activities.
- Make sure that the coach is aware of the child's diabetes and how to deal with hypoglycaemia.
- A fall in blood sugar is more likely during and after strenuous exercise.
- Ensure that the child has a snack before playing sport.
- Ensure that he/she has a sweet with him/her at all times.



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TRAVEL TIPS

If you are travelling in a country where they speak a language with which you are not familiar, ensure that you have a few phrases in that language ready in case of an emergency, for example: "I have diabetes, where can I find a doctor/chemist?"

Furthermore:

- Take along a back-up supply of insulin (in case of breakage).
- Ensure an adequate supply of pen injectors/syringes and testing material (for ketones and blood glucose).
- Carry your insulin and supplies in person, not in the luggage compartment of an aeroplane, glove compartment of your car or boot.
- Keep your insulin cool – but never let it freeze.
- Take one day's food supply with you.
- Request a prescription from your doctor and a letter explaining why you carry insulin and syringes, etc. in case you go through Security or Customs.
- Secure a list of hospitals in the areas where you are going.
- Take your Medic Alert identification.
- To avoid hypoglycaemia while driving, stop and eat at your regular times.
- Ask your doctor to prescribe anti-nausea and anti-diarrhoeal drugs for you – just in case you need them.
- In case of sickness, take your carbohydrates in the form of fluids and test your blood for ketones at regular intervals.
- If travelling by aeroplane, place an order for a diabetic meal before the flight. Choose foods you know are suitable for diabetics or take your own food with you.

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- Drink plenty of liquid before boarding and drink a sugar-free 'non alcoholic' drink every hour you are in the air.
- Since you are less active during flights, your blood sugar level might go higher than normal. Move about the cabin as much as possible in order to use up some glucose.

Remember:

Do not let your diabetes stop you!



When travelling, you can do almost anything you choose. Check with your doctor beforehand for instructions.

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Information and Support Groups

Diabetes South Africa (DSA)

Diabetes South Africa is a national welfare organisation, which provides support and information to people with diabetes and the general public. DSA has a network of branches and support groups around the country to assist people with diabetes in their own communities. DSA also produces a quarterly magazine, Diabetes Focus, which is free to all DSA members.

DSA acts in the general interests of all people with diabetes by promoting public awareness and campaigning for improved and more cost-effective treatment. It is primarily a volunteer organisation 'diabetics helping diabetics.'

For more information contact:

DSA National Office
PO Box 804,
Fontainebleau,
2194

Tel: (011) 792-8888/7

Fax: (011) 793-6561



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Novo Nordisk

Changing the Way we Care for Diabetes

- At Novo Nordisk, we're proud of the insulin therapies and delivery systems we've developed and continue to develop.
- These innovations make life better for millions of people around the world.
- However, people with diabetes need more than medicine and needles, they need the guidance and support in order to take control of their own care.

Novo Nordisk is participating in the attempt to bring awareness to one billion people worldwide about the importance of diabetes action, the Unite for Diabetes campaign.

The 'Unite for Diabetes' campaign was aimed at securing support from governments all over the world to call for the adoption of a United Nations Resolution on diabetes before World Diabetes Day 2007 (14 November) and make the World Diabetes Day an official UN healthcare day. In that process, on 20 December 2006, only six months after the launch of the 'Unite for Diabetes' campaign, the General Assembly of the United Nations adopted, by consensus, a Resolution on diabetes.

Furthermore Novo Nordisk offers free advice, support and information to thousands of people with diabetes.

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For more information:

Novo Nordisk offers the following support for people with diabetes:

- Free Novo starter kit for new insulin-requiring people with diabetes. This is a cooler bag containing:
 - Your Personal Guide to Living With Diabetes
 - Guide to Healthy Eating
 - Blood Glucose Monitoring Diary
 - LifeScan OneTouch® Meter
 - NovoFine® Needles
- Free Patient Education.
- Tried and tested, effective insulins.
- Accurate and easy-to-use pen injection devices.
- Toll-free helpline: 0800 11 69 43.

Furthermore, Novo Nordisk supports the following websites for people with diabetes:

Adults and children with diabetes

- www.novonordisk.com
- www.novonordisk.co.za
- www.insulinpens.com
- www.diabetes4patients.com (select UK or USA)
- www.living-with-diabetes.com
- www.gfoundation.co.za
- www.dapet.com
- www.diaquiz.com

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