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**The information needs and information seeking
behaviour of adult diabetic patients at
Addington Hospital, Durban**

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degree of Master of Information Studies (coursework 66.6%) in
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Declaration of originality

I, Prabavathy Naidoo declare that

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Dedication

This thesis is dedicated to the memory of my late mother Mrs. Joyce Aurelia Naidoo. Thank you to my dearest mum who helped me to find some direction towards a career path that best suited me, for finding my first job in a library and encouraging me to study towards my Library and Information Science Degree.

To my father Mr. Seethambaram Naidoo, thank you for inspiring my love of reading and books.

Abstract

Diabetes mellitus is a chronic disease associated with high levels of glucose (sugar) in the blood. (The three types of diabetes are: Type 1 diabetes which is onset in juveniles and is characterised by deficient insulin production and the patient requires daily administration of insulin; Gestational diabetes is onset and first detected during pregnancy and Type 2 diabetes is typically found in adults who are 40 years and over and results from the body's ineffective use of insulin). Type 2 diabetes is a lifestyle disease that can be prevented and managed by following a particular eating plan, exercising correctly and by the correct administration of medication. With relevant knowledge, lifestyle changes and information, type 2 diabetic patients can improve and manage their condition effectively. Hence information provision is especially important for the management of diabetes.

The current study investigated the information needs and information seeking behaviour of adult type 2 diabetic patients at Addington Hospital in Durban. The study was conducted on the patients who attend the Diabetic Clinic at the Hospital. A better understanding of the information needs and information seeking behaviour of diabetic patients can contribute to their successful management of diabetes.

Longo's 2010, Health Information Model provided the conceptual framework for the study. The study adopted both a quantitative and qualitative approach. Both methodologies were used to assist in gaining an insight into the research. It was envisaged that the use of both methodologies would enhance and increase the validity and reliability of the data collected. A population of 69 adult patients with a diagnosis of type 2 diabetes were individually interviewed. The healthcare professionals, which included the Medical Officer and four nursing staff at the Diabetic Clinic and the hospital's diabetic Dietician, completed the self-administered questionnaires.

The data was entered into a computer and analysed using SPSS. The data was analysed in terms of frequency of results and presented in the form of tables, bar graphs or pie charts.

Four themes emerged from the study: (1) Reliance on the diabetic doctor for diabetic education; (2) the active and passive patterns of information seeking; (3) patients' fear of the consequences of diabetes; and (4) the value of the Department of Health's and the Dietician's packaged information.

The results of the study indicated that certain factors influenced the patients' decisions about their diabetes self-management. Their current needs influenced their need to seek out information and in most instances they sought this information out from the diabetic doctor. They could not afford the recommended foods for diabetics and besides obtaining their information from the pamphlets and hand-outs provided by the hospital, they obtained their information from traditional mass media. The study concluded that the patients relied heavily on the information provided by the doctor,

the dietician and the hand-outs and pamphlets that are available at the clinic. Without an understanding of the effects of information on type 2 diabetes patients, we have an incomplete picture of how information changes the patients' behaviour, which is of primary concern in healthcare information. The study therefore recommended that future research should investigate the effects information has on type 2 diabetes patients and their behaviour.

Recommendations that were drawn from the conclusions of the study were that the Diabetic Clinic and Hospital should consider approaching the South African Diabetes Association (SADA) with regard to volunteering their services and facilities to the patients at the hospital. The Clinic should also consider playing a video/dvd recording on diabetes in the patient waiting room. The Diabetic Clinic should also consider inviting a podiatrist to speak to the patients about foot care.

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List of acronyms and abbreviations

The following is a list of abbreviations that are commonly used in the study.

CDC	Centres for Disease Control and Prevention
CICUs	Coronary Intensive Care Units
DESMOND	Diabetes Education and Self-management for Ongoing and Newly Diagnosed
DOH	Department of Health
GP	General Practitioner
ICE	Ischemic Coronary Event
ISP	Information Search Process
KZNDOH	KwaZulu-Natal Department of Health
MO	Medical Officer
MOPD	Medical Outpatients Department
PCOS	Poly Cystic Ovarian Syndrome
SADA	South African Diabetes Association
WHO	World Health Organisation

CHAPTER ONE: INTRODUCTION TO THE STUDY

“I still need more healthy rest in order to work at my best. My health is the main capital I have and I want to administer it intelligently”
(*Ernest Hemingway*).

1.1 Introduction

Diabetes mellitus is a chronic disease that affects millions of people globally. Increased involvement of patients with type 2 diabetes, in the management and prevention of this disease is essential. Diabetic patients can live a healthy life with fewer complications by making some smart lifestyle choices.

In order to gain an awareness of the information needs and information seeking behaviour of type 2 diabetic patients, this study examined the active and passive information seeking behaviour of type 2 diabetic patients. With active information seeking, the researcher looked at how and why patients seek out specific information. With the passive receipt of information, the study examined the unintentional seeking of information by the patients (Longo et al. 2010: 335). This chapter will cover the background of diabetes, the research questions, the broader issues to be examined and definitions of important terms, all of which provide the framework for the study.

1.2 Background

Diabetes mellitus, often simply referred to as diabetes, is a chronic disease associated with abnormally high levels of glucose (sugar) in the blood. It occurs when the pancreas is unable to produce sufficient insulin, or “when the body cannot effectively use the insulin it produces” (World Health Organisation 2011b). Hyperglycaemia (or high blood sugar) is the result of uncontrolled diabetes and over time can be detrimental to the body’s systems, such as the heart, blood vessels, eyes, kidneys, and nerves (World Health Organisation 2011b: Diabetes: what is diabetes?).

There are three types of diabetes:-

- Type 1 diabetes is onset in juveniles or in childhood. It is characterised by deficient insulin production and the patient requires daily administration of insulin. The cause of type 1 diabetes is unknown and it is not preventable with current knowledge (World Health Organisation 2011a: Diabetes: fact sheet No. 312).
- Gestational diabetes is onset or first detected during pregnancy. It is often diagnosed “through prenatal screening, rather than reported symptoms” (World Health Organisation 2011a: Diabetes: fact sheet No. 312).

- Type 2 diabetes “results from the body’s ineffective use of insulin”. Ninety percent of people with diabetes worldwide have type 2 diabetes, and it is largely because of excess body weight and the lack of physical activity. While this type of diabetes is typically found in adults (40 years and over), it is increasingly occurring in children (World Health Organisation 2011a: Diabetes: fact sheet No. 312).

The focus of this study was on type 2 diabetes. With type 2 diabetes, recent statistics show that more than 220 million people worldwide have diabetes. In 2004, an estimated 3.4 million people died from the consequences of the disease and the World Health Organisation (WHO) projects that diabetes deaths will double before the year 2030.

In South Africa, the WHO estimates that there are currently just under 900,000 diabetics and predicts that this number will grow to 1.3 million by 2030 (World Health Organisation 2011a: Diabetes: fact sheet No. 312).

Type 2 diabetes is a major public health problem in both developed and developing countries (World Health Organisation 2011a: Diabetes: fact sheet No. 312). While the focus is geared towards the clinical treatment and management of the disease, there is a need for patients to share increased responsibility for managing their health and diabetes. With relevant knowledge, lifestyle changes and information, type 2 diabetic patients can improve and manage their condition effectively. Hence information provision is especially salient for the management of diabetes (Peel et al. 2004: 269-270).

Addington Hospital is a 571 bedded and 2200 staffed district and regional hospital, situated on South Beach, Durban, KwaZulu-Natal. This public sector hospital serves a multicultural community from the greater Durban area. Most of the patients at Addington are from economically disadvantaged communities. The use of the medical library at the hospital is specifically for the medical and nursing personnel, nursing students and other categories of staff at the hospital. The patients do not have access to the hospital’s medical library.

1.3 Research questions

The main objective of the study was to investigate how a better understanding of the information needs and information seeking behaviour of diabetic patients, contribute to their successful management of the disease diabetes. The research questions that guided this study were as follows:

- What prompts type 2 diabetic patients to seek out information about diabetes?
- What are the information needs of type 2 diabetic patients?
- What are the information seeking behaviours of type 2 diabetic patients?
- Where do they obtain diabetes related information?

- What sources or types of sources do they use to answer questions about their diabetes?
- What are the challenges they encounter with regard to seeking health information on diabetes?
- Has the way in which they obtain information about their diabetes changed over time?
- Are they of the opinion that there is sufficient information available on type 2 diabetes?
- Do they rely heavily on the diabetic doctor and the nursing staff at the hospital for their diabetic education?

1.4 The broader issues to be examined

The broader issues to be examined include health literacy, patient knowledge of diabetes and the role of the Department of Health.

1.4.1 Health literacy

According to Weiss (2007: 8) health literacy is the “ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions and follow instructions for treatment”.

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (Centres for Disease Control and Prevention 2010).

Factors that contribute to a person’s health literacy range from the person’s general literacy which includes the person’s ability to read, write and understand written text and numbers or a person’s ability to understand the complexity of the information being presented (Weiss 2007: 8).

Limited health literacy affects people of all ages, races, income levels and education levels. Among primary care patients with type 2 diabetes, inadequate health literacy is independently associated with poor glycaemic control and higher rates of retinopathy (a form of non-inflammatory damage to the retina of the eye). Inadequate health literacy may contribute to the disproportionate burden of diabetes related problems among disadvantaged populations (Schillinger et al. 2002: 475-482).

1.4.2 Patient knowledge of diabetes

Type 2 diabetic patients are encouraged to take responsibility for managing their medical condition. Diabetes involves a more significant amount of awareness with regard to diet, exercise, medication administration and the early recognition of plausible complications. Patient knowledge of type 2 diabetes and the consequences of the disease are important for the management of the disease. The broader issue to be examined is the patient's knowledge or lack of knowledge of the disease.

1.4.3 Role of the Department of Health

The role the Department of Health (DOH) plays in providing relevant, understandable information on the management of diabetes is important. The broader issues to be examined in the context of the DOH include:

1.4.3.1 Easy access to the information

The DOH should be responsible for providing relevant information on diabetes on the DOH website and in printed form in health clinics and hospitals in both the rural and urban areas. The Department should also be responsible for making people aware that this information is available to them.

1.4.3.2 Repackaging information

According to Stilwell (2001: 40) the origin of the "concept of 'repackaging information' is unclear". Alan Bunch (1984: 25) states that repackaging encompasses two essential concepts which are re-processing and packaging. The process entails selecting the appropriate materials, "re-processing the information in a form that can be readily understood, packaging information and arranging all these materials in a way that is appropriate to the user" (Bunch 1984: 25).

According to Boadi (1987: 5) the reasoning behind the term repackaging is to "make the information available to illiterates" including other groups of individuals "for whom the usual formats used for conveying the information would pose a barrier to access" (Stilwell 2001: 41).

According to Newton et al. (1998: 172) the application of repackaging is not limited to the activities of the rural areas in the health sphere.

The DOH should therefore be responsible for the re-packaging of pertinent health related information for applicable target groups in relevant formats. The information should be geared to all patients with both higher and lower levels of education.

1.5 Significance of the study

Type 2 diabetes is a lifestyle disease that can be prevented and managed by following a particular eating plan, exercising regularly and by the correct administration of medications. Millions die as a result of the consequences of the disease, hence there seems to be a need for diabetic patients to be better informed on managing their conditions. Based on the above, it seemed important and appropriate to study the information needs and information seeking behaviour of type 2 diabetic patients.

1.6 Delimitations of the study

The study was confined to adult, male and female type 2 diabetic patients. Due to time constraints the study was only done at one public hospital, which was Addington Hospital in Durban. Many of these patients are from economically disadvantaged communities and do not have access to private medical aid funds.

The information needs were examined from the perspectives of the patient, clinicians and dieticians. Excluded from the study were the patients' family members and friends.

1.7 Definitions of important terms

In the field of Information Science many concepts can assume various meanings, therefore clarity is gained by conceptualising terms (Ikoja-Odongo and Mostert 2006: 146).

For this study the following definitions apply and should be understood in the context in which they are used:

1.7.1 Information

The definition of the word „information’ is relatively complex as it is used to “denote various overlapping concepts” rather than a distinct concept (Case 2002: 40).

Years of commentaries on the concept have identified 29 different concepts “associated with the term information” and a selection of 22 definitions were “written between 1968 and 1989” (Case 2002: 42-43).

Several attempts have been made to characterise information, some relatively broad and others narrowly focused.

The concept information simply translates into “any information that makes a difference to a conscious human mind”. It is information that is obvious to a human being, irrespective of whether it originated from an external or internal environment (Case 2002: 40).

According to Kaniki (2001: 191) „information’ may be defined as “ideas, facts, imaginative works of the mind and data potentially useful in decision making, question answering, problem solving etc.” Information is often “interchangeably used with data and knowledge”. Information is “an awareness of facts or organized data, which can lead a person to a state of knowing, whereas knowledge is the transformed information assimilated by a person and used in appropriate situations” (Kaniki 2001: 191).

1.7.2 Information behaviour

“Information behaviour encompasses information seeking as well as the totality of other unintentional or passive behaviours (glimpsing or encountering information), as well as purposive behaviours that do not involve seeking, such as actively avoiding information” (Case 2002: 5).

1.7.3 Information needs

“An information need is described as a recognition that personal knowledge is inadequate to satisfy a goal that needs to be achieved” (Case 2002: 5).

According to Wilson (2000), information needs are influenced by a variety of factors such as the range of information sources available; the uses to which the information will be put; the background, motivation, professional orientation and individual characteristics of the user (Wilson 2000: 49-55).

According to Krikelas (1983), information need is the recognition of the existence of uncertainty in decision making. Information need also refers to the extent to which information is required to solve problems, as well as the degree of expressed satisfaction or dissatisfaction with the information (Ehikhamenor 1990: 149-161).

1.7.4 Information seeking

Information seeking is the purposive search and acquisition of information from selected information resources to satisfy certain needs (Ikoja-Odongo and Mostert 2006: 146). “It is a conscious effort to acquire information in response to a need or gap in one’s knowledge” (Case 2002: 5).

Johnson (1997: 26) defines information seeking as “the purposive acquisition of information from selected information carriers”. According to Case (2002: 75) this definition lacks reference “to the „purpose’ itself, or to what motivates a person to select a „carrier’ and acquire information from it”.

Information seeking is motivated by the recognition of “missing” information. It is therefore active and intentional behaviour (Case 2002: 76).

1.7.5 Information seeking behaviour

Information seeking behaviour arises from the perceived need of a user, in this case the diabetic patient, whereby the individual identifies his or her needs for information, searches for information and finally transfers the information obtained (Ikoja-Odongo and Mostert 2006: 148).

According to Kuhlthau (1993: 341), information seeking behaviour entails the seeking of information that might contribute to understanding and meaning required in order to meet a need. To satisfy that particular need the user may need to consult either formal or informal information sources or services.

The terms defined above will be discussed in more detail in the literature review in Chapter Two.

1.8 Conceptual framework

According to Bertram et al. (2010: 117) a theory can be described as a “well-developed, coherent explanation for an event”. Case (2002: 136) defines the concept „theory’ as an “interrelated set of definitions, axioms and propositions”.

According to Ikoja-Odongo (2002: 86) “concepts refer to major phenomena studied, eventually forming the foundation of the conceptual framework of the subject under investigation and they may also be viewed as mental images expressed as subjective thoughts around things encountered in daily life”.

A conceptual framework is described as a set of broad ideas and principles taken from relevant fields of enquiry and used to structure a subsequent presentation. When clearly articulated a conceptual framework has potential usefulness as a tool to scaffold research and to assist a researcher to make meaning of subsequent findings (Smythe 2004).

Careful reviews of applicable models to the study were considered before deciding on the most relevant model for this topic.

Wilson’s model of information behaviour (1999: 249) “broadly conceptualises information seeking behaviour as activities a person may engage in when identifying his or her own needs for information, searching for such information in any way, and using or transferring the information”.

Wilson (1999: 250) describes a model “as a framework for thinking about a problem that may evolve into a statement of the relationships among theoretical propositions”. According to Wilson (1999: 250) most models in the field of information behaviour are statements that “attempt to describe an information-seeking activity, the causes and consequences of that activity, or the relationships among stages in information-seeking behaviour”.

“The model suggests that information-seeking behaviour arises as a consequence of a need perceived by an information user, who, in order to satisfy that need, makes demands upon formal or informal information sources or services, which result in success or failure to find relevant information” (Wilson 1999: 251).

Kuhlthau’s (2004) Information Search Process (ISP) as a conceptual framework was developed as a result of empirical research that began with a qualitative study of secondary school students. The “model describes common patterns in users’ experience in the process of information seeking for a complex task that has a discrete beginning and ending, and requires construction and learning to be accomplished” (Fisher 2006: 230). The ISP model identifies six stages of thoughts, feelings and actions.

Fisher’s 2004 theory of information grounds, show that information grounds are usually attended by identifiable social types. According to Fisher people who gather at an information ground, “engage in social interaction, conversing about life, generalities and specific situations that lead to serendipitous and sometimes purposive, formal and informal sharing of information on varied topics” (Fisher, Erdelez and McKechnie 2006: 185-186).

Although these models described above may be applicable to the study, the study adopted Longo’s Health Information Model.

1.8.1 Longo’s Health Information Model

The conceptual model for this study was adapted from Longo’s Health Information Model: information seeking, passive receipt, and use (Longo et al. 2010).

The model (Figure 1) is suitable for this study as it enabled the researcher to broadly look at all dimensions of information needs, information seeking and information behaviour of the diabetic patients. The model is especially useful in that it looks at the role and importance of the passive receipt of information compared to active information seeking (Longo 2005: 189; Longo et al. 2010: 337).

The original model was proposed by Longo in 2009 and developed for the study on cancer patients (Longo et al. 2009: 187-188). The proposed 2009 “Expanded conceptual model of health information seeking behaviours and the use of information for healthcare decisions” was reconfigured with some minor changes for Longo et al. (2010) study. Longo et al. (2010: 339) reconfigured the original Health Information Model “to explicitly reflect the nonlinear interplay of both the active information seeking behaviour and passive information receipt, and this included the important role relationships play as the patients incorporate the information that works for them.

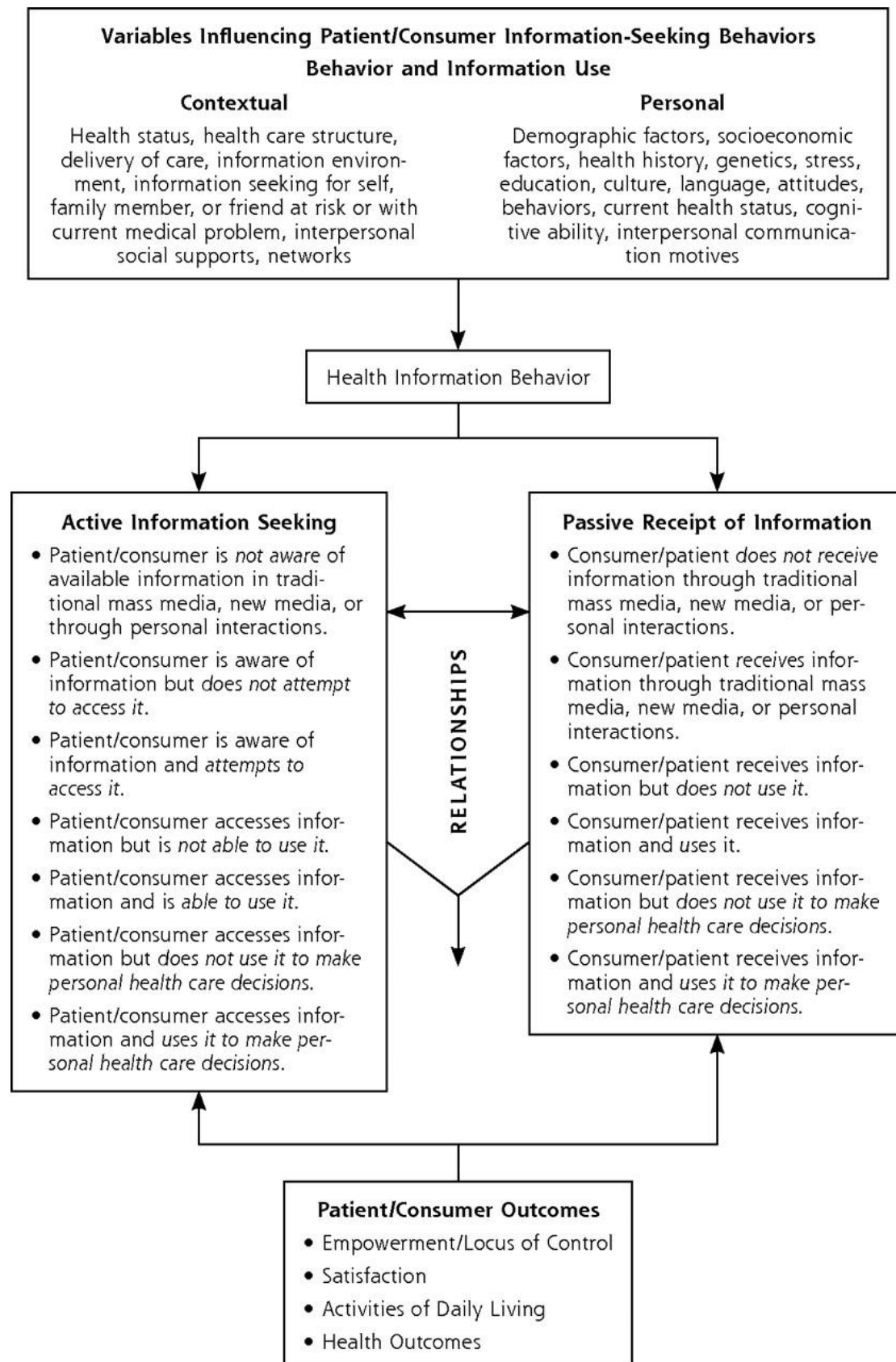


Figure 1. Longo's Health Information Model: information seeking, passive receipt, and use (Longo et al. 2010)

As mentioned earlier, the Health Information Model was initially developed for cancer patients, however it has been successfully used in other health related studies. Recently the reconfigured model was used to study the health information seeking, receipt and use in diabetes self-management (Longo et al. 2010: 334-340). The model was derived from the experiences and reports from the patients themselves, hence it may be useful in placing “the research findings in a broad patient perspective” (Longo 2005: 191-193).

Both models, (Longo et al. 2009; 2010) centred on the links between healthcare consumerism, the explosion of information and an “emphasis on patient centredness” and the involvement of the patient in taking a greater part in learning more about their disease and making informed decisions about their treatment and diabetes management (Longo et al. 2009: 187-188).

The concept of “patient centredness” formed the basis of Longo’s expanded conceptual model of health information seeking behaviours and the use of information for healthcare decisions. The approach to the model encompasses the adaptation of medical care “to current social norms and communication patterns, and has been linked to improved patient satisfaction and lowered symptom burden” (Longo et al. 2009: 188).

According to Longo et al. (2009), assessing and meeting the health information needs of the patient should be extended to enable the patient to “become informed healthcare decision-makers and effective partners in their care” (Longo et al. 2009: 188).

The model allows researchers to postulate whether consumers/patients are active information seekers or form part of a major and vital complementary channel of passive health receipt (Longo et al. 2009: 188). Further, the model includes the contextual (factors such as health status, healthcare structures, delivery of care, information environment factors, information seeking for self, family member, or friend with current medical problem and cross-cultural communication) and personal (demographic factors, socioeconomic factors, health history, genetics, family medical history, education, language, current health status and health literacy). All these are variables that influence the patient/consumer phase of information seeking behaviour and information use.

1.9 Research design and methods

This section briefly introduces the research design and methods that were used in this study. The comprehensive explanation of the entire research procedure is presented in Chapter Three. This study employed both the quantitative and qualitative research methods to investigate the research problem. Both methodologies were used to assist in gaining an insight into the research. It was envisaged that the use of both

methodologies would enhance and increase the validity and reliability of the data collected.

1.9.1 Study population

The rationale and extensive description of the study population is outlined in Chapter Three (section 3.2). The following were the population groups that formed the study.

- Adult type 2 diabetic patients;
- Diabetic clinic medical officer and nursing staff; and
- Diabetic dietician.

1.9.2 Research techniques used in the study

Data was collected using the following methods that are described in Table 1

- Literature review established the conceptual framework;
- The interview schedule for the patients; and
- The self-administered questionnaire for the healthcare professionals.

Table 1: Research techniques used

Research techniques	Descriptions of the research techniques
Literature review	The review covers the information needs and information seeking behaviour of adult type 2 diabetic patients. The objective of the study was to investigate how a better understanding of their information needs and information seeking behaviour can contribute to their successful management of diabetes. The literature review is provided in Chapter Two.
The interview schedule for the adult type 2 diabetic patients	The schedule for the patients aimed to establish how and where diabetic patients obtain their information, what were their information needs, what prompted them to seek out information (Appendix D).
Self-administered questionnaire for the healthcare professionals	Two self-administered questionnaires were aimed at the Diabetic Medical Officer and nursing staff and Dieticians respectively. It was intended to establish the types of diabetic information the healthcare professional provided to the patients (Appendix E and F respectively).

1.10 Demarcation of chapters

This study consists of the following seven chapters.

- **Chapter One** is the introductory chapter which sets the scene for the entire research study. It provides a background on type 2 diabetes. This chapter also

deals with the research problem, objectives, research questions, definitions of key terms used in the study and on the scope of the study itself. Further the chapter describes the conceptual framework used for the study and also briefly discusses models that have been used by other studies related to the information needs and information seeking behaviours from various perspectives.

- **Chapter Two** provides a review of literature related to the studies on the topic. The background of the services provided with regard to information provision at the Diabetic Clinic and the Dietetics Department at Addington Hospital in Durban are described. The role the South African Diabetes Association (SADA) plays in providing diabetes education is also discussed.
- **Chapter Three** describes the research design and methodology. The population and instruments used are explained. The data collection procedures and the validity and reliability of the study are evaluated and described.
- **Chapter Four** presents the results of the study.
- **Chapter Five** presents the interpretation of the results of the questionnaire and interviews.
- **Chapter Six** deals with the conclusions and recommendations. Appendices are listed after the list of works cited.

1.11 Summary of the chapter

In this introductory chapter, the research problem and background with regard to type 2 diabetes has been outlined. The research questions, delimitations, significance and the broader issues to be examined have been delineated. Succinct definitions of terms used in the study have been provided. A brief overview of the research methods used is provided. This included the survey research methods using both the qualitative and quantitative approaches. The chapter outlined the study population and how the data was collected and analysed. Longo et al. (2010) Health Information Model: information seeking, passive receipt, and use, formed the conceptual framework for this study and was reviewed with the recognition of other information needs and information seeking behaviour related models. The chapter concludes with an outline of the study's chapters. Chapter Two provides a review of the related literature and this review will be guided by the study's research question.

CHAPTER TWO: A REVIEW OF THE LITERATURE

“Every human being is the author of his own health or disease”
(*Buddha*).

2.1 Introduction

The literature review is discussed in this chapter. The search for relevant literature allows the researcher to discover what has been done in relation to the researcher’s study.

According to Hart (2003: 13) the literature review may be defined as the selection of accessible documents that are published and unpublished on a topic. These documents contain “information, ideas, data and evidence” that are written from a particular perspective in order to express the aims and views on the nature of the topic. The literature review also indicates “how it is investigated and the effective evaluation of these documents in relation to the research being proposed” (Hart 2003: 13).

Neuman (1994: 80) stated that the goals of a literature review are:

- To display an awareness with a body of knowledge and establish credibility. The review informs the reader that the researcher is familiar with the research in an area and is familiar with the major issues;
- To indicate the path of previous research and how a current project is linked to it. Here the review basically draws the direction of research on a question and displays the development of knowledge;
- To assimilate and summarise what is known in an area. The review brings together and synthesizes different results; and
- To learn from others and encourage new ideas. The review shows what other researchers have established so that a researcher can benefit from the efforts of others.

The ultimate aim of the literature review is to demonstrate the researcher’s skills in searching the library resources, to obtain an understanding of the problem and to justify the research topic, design and methodology (Hart 2003: 13).

2.2 Background to the health information system

The health system in South Africa is unique in many respects because its development and structure has been influenced by a unique political ideology of racial separation. Before South Africa’s democracy, the majority of South Africans did not have equal access to health information systems. All South Africans now have access to health information through the government websites, government hospitals and specific

health associations. Diabetic patients at Addington Hospital have access to the following health information systems.

2.2.1 The KwaZulu-Natal Department of Health

The KwaZulu-Natal Department of Health (KZNDOH) website provides comprehensive online information on diabetes. There is information surrounding World Diabetes Awareness Day, which was created in an effort to educate the public about this disease and to inform those with diabetes about the resources available to them (KwaZulu-Natal Department of Health 2011: Diabetes).

The site provides informative information in an interesting way to inform people on what diabetes is, what are the signs and symptoms, how diabetes is treated, the diabetic diet and a useful guide to healthy snacks and exercise tips (KwaZulu-Natal Department of Health 2011: Diabetes). The information is available in both English and Zulu.

2.2.2 The Dietetics Department at Addington Hospital

The diabetic dietitians at Addington Hospital hold a weekly session at the Diabetic Clinic, which is about forty five minutes long. The patients only need to attend the session once, as it is very comprehensive. The talk by the dietitians starts off by explaining what diabetes is and they then discuss the South African Food Based Dietary Guidelines, which are modified to suit diabetic patients. They also use posters with pictures of the various food groups and a plate model demonstrating how much each food group should be on a plate. They provide the patients with diet sheets which were developed by the DOH (Nutrition Department), which are available in both the English and Zulu languages. Occasionally they invite the interns to participate in their talks and the interns hand out their own pamphlets which they have developed (Nuns 2011).

Because of the large number of type 2 diabetic patients attending the clinic, group talks are hosted for these patients. At the end of the talk the patients are given an opportunity to ask questions. The present diabetic dietitian is currently working on a flip chart to use for the clinic (Nuns 2011) (See: Appendix H for “The diabetes talk held at a weekly diabetic clinic at the dietetics department at Addington Hospital” and: Appendix I for “The South African food based dietary guidelines modified by the diabetic dietitian at Addington Hospital”).

2.2.3 The Diabetic Clinic at Addington Hospital

There is just one Medical Officer (MO) who runs the diabetic clinic. The MO has run the clinic for the past eight years. She attends to the patients at the clinic. The patients are routed from all departments at Addington, including those who have been admitted to the wards. Some patients from some of the municipality clinics are also referred directly to the clinic (Mayet 2011).

The education of the patients is shared amongst the nursing staff, the dieticians, the occupational therapists and the educators of the insulin supply company. Posters and pamphlets are supplied by the insulin supply company (Mayet 2011). Since January 2011, the clinic is run only on two mornings a week, which is every Wednesday and Friday. Previously the clinic was open daily from Monday to Friday. Some of the patients who used to attend the clinic are now being attended to at the Poly Clinic at the hospital (Mayet 2011).

2.2.4 The South African Diabetes Association (SADA)

SADA is a national welfare organisation which provides support and information to persons with diabetes. SADA organises lectures, information groups, youth and family camps where people with diabetes and their family members can exchange ideas and experiences. SADA also acts in the general interest of people with diabetes by promoting public awareness; they lobby for better conditions and campaign for improved and more cost effective treatment (South African Diabetes Association 2011: Welcome to SADA).

SADA produces a quarterly magazine that is free to its members. The magazine provides up-to-date news on diabetes and how to manage it, dietary news and progress in research (South African Diabetes Association 2011: Welcome to SADA).

2.3 Related studies

The review of the literature identified varying characteristics and trends resulting in different articulations and interpretations of the information needs and information seeking behaviours of diabetic patients. Over the last ten years, a small number of theoretical and application studies which centred on the information needs and information seeking behaviour of diabetic patients have emerged.

Despite the plethora of debates concerning the information behaviour (needs and seeking behaviour) from several distinct disciplines, a study of the relevant international literature indicates that there are limited comparable studies on the information needs and information seeking behaviour of type 2 diabetic patients. Further, a survey of the South African literature reveals that no local studies have been done on the information needs and information seeking behaviour of type 2 diabetic patients. Any discussion of the complex phenomenon of information behaviour involves an exploration of the literature in many areas. The researcher therefore found it valuable to review literature that is not necessarily identical to the study, with the intention of establishing a relationship and connection between various search results.

2.3.1 Search terms

The following search terms, phrases and Boolean operators were used in the literature search:

- Information needs and diabetic patients;
- Information needs and type 2 diabetic patients;
- Information seeking and diabetic patients;
- Information seeking and type 2 diabetic patients;
- Diabetes education;
- Diabetes education and diagnosis;
- Diabetes information and challenges;
- Type 2 diabetes; and
- Type 2 diabetic patients.

2.3.2 Search Strategy

Most of the literature searches were initiated and conducted at the University of KwaZulu-Natal, Pietermaritzburg Campus. The search entailed searching through various relevant databases.

The databases such as Medline via PubMed, ProQuest, MD Consult, EBSCOHost Academic Search Complete, SABINET Online Resources, CSA Illumina, LISA: Library and Information Science Abstracts and Science Direct amongst others were accessed for finding references to articles in journals as well as the full-text electronic articles.

Both the National Department of Health website and the KwaZulu-Natal Healthweb Intranet proved to be particularly valuable with regard to the guidelines and protocols of diabetes.

The WebPages of the WHO and the Centres for Disease Control and Prevention (CDC) were accessed for statistical information.

Searches on Google Scholar proved to be fairly useful and a number of scholarly articles were retrieved.

The search was not limited to a specific time period or geographical area. Limited studies have been done locally and internationally on the information needs and seeking behaviour of diabetic patients.

2.3.3 Information behaviour

According to Fisher and Julien (2009: 317) information behaviour centres on people's information needs, specifically on how they seek, manage, provide and use this information, both actively and/or passively in their daily lives.

According to Case (2007: 5) information behaviour “encompasses information-seeking as well as the totality of other unintentional or passive behaviours (such as glimpsing or encountering information), as well as purposive behaviours that do not involve seeking, such as actively avoiding information” (Case 2007: 5).

Wilson (2000: 46) defines information behaviour as the totality of behaviour in relation to sources and channels of information, including both active and passive seeking, and information use. Thus, it includes face-to-face communication with others, as well as the passive reception of information as in, for example, watching television advertisements, without any intention of acting on the information given.

2.3.3.1 Information needs

In Chapter One (section 1.7.3) the term ‘information needs’ was defined for the purposes of this study and will be described in relation to the literature reviewed. In order to fully comprehend the concept ‘information needs’, the complexity of the term ‘information’ will be briefly discussed.

According to Case (2007: 42) the central difficulty regarding the concept ‘information’ is that the term has been used to express several different concepts. Wilson (2000: 659) described the concept ‘information’ as debateable without a distinct definition of the concept or explanations to distinguish the concept among alternatives.

Ikoja-Odongo and Mostert (2006: 147) cite Devadason and Lingam (1997) and Krikelas (1983) who affirm that information needs may be expressed, unexpressed or dormant, with dormant needs being those that the individual is unaware of, but may be activated by an information service provider. The research by Fourie (2010: 38) reflected the view of dormant and unrecognised information needs in her study of cancer patients and their families. This is discussed further in section 2.3.4.2 under trends in information needs and information seeking behaviour of diabetic patients.

Case (2007: 76-77) distinguishes between the objective and subjective viewpoint of information needs. From an objective viewpoint, an information need is seen as reflecting an objective reality with the intention of solving a problem to reduce existing uncertainty. These information needs therefore are relatively fixed. The subjective viewpoint indicates that information searches are prompted by a sense of a gap in knowledge, or by anxiety about a current situation (Case 2007: 76-77).

2.3.3.2 Information seeking behaviour and patterns

Wilson (2000: 49) defines information seeking behaviour as the purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems (such as a newspaper or a library), or with computer-based systems (such as the World Wide Web).

The conceptual model for this study as described in section 1.8.1, looks at the role and importance of the passive receipt of information compared to active information seeking (Longo 2005: 189; Longo et al. 2010: 337). Passive information seeking is when a person is unaware that they may need information. Active information seeking on the other hand is when a person recognises the need for information and decides to act on it. The active and passive information seeking of the current study's population is discussed in detail in Chapters Six and Seven.

2.3.3.3 Information behaviour in the South African context

Stilwell's (2010) study looked at the South African contributions on specific conceptual frameworks for information behaviour research. The study investigated "the extent and nature of research into information behaviour in the South African context" from 1980 to 2010 (Stilwell 2010: 4).

According to Stilwell (2010: 2) "the literature reflects a divide between information behaviour and information searching and retrieval". Stilwell (2010: 2) cites Wilson (2005), who argues that "information retrieval is concerned with ways of improving „the matching symbol strings in texts and queries for the retrieval of full-text documents and document surrogates', while information seeking involves the exploration of applicable information for tasks, research and everyday life". The provision of this information can be presented in a variety of formats, and according to Stilwell (2010: 2) who cites Wilson (2005), indicates that "more information is communicated by word of mouth than is ever retrieved from databases" (Stilwell 2010: 2). This aspect, with regard to the preferences in the use of packaged information, is very evident in this study on the information needs and information seeking behaviour of adult type 2 diabetic patients at Addington Hospital. This is discussed further in Chapters Six and Seven.

Stilwell (2010) describes information behaviour, as a broad term that encompasses "information needs, information seeking behaviour, information searching and information use" (Stilwell 2010: 3).

2.3.3.3.1 The conceptual and theoretical frameworks

Stilwell (2010: 7-9) showed that several conceptual and theoretical frameworks and models were used for a variety of studies.

Ikoja-Odongo and Mostert's (2006: 145) research reviewed major studies such as Wilson 1981, 1996; Krikelas 1983; Ellis 1989 and Kuhlthau 1991 to clarify concepts of information, information needs, information seeking and information use.

According to Stilwell (2010: 8), Kaniki (1995) drew on both Belkin's (1980) approach (ASK) the anomalous state of knowledge and Dervin's (1992) concept of "the knowledge gap or situation of uncertainty" for his research on information seeking behaviour. Other similar combinations of approaches were used by: Forbes' (1999) study on "The information needs of domestic workers employed in Clarendon,

Pietermaritzburg: an assessment”; Stilwell and Bell (2003) on “Information needs of learners at Emzaweni High School, Inadi, South Africa: a preliminary report on an assessment linked to the CHESP Community Based Learning model” and Dansoh, Stilwell and Leach (2007) on “The information was hard and tough: low-cost housing information and the Built Environment Support Group’s Tamboville project in Pietermaritzburg-Msunduzi, South Africa”.

Dervin’s gap-metaphor was also used in Du Preez’s and Fourie’s (2009) study on the information behaviour of consulting engineers in South Africa. Du Preez and Fourie (2009) also drew on Leckie, Pettigrew and Sylvain’s (1996) general model derived from research on engineers, health care professionals and lawyers (Stilwell 2010: 8). Bitso (2011) used this model for her PhD dissertation on “The information needs and information-seeking patterns of secondary level geography teachers in Lesotho: implications for information service”.

Wilson’s (1981; 1996 and 2000) approaches influenced Lwoga, Ngulube and Stilwell’s (2010) research on “Information needs and information seeking behaviour of small-scale farmers in Tanzania” (Stilwell 2010: 9).

Hadebe and Hoskins (2010) conceptual framework was based on Kuhlthau’s (2004) Information Search Process (ISP). The study was on the “Information seeking behaviour of master’s students using library electronic databases in the Faculty of Humanities, Development and Social Sciences at the University of KwaZulu-Natal” (Stilwell 2010: 9).

In Fourie’s (2010) study on “Interpreting the information behaviour of patients and families in palliative cancer care: a practical approach”, she drew on Wilson’s (1999) contribution (Stilwell 2010: 9). This study is discussed in detail in section 2.3.4.2.

Ikoja-Odongo and Mostert (2006: 154) indicated that each model has its own strengths and weaknesses, however not all of them are based on empirical tests. Wilson (1999: 250-251) maintains that models can be presented theoretically or conceptually, with the aim of providing a framework about a problem, whereby using a model enables specific research questions to be tested and researched.

2.3.4 Trends and methodologies employed in the review

The researcher identified various trends with regard to the information needs and information seeking behaviours of diabetic patients. Similar trends were identified amongst patients with cancer. For the purpose of this study four applicable trends were identified. These trends appeared in most of the literature reviewed.

Figure 2 below, is an illustration of the four trends identified and they are:

- The active and passive seeking of information;
- Provision of information at the time of diagnosis and post diagnosis;
- Patient empowerment, education and barriers; and

- Patient preferences in information sources.

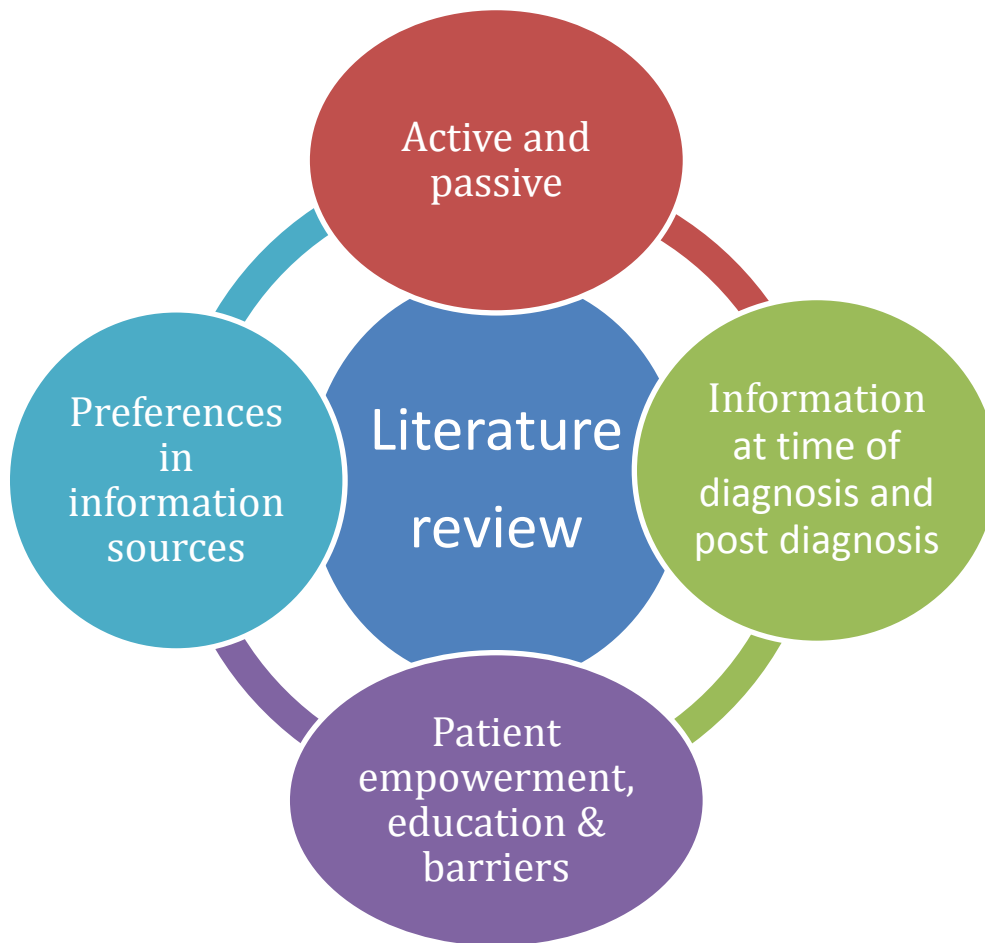


Figure 2. Trends in information needs and information seeking behaviour of diabetic patients

2.3.4.1 The active and passive information seeking

The study conducted by Longo et al. (2010) on the health information seeking, receipt and use in diabetes self-management, is particularly relevant to the researcher's study on the information needs and information seeking behaviour of type 2 adult diabetic patients. The researcher drew on and used Longo's (2010) Health Information Model for the current study. The focus of Longo et al. (2010) study was on the patients' preferences for sources of health information. The study was also aimed at how individuals with diabetes seek and use healthcare information. Five themes emerged from the study which can be summarised as follows: the passive receipt of information; patients tendency to weave their own information web; indications of the patients' personal relationships with the healthcare professionals; the impact health

literacy has on the patients' ability to understand and use information; and how the patients' personal relationships help them understand and use information.

The methodology used in this qualitative study centred on focus group interviews. Participants from diverse age groups, race and sex were recruited with the aim of attaining the broadest possible range of insight to ensure diversity in age, race, and sex (Longo et al. 2010: 335).

The participants identified a wide range of information sources, which not only included the traditional health information resources, but also information from the internet, television, newspapers, friends and the healthcare professionals. Many of the focus group participants reported on the passive receipt of information. Here the individuals did not actively engage in information seeking behaviour, however they came "across relevant health information about their diabetes" by television viewing or reading a newspaper or magazine. Some of the participants actively sought out important information sources for managing their diabetes. These participants identified health-related sites, books, pamphlets and printed information provided by the healthcare professionals (Longo et al. 2010: 337).

According to Longo et al. (2009), the health information seeking behaviour of breast cancer patients, indicated that 71% of the respondents actively sought out information, all were able to use the information and 81% utilised the information to make healthcare decisions.

Pre-tested questions were used on a survey of 150 breast-cancer survivors. The participants were recruited from the Midwest and North-east regions of the United States.

Boissin (2005) conducted a study on the use of the internet on the information seeking behaviour of French general practitioners. Interestingly, the results showed that the general practitioners (GPs) either used the active mode or passive mode of seeking information. With the active mode, the GPs seek out information on their own initiative, while passive information relates to that which the GPs did not ask for. While Boissin's (2005) article was on the information seeking behaviour of general practitioners, the article reflected on the active or passive mode of seeking information.

2.3.4.2 Provision of information at the time of diagnosis and post diagnosis

Peel et al. (2004) study focused on newly diagnosed type 2 diabetic patients. Current authenticity suggests that at the time of diagnosis the amount of information provided was too much as the patient was also dealing with the emotional aspect of the diagnosis. Some research also suggests that the emotional stress the patient encounters

at the time of the diagnosis, directly impacts on the patient's ability to retain the information that is provided (Peel et al. 2004: 269).

In-depth interviews were carried out on a sample of 40 newly diagnosed patients with type 2 diabetes. Thematic analysis was used to analyse the data collected.

However the results of Peel et al. (2004) research contradicted these outcomes. The authors identified three themes which they classified as "three main 'routes' to diagnoses". These 'routes' were the 'suspected diabetes' route; 'illness' route and 'routine' route. The outcomes indicated that irrespective of their route to diagnosis, the patient wanted more information about the management of diabetes at the time of the diagnosis (Peel et al. 2004: 269).

Fourie's (2008) exploratory study looked at the information needs and information behaviour of cancer patients and their family members. According to Fourie (2008), while there is an understanding that gaps exist in information provision, there are degrees of "frustrations amongst patients and family members with information provision, information sources and expressions of anxiety" (Fourie 2008: Introduction).

The study also indicated the reasons for information needs and information seeking amongst cancer patients and their family members, and this included the unexpressed and dormant information needs, an unawareness of information needs and difficulty in expressing information needs (Fourie 2008: Discussion and reasons for seeking information).

The methodology used in Fourie's (2008) research was an exploratory study with a purposive, convenience sample of patients and their family members in a cancer palliative care setting in Pretoria. Individual semi-structured interviews were conducted on patients, family members and healthcare professionals. The study was conducted on 'in' and 'out' patients who were treated in a private medical oncology centre. The healthcare professionals included in the study were the "treating oncologists and a doctor who specialised in palliative care". "The nursing staff were from the medical oncology centre and the oncology hospital wards" (Fourie 2008: Exploratory study).

Semi-structured individual interviews were conducted on patients and family members. For the healthcare professionals, individual interviews were conducted (Fourie 2008: Methods for data collection).

The results of the exploratory study showed that while there is no cure for their specific condition, "patients and family members expressed different levels of, and fluctuating manifestations of, information need" (Fourie 2008: Methods for data collection).

There is also an increased urgency to meet the information needs and information seeking behaviour of cancer patients. The study confirmed the complexity of

information behaviour amongst cancer patients. The study displayed the varying differences in the information needs and information seeking behaviour amongst the patients, “as well as the difference between people sharing the same cancer context”. “Research has stressed the importance of helping patients and their families to contextualise information according to individual situations and needs” (Fourie 2008: Discussion).

An explorative study by Fourie (2010), showed the differences between the information needs reported by the patients and the families, and that of the healthcare professionals. The study reflected on how healthcare settings, combined with the support of libraries, can make a difference in supporting the information behaviour of cancer patients and their families (Fourie 2010: 34).

Fourie’s (2010) study interestingly discussed the unrecognised information needs of the patients, their information needs at different stages of their disease, information on emotional and psycho-social issues, information on issues that are difficult to discuss, and the need for individualisation and contextualising (Fourie 2010: 34-44).

The study was conducted at a private medical oncology clinic and two oncology wards at a private hospital in Pretoria (Fourie 2010: 36). The study was based on semi-structured interviews that were conducted by an oncology social worker. The author conducted individual interviews with the healthcare professionals at the hospital (Fourie 2010: 36).

Fourie’s (2010) study revealed the following views and discussions on the information behaviour of the cancer patients and their families (Fourie 2010: 38-42).

- Dormant or unrecognised information needs

“The patients and their families do not always recognise that they have a need for information or that information may make a difference”. According to Fourie (2010), patients and their families need to be made aware that information is available and could make a difference to them (Fourie 2010: 38).

- Different information needs at different stages of the disease

Here healthcare professionals should be aware that “there is no one-off need for information, and they should ensure that this is acknowledged in the communication of information to patients” (Fourie 2010: 39).

Information that is provided to the patient at the time of the diagnosis is not all the information they need, however, the patient will need to seek for information at different stages of their disease (Fourie 2010: 39-40).

- Information on emotional and psych-social issues

Fourie’s (2010) study revealed that at the time of the diagnosis, cancer patients and their families require factual information with regard to the type of cancer, the

prognosis, treatment and side effects. The study indicated that their “emotional experiences are seldom expressed in terms of a need for information” (Fourie 2010: 40).

- Information on issues difficult to discuss

There are many issues the cancer patient may choose not to discuss, such as their sexual well-being or the experience of death. These patients, if they are inclined to discuss such issues, should be directed to sources they can consult (Fourie 2010: 41).

- Individualisation and contextualising information

The idea of providing individual patients with tailor-made information packages may seem a little unreasonable for healthcare professionals. However according to Fourie (2010) if this service is offered via a portal, whereby patients can “make up their own packages according to information packages prescribed by doctors, oncologists, social workers and oncology nurses, it might be easier” (Fourie 2010: 42).

Stewart et al. (2004) study examined gender differences in health information needs in patients recovering from an acute ischemic coronary (ICE) event. The study was conducted on consecutive patients from 12 coronary intensive care units (CICUs) across Ontario, Canada. Patients who were unable or too ill to approach and were unable to read or speak English were excluded from the study (Stewart et al. 2004: 43).

The female patients after ICE, reported receiving “much less information than they wanted from all health professionals”. The male patients reported significantly more information received and greater satisfaction with healthcare practitioners meeting their information needs (Stewart et al. 2004: 42).

Stewart et al. (2004) study indicated that the male patients reported receiving sufficient information on the role of each doctor, test results, treatments and how their families could support their lifestyle changes. They however required more information on sexual function. The female patients indicated they required more information with regard to angina and hypertension. The results of the study revealed that the patients wanted information on topics that were most salient to them (Stewart et al. 2004: 42).

The limited number of literature reported on information needs and information seeking behaviour of type 2 diabetic patients, necessitated the need to explore literature in other related areas. The literature on cancer and other related chronic diseases were used in the study to establish a relationship and connection between diabetes and these chronic diseases.

2.3.4.3 Patient empowerment, education and barriers

“You can teach me, but you can’t make me” (Funnell and Weiss 2008: 75). Of interest and of benefit to the reluctant patient are Funnell and Weiss’ (2008) study on the empowerment of the diabetic patient. Despite the enormous strides that have been made with regard to the treatment of diabetes, studies have indicated that patients do not achieve optimal outcomes (Funnell and Weiss 2008: 75). The patients were not familiar with any of the current literature on diabetes educational theories. One patient in particular had construed for herself that only she and not the healthcare professionals nor her family members had the power to manage her diabetes. “She understood that diabetes is a self-managed disease, and that *she* was the self. Her statement described empowerment perfectly” (Funnell and Weiss 2008: 75).

Funnell and Weiss (2008) defined patient empowerment as “helping patients discover and develop the inherent capacity to be responsible for their own health and life (Funnell and Weiss 2008: 75). Their article outlines four fundamental lessons that need to be addressed as part of the patients’ education and provides a straight-forward approach which the authors referred to as a LIFE plan to assist the patients in taking charge of their diabetes (Funnell and Weiss 2008: 75).

The LIFE approach is comprised of four clear steps which include: learn about diabetes; identify three guiding principles which are the role, flexibility and targets; formulate a personal self-management plan and experiment with and evaluate the plan (Funnell and Weiss 2008: 75).

Pooley et al. (2001) quantitative questionnaire survey focussed on the nature of the patient-practitioner relationship and the implications of this relationship with regard to patient empowerment and the effective self-management of diabetes. The practitioners considered a lack of time resulted in their inability to effectively deal with patients’ concerns. The patients in turn, considered it was unrealistic to prolong a consultation by asking too many questions (Pooley et al. 2001: 320). Interestingly the results of the survey indicated that both the patients and the practitioners displayed similar concerns and both groups identified the same problems in the “delivery of care for people with diabetes” (Pooley et al. 2001: 324).

Patient education has been examined by a large cohort of health researchers. Ghorob et al. (2011) study investigated the effectiveness of patients with diabetes as peer coaches in the provision of self-management support and education to patients. The study was a randomised controlled trial. The potential peer coaches were patients with type 2 diabetes, who were able to manage their diabetes and had personality traits that were suitable for working with patients (Gharob et al. 2011: 3).

Gillett et al. (2010) investigated the “long term clinical and cost effectiveness of the diabetes education and self-management for ongoing and newly diagnosed (DESMOND) intervention compared with usual care in people with newly diagnosed type 2 diabetes” (Gillett et al. 2010: 1). The participants of the study were patients

with newly diagnosed type 2 diabetes. The results of the study showed that the programme is a cost effective intervention for newly diagnosed type 2 diabetic patients. The study also indicated that patients who attended the DESMOND sessions were encouraged to decide on their own goals and these outcomes significantly improved in the trials (Gillett et al. 2010: 9).

The study conducted by Cooper, Booth and Hill (2003) indicated that patients need to develop a range of abilities that will enable them to take greater control over the treatment of their disease. “This requires education that promotes health whilst respecting the individuals’ perceived needs and voluntary choices” (Cooper, Booth and Hill 2003: 191).

Cooper, Booth and Hill’s (2003) study was based on the findings of a research trial on educational intervention. It focussed on the patients’ perspectives of what they valued about the intervention. The results indicated that intervention was only clinically effective over a short period of time. The study also found that “whilst patients can be educated toward greater autonomy, not all health professionals were ready to work in partnership with them” (Cooper, Booth and Hill 2003: 191).

A randomised controlled wait-list was conducted, and the treatment was staggered over a period of 14 months. Participants were blindly and randomly allocated to the intervention at zero months (short-term trial group) and at six months (short-term control group) (Cooper, Booth and Hill 2003: 192).

The findings disclosed that whilst education can empower patients to take responsibility for the management of their disease, they cannot achieve long-term outcomes without the cooperation of health professionals who can support and facilitate achievement of patients’ goals (Cooper, Booth and Hill 2003: 205).

Schillinger et al. (2002) study examined the association between health literacy and diabetes outcomes among patients with type 2 diabetes. Little is known about the extent to which health literacy affects clinical health outcomes (Schillinger et al. 2003: 475).

The study commenced at two primary care clinics at San Francisco General Hospital. The participants were from a cross-sectional observational study of 408 English and Spanish speaking type 2 diabetic patients who were older than 30 years old (Schillinger et al. 2003: 475).

The results of the study indicated that health literacy was independently associated with glycaemic control (Schillinger et al. 2003: 479). From the public health perspective, health literacy according to the results of the study may actually represent an important variable explaining the prevalence of poor health outcomes amongst patients with type 2 diabetes. Other factors that may also contribute to poor diabetes outcomes are the socio-economic, racial and ethnic disparities in the United States (Schillinger et al. 2003: 480).

Holstrom and Rosenqvist (2005) study disclosed that despite intensive education and support, misunderstandings about both the illness and treatment amongst type 2 diabetics seemed to be common.

Eighteen authentic encounters between a patient with diabetes and a physician, or a diabetic nurse were videotaped in a Swedish survey. The video-recordings and transcribed reflections were then thematically analysed (Holstrom and Rosenqvist 2005: 149-151).

Five themes emerged from the results of the data analysis and these were:

- “Type 2 diabetes is not ‚real diabetes’. A common theme in the study showed that the patients considered type 1 diabetes as being “real diabetes” and not type 2 diabetes. The patients revealed several misunderstandings of the cause of diabetes, and only a few knew that diabetes is hereditary and that obesity is a precipitating factor. The patients stated that they did not feel ill with their type 2 diabetes, hence the reasoning behind their statement “that type 2 diabetes is not real diabetes” (Holstrom and Rosenqvist 2005: 149).
- Complications - horror visions or suppressions. While the threat of complications was always in the back of the patients’ mind, like foot and eye complications, there were those patients who did know that they were affected by common complications related to diabetes. Holstrom and Rosenqvist (2005: 150) commented on one patient “who took medication for angina pectoris, did not know that she suffered from this complication”. Another patient who suffered from impotence for several years was unaware that this is a common problem amongst diabetic men (Holstrom and Rosenqvist 2005: 150).
- The self - monitoring of blood glucose and medication is a routine and not a learning tool. Almost all of the patients in this study monitored their own blood glucose at home. However only a few knew why they performed this routine and what the benefits were. They did not see this as a learning tool that could lead to them taking charge of their diabetes and treatment (Holstrom and Rosenqvist 2005: 150).
- Diet - the important aspect is to reduce fat. Holstrom and Rosenqvist’s (2005) study revealed that there were several misunderstanding about diet and eating habits. Patients did not understand how the composition of a meal affected their blood glucose levels. While many patients were well informed that it is advantageous for obese people with diabetes to lose weight, one overweight person was so afraid of getting hypoglycaemia (low blood sugar levels), he refused to reduce his food intake. One woman was surprised about her high sugar levels after she had eaten four sandwiches, and was unaware that the

carbohydrates in the bread raises blood sugar levels (Holstrom and Rosenqvist 2005: 150-151).

- „Physical exercise is good, they tell us” (Holstrom and Rosenqvist 2005: 151). All patients were aware that physical exercise was good for their well-being, however they could not see the relationship between blood glucose levels, food intake and exercise.

2.3.4.4 Patient preferences in information sources

Previous studies have been done on the information needs and information seeking behaviour of patients with various health conditions such as cancer patients (McLoughlin 1994, Leydon et al. 2000 and Fourie 2010). Leydon et al. (2000) study focussed on exploring the reasons why cancer patients did not want to seek information beyond what was offered by the doctor during a consultation. Here, the patients expressed their faith in the doctor's medical expertise and this precluded their need to seek further information. McLoughlin's (1994) masters thesis aimed at determining the needs of cancer patients, who required relevant information within a limited time period. The results of the study revealed that cancer patients expressed a need for more information about most aspects of their disease and therefore there was a need for structured information provision to cancer patients. A limitation of the study was that the participants comprised mostly of white patients, hence it was not reflective of the South African population.

The study of Longo et al. (2009) revealed that interpersonal information was more often cited than the use of the internet or the traditional print and broadcast media. The study also showed that many of the patients sought or received information from other patients or support groups and 83% were able to use the information and make healthcare decisions (Longo et al. 2009: 193-195).

Some interesting contributions which focussed on the information needs and information seeking behaviour of cancer patients, contrasted explicitly from that of the diabetic patient. Many of the studies indicated the cancer patients' awareness of the severity of the disease and their need to seek out additional information. However, the literature on the information behaviour of diabetic patients revealed degrees of indifference towards the severity of the disease. This could be a direct result of the nature of each of the medical conditions.

Fourie (2008) indicated that studies by other researchers have shown that more patients are inclined to search the internet for their information (Fourie 2008: 360).

Fourie's (2010) study revealed that while cancer patients may prefer to receive information by word-of-mouth and personal contact, the internet and conventional methods such as brochures may also be useful (Fourie 2010: 39).

2.4 Summary of the chapter

To set Chapter Two in context, the background to the health information system was provided. Within the background, the diabetic information provision services by the KwaZulu-Natal Department of Health, the Dietetics Department and the Diabetic Clinic were outlined.

The review of the literature in Chapter two, helped to conceptualise some of the key terms related to this study that were discussed in Chapter One. Further information behaviour in the South African context was discussed, including a brief overview of the conceptual and theoretical frameworks covered in these South African studies. The review of the literature considered various trends that have been investigated in relation to the study and to indicate where the present study fits into these broader debates, thereby justifying the significance of the study.

CHAPTER THREE: RESEARCH METHODS USED

“Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity” (World Health Organisation, 1948).

3.1 Introduction

The research methodology focuses on the research process and the type of tools and procedures to be used (Babbie and Mouton 2001: 75).

A large part of this study focussed on a qualitative methodological approach, with some elements of a quantitative methodology.

According to Babbie and Mouton (2001: 270) qualitative research is conducted in a natural setting with a focus on the process rather than on the outcome. It involves in-depth descriptions and understandings of actions and events. The research process is often inductive in its approach, resulting in the generation of new hypotheses and theories.

Quantitative studies measure phenomena using numbers in conjunction with statistical procedures to process data and summarise results (Terre Blanche and Durrheim 1999: 42). Quantitative research includes the use of statistical analysis (Neuman 2006: 457). The quantitative approach will enable the researcher to accurately describe the patients’ needs and seeking patterns.

Triangulation is considered to be one of the better ways to enhance validity and reliability in qualitative and quantitative research (Babbie and Mouton 2001: 275). Triangulation enables the researcher to “observe something from different angles or viewpoints” (Neuman 2006: 149). Data that is collected by means of several strategies and methods strengthens the researcher’s findings, hence enabling the researcher to come up with reliable conclusions (Babbie and Mouton 2001: 275 and Busha and Harter 1980: 88).

3.2 Population

According to Busha and Harter (1980: 56-57) the concept ‘population’ can be defined as “any set of persons or objects” that have at least one characteristic in common. Bless and Higson-Smith (2006: 98) defines a population as an entire set of objects or people which are the focus of the research “and about which the researcher wants to determine some characteristics”.

Drawing from the definitions above, a population is a group of individuals or items that share one or more characteristics from which data can be gathered and analysed. The population for this study were type 2 diabetic patients at Addington Hospital.

The following features of the population to be surveyed are discussed below.

3.2.1 Size of the population

The research population consisted of 83 participants. A list of the patient population was obtained from Patient Administration and Records Department at Addington Hospital. Included in the research were 74 adult patients with type 2 diabetes of which 69 patients responded, one medical practitioner, two dieticians and four registered nurses. Given the size of the population the entire population was studied.

3.2.2 Characteristics and criteria of the population

The characteristics of the population discussed include the adult type 2 diabetic patients, and the healthcare professionals.

3.2.2.1 Adult type 2 diabetic patients

The first elements of analysis were the adult type 2 diabetic patients who fit the following criteria:

- Adult patients who are legally 18 years and older;
- Out patients (not hospitalised) at Addington Hospital; and
- Type 2 diabetic patients who are non-insulin dependent.

3.2.2.2 Healthcare professionals

The specific inclusion criteria for the healthcare professionals were, besides their qualifications within their professions, that they should have experience of working with patients with type 2 diabetes.

3.3 Instrumentation

The study was conducted by means of a self-administered questionnaire and both face-to-face and telephonic interviews. Before data collection, the questionnaire and the interview schedule were pre-tested to eliminate any ambiguities and mistakes. It is essential to mention that the qualitative data collection (individual interviews with the patients) was done entirely by the researcher of this thesis. There are numerous advantages to personally collecting the research data. By doing this, the responses are more likely to make more sense as to what was said and how it was said.

3.3.1 Self-administered questionnaire

Two self-administered questionnaires which consisted mainly of limited closed or pre-coded questions, with some open-ended questions, were designed to obtain information on the patients' information needs from the perspective of the health-care professionals.

According to Welman et al. et al. (2005: 175), a closed or pre-coded question is one that provides the respondent with a range of answers to choose from. The respondents were provided with fixed responses and were required to tick the appropriate boxes.

With open-ended self-completed questions the respondents were asked a question and a line or space left for the answer. There is no prior list of answers (Welman et al. 2005: 174).

The self-administered questionnaire for the medical doctor and nursing staff (See: Appendix E for the "Self-administered questionnaire for the medical doctor and nursing staff") was four pages long and consisted of nine questions. The self-administered questionnaire for the dietician (See: Appendix F for the "Self-administered questionnaire for the dietician") was four pages long and consisted of eight questions. Both questionnaires were semi-structured and included both open-ended and close-ended questionnaires. The purpose of these questionnaires was to find out what types of diabetic information was provided to the diabetic patients from the healthcare staff.

3.3.2 Face-to-face and telephonic interviews

The qualitative aspect of the study was conducted by semi-structured interviews (See: Appendix D for the "The patient interview schedule") with the adult type 2 diabetic patients in a face-to-face setting. Telephonic interviews using the same semi-structured interview questions were conducted on patients who were dispersed over a vast geographical area or were not available for the face-to-face interview. The advantage of a telephone interview is it consumes less time and money. It also allows the respondent to "be more honest in giving socially disapproved answers if they don't have to look an interviewer in the eye" (Babbie and Mouton 2001: 257).

3.3.2.1 The interview schedule

The interview schedule (See: Appendix D for the "The patient interview schedule") was 11 pages long and consisted of 21 questions. The intention of the interview was to obtain a better understanding of how and where diabetic patients obtain their information in order to contribute to the successful management of their diabetes. Most of the questions required the respondent to answer "Yes" or "No" and to provide explanations for his or her answers. The last question provided the respondents with an opportunity to add their own views.

3.4 Pre-testing the questionnaire

A pre-test enables the researcher to establish how well the questions or instructions are understood and interpreted by the respondents. A pre-test will enable the researcher to identify and eliminate ambiguous and ambivalent questions that tend to be misunderstood by the respondents (Babbie 1994: 152).

3.4.1 Population for the pre-test

The population for the pre-test were three diabetic patients, one attending MO and one nurse from the Medical Outpatients Department (MOPD) at Addington Hospital. A pre-test was done on one dietician from the dietetics department at Addington Hospital. The sample that was selected for the pre-test was as similar as possible to the intended population. The pre-test respondents were encouraged to make suggestions on the structure, wording, clarity and relevance of the questions with the intention of improving the instrument.

3.4.2 Changes resulting from the pre-test

The respondents of the pre-test provided positive comments and suggestions and some minor changes to the original questionnaires and interview schedule were made.

3.5 Administering the research instruments

The revised questionnaires and the face-to-face and telephonic interview schedules were administered once the necessary changes were made from the pre-test.

3.5.1 Administering the questionnaires

Once the two self-administered questionnaires were finalised they were hand delivered on 2 November 2011 to the seven respondents that made up the population at Addington Hospital. The covering letter (See: Appendix A) detailed the objective of the study and assured the respondents of their confidentiality and anonymity. Copies of the completed questionnaires were collected by the researcher on 4 November 2011.

3.5.2 Administering the interview schedule

Most of the interviews were conducted telephonically in the evenings and over the weekends. Appointments were made to schedule the interviews when it was a convenient time for the respondents. Five respondents declined to participate in the interview. Some of the interviews were conducted at the hospital on a Friday and Wednesday.

All of the respondents, bar the five who declined to be interviewed, and those who were interviewed at the hospital were willing to answer the questions telephonically. The interview schedule commenced with the researcher reading out the covering

letters (See: Appendix B and Appendix C) which explained the aim of the study and assured the respondents of their confidentiality and anonymity. The time was recorded at the start and close of the interview. The interviews commenced on 15 October 2011 and were completed on the 7 November 2011.

The MO and four of the nursing staff from the diabetic clinic completed the self-administered questionnaire within two days of delivery. Copies of the questionnaires were hand delivered to the healthcare professionals and collected from them two days later.

The diabetic dietician and the manager of the dietetics department completed the questionnaire on the same day of delivery. The manager of the dietetics department wanted to be included in the survey and her input contributed to the outcome of the survey.

3.6 Data analysis

A combination of content analysis and qualitative coding was used to interpret the responses to open questions. According to Neuman (2004: 34) content analysis is a “technique for examining information or content in written or symbolic material”.

The process began by reading each interview transcript independently in order to obtain a sense of the content. Key phrases or concepts such as a string of words, a sentence, or several sentences bound together by their content or meaning were identified. These phrases or concepts were sorted into categories.

Thematic analysis was used to analyse the interview data, informed by a constant comparative approach, in other words, contemporaneous data collection and analysis. It has been suggested that thematic analysis is more holistic than other forms of qualitative analysis, because it can capture a substantial proportion of a data corpus, and it allows for the analysis of the same data in several ways (Marks and Yardley 2004: 57).

The data was entered into a computer and analysed using SPSS. The data was analysed in terms of frequency of results and presented in the form of tables, bar graphs or pie charts. The cross-tabulations of the results of certain questions are presented in the form of tables.

3.7 Evaluation of the research method

The evaluation of a research method will enable the researcher to discover if it measured what it intended to. The main issue to consider before applying any method of research is to determine whether the research is likely to be reliable and valid. Evaluation therefore requires assessing the reliability and validity of the research method and the instrumentation.

According to Gay, Mills and Airasian (2009: 154), if the researchers' interpretations of the data collected are to be considered valuable, then the measuring instruments used to collect the data must be both valid and reliable. Hence the value of any kind of research depends on the credibility of its research findings. Some studies that were reviewed for this study indicated how issues of reliability and validity were incorporated in their research.

Reliability is concerned with the findings of the research and relates to the credibility of the findings. Reliability refers to the extent to which a test consistently measures what it sets out to measure, while at the same time generating the same result (Welman et al. 2005: 145).

Validity is the extent to which the research findings accurately represent what is actually happening in the situation. "An effect or test is valid if it demonstrates or measures what the researcher thinks or claims it does" (Welman et al. 2005: 142).

Validity is the degree to which the data can accurately gauge what the researcher is trying to measure (Gay, Mills and Airasian 2009: 375).

In this study, the value of the research findings was confirmed by addressing the issues of both reliability and validity in the following manner:

- Triangulation was applied by using the individual interview schedule on the patients and the self-administered questionnaires were completed by the MO, the nursing staff and the diabetic dietician. The findings from these sources of data were compared and the high response rate boosted confidence in the research findings.
- The questions asked in the patient interview schedule were drawn up after studying Longo et al. (2010) Health Information Model, which formed the conceptual framework for this study.
- The research instruments were pre-tested with the aim of increasing the validity. The instruments were pre-tested on a sample similar (MOPD diabetic patients) to the intended study population. The comments from the pre-test were used to refine the final instruments.
- The questions were formulated and constructed in a concise manner in order to avoid ambiguities. The explanation on the nature of the study was provided to the respondents. The intention was to show the relevance and usefulness the study may have.
- All of the respondents were assured of their confidentiality.

3.8 Ethical considerations

The Addington Hospital Ethics Committee, The KwaZulu-Natal Department of Health: Health Research Committee and the University of KwaZulu-Natal Humanities and Social Sciences Research Ethics Committee had approved the study (see:

Appendix I for “The University of KwaZulu-Natal Ethics Committee approval letter”).

Every effort was made to ensure that participants were informed about the study and participant confidentiality was protected. Upon entry into the study, participants were informed of the nature of the study (see: Appendix A for “The patients and healthcare professionals introduction letter and informed consent”).

3.8 Summary of the chapter

Chapter Three presented and discussed the research methods that were employed in this study. The chapter described the broader research methodologies and the specific research method that was used in the study. The study followed the qualitative and quantitative methodologies which are explained in this chapter. It was significant to explain the population for this study which were the adult type 2 diabetic patients. The study surveyed the entire population of type 2 adult diabetic patients. Descriptions of the population surveyed, instruments, their form and categories of questions have been provided. The data collection procedures, how the pre-test study was conducted and the evaluation of the research method, including the issues of reliability and validity have been discussed. The following chapter presents the results of the study.

CHAPTER FOUR: RESULTS OF THE STUDY

“The doctor of the future will give no medicine, but will involve the patient in the proper use of food, fresh air and exercise” (*Thomas Edison*).

4.1 Introduction

This chapter presents and illustrates an in-depth explanation and discussion of the results of the study. The objective of the study was to investigate the information needs and information seeking behaviour of adult diabetic patients at Addington Hospital, Durban. The research question was to determine how a better understanding of the information needs and information seeking behaviour of diabetic patients can contribute to the successful management of their diabetes.

4.2 Response rate

The results of the survey of the population of adult type 2 diabetic patients and the healthcare professionals are reported.

The survey was conducted by semi-structured telephonic and face-to-face individual interviews with the adult type 2 diabetic patients. Two dietitians, the medical officer and four nursing staff answered the short self-administered questionnaires.

Attempts were made to interview the entire population of 74 type 2 diabetic patients who attend the diabetic clinic at Addington Hospital. Five of the 74 participants declined to participate in the interview. The results of the individual interviews were based on the responses from the 69 patients who participated in the survey. The participants were able to choose the day and time convenient to them for the telephone interviews.

According to Babbie and Mouton (2001: 261) a response rate of 70% is considered “very good”. These opinions have little statistical basis and are used as a rough guide for researchers (Babbie and Mouton 2001: 261).

The response rates for the patient interviews and the healthcare professionals were 93.3% and 100% respectively. Using the guide above, it may be concluded that the response rates for the survey were excellent.

The relatively high response rate for the healthcare professionals may be attributed to the fact that the researcher was the former medical librarian at Addington Hospital and was known to all of the healthcare professionals. Factors contributing to the high response rates of the diabetic patients, specifically those who were interviewed at the

hospital, were persuaded by the MO at the clinic to participate in the researcher's interview.

4.3 Descriptive statistics and data preparation

Variables used to characterise the sample included age, gender, race, language, duration of diabetes condition and type of treatment for diabetes.

For each of the open-ended (qualitative) questions, themes were formulated and sorted into categories. The data collected was coded, analysed and interpreted using the quantitative analysis software, IBM SPSS statistics version 19 for Windows.

The symbol N indicates the number of respondents that have answered a question and frequencies are rounded off to one decimal place.

4.4 Results from the patient survey

The interview schedule was arranged to encompass the following research areas which were:

- The demographic data of the type 2 diabetic patients such as gender, age, race and language;
- The number of years since first diagnosed with diabetes and the type of medication administered;
- Who did the patients receive their initial diabetes education from?;
- Did they rely heavily on the Diabetic Clinic doctor and nursing staff for their diabetic education?;
- Were they satisfied with how information is conveyed by the doctor and nursing staff?;
- What information did they need to seek out?;
- What were their patterns of information sources and information seeking?;
- Whether they actively sought out information;
- Whether they obtained information passively;
- Their use of traditional mass media such as the television, radio, newspapers, magazines, talking to other diabetics to find information;
- Their use of the internet to find information;
- Their use of the public library to find information; and
- Establishing whether the pamphlets repackaged by the DOH were in an understandable format for patients.

4.4.1 Demographic data

The data presented in this section provides a brief outline of the main demographic details of the adult type 2 diabetic patients who participated in the study.

4.4.1.1 Gender and age category of respondents

The accompanying Tables (2 and 3) illustrate the responses that were given to question two. These questions were asked to establish the gender and age categories of the respondents.

Table 2: Gender of respondents

Gender	Frequency (N=69)	Percentage (%)
Female	38	55.1
Male	31	44.9
Total	69	100

Of the 69 participants, 31 (44.9%) were male and 38 (55.1%) were female and their ages ranged from 30 to 70 years and over. There were proportionally more female respondents than male respondents.

Table 3: Age of respondents

Age category	Frequency (N=69)	Percentage (%)
50-59 years	28	40.6
60-69 years	19	27.5
40-49 years	14	20.3
30-39 years	5	7.2
70 years and over	3	4.3
Total	69	100

The majority of respondents were from the 50 to 59 years age group, which represented 28 (40.6%) of the respondents. This is followed by the second largest group of 19 (27.5%) respondents who were in the 60 to 69 years age group. The third largest group with 14 (20.3) respondents were in the 40 to 49 years age group. Only five (7.2%) and three (4.3%) of the respondents were in the 30 to 39 and 70 years and over age groups respectively.

4.4.1.2 Race and language of respondents

In question 4, the respondents' race groups as noted.

Table 4: Race category of respondents

Race category	Frequency (N=69)	Percentage (%)
Indian	31	44.9
African	21	30.4
Coloured	9	13
White	8	11.6
Total	69	100

The largest number of respondents, 31 (44.9%) were from the Indian community followed by the African community with 21 (30.4%) respondents. The number of diabetics amongst the Coloured and White communities were relatively close with nine (13.0%) and eight (11.6%) respectively. The clinic was mainly used by lower socio-economic groups which included the entire race categories listed above.

Table 5: First language category of respondents

Language	Frequency (N=69)	Percentage (%)
English	50	72.5
Zulu	19	27.5
Total	69	100

The respondents were asked in question 5, to indicate their first language. The majority of the respondents' 50 (72.5%) first language was English while 19 (27.5%) of the respondents' first language was Zulu. The patients did not indicate any other language as a first language. All except for one respondent answered the questions in English. This respondent had a hearing impairment and her caretaker had translated the questions into sign language.

4.4.2 Duration of diabetes and medication administered

This section presents the results on the number of years since the respondents were first diagnosed with type 2 diabetes. The results also indicated whether they were on oral medication and/or insulin.

4.4.2.1 Duration since first diagnosed with diabetes

The respondents were asked in question 6 to indicate the number of years since they were first diagnosed with diabetes.

Table 6: Duration since first diagnosed with diabetes

How long since first diagnosed with diabetes	Frequency (N=69)	Percentage (%)
5 years or more	65	94.2
3 years or more, but less than 4 years	2	2.9
2 years or more, but less than 3 years	1	1.4
4 years or more, but less than 5 years	1	1.4
Total	69	100

Table 6 reveals that a majority of 65 (94.2%) respondents had been diagnosed with diabetes for a period of five years or more. These respondents' responses to the questions on information needs and information seeking have changed since they were first diagnosed and their responses will be explained in detail in the questions to follow.

4.4.2.2 Type of medication administered

The respondents were asked to indicate if they were on oral medication and/or insulin. The results reflected that a majority of the patients were on both the oral medication and insulin.

Table 7: Oral medication and/or insulin taken by respondents

Medication	Frequency (N=69)			Percentage (%)		
	Yes	No	Total	Yes	No	Total
Insulin	59	10	69	85.5	14.5	100
Oral	44	25	69	63.8	36.2	100

Table 7 illustrates that 59 (85.5%) of respondents were on insulin and 10 (14.5%) were only on oral medication. Of the 44 (63.8%) respondents who were on oral

medication 25 (36.2%) were only on insulin. This implies that 49 (71%) were on both the oral medication and insulin. This number was calculated as follows: the total number of respondents minus/subtract the number of patients who were only on oral medication, which equals 49, therefore (69-10=59).

4.4.3 Diabetic information needs and information seeking behaviour

To fully comprehend the information seeking behaviour of type 2 diabetic patients, it is important to understand their information needs. Responses to the questions asking where the respondents obtained their initial diabetes education, whether they relied heavily on the healthcare professionals for their diabetic education and their passive and active ways of seeking information is reported in this section.

4.4.3.1 Where did the respondents receive their initial diabetes education from at the time of diagnosis?

Table 8 below illustrates that 58 (84.1%) respondents received their initial diabetes education at the time of diagnosis from the dietician, while 52 (75.4%) obtained their information from the doctor. The intention of question 9 was to elicit where the respondents were most likely to have obtained their initial diabetes education at the time of diagnosis. Of the 69 respondents, 22 (31.9%) obtained their initial diabetes education from the nursing staff, while only three (4.3%) of the respondents obtained their information from the South African Diabetes Association (SADA). The reason for the low number of respondents obtaining information from SADA is attributed to the fact that members have to pay an annual subscription to the association and many of the patients who attend the clinic at Addington are from economically disadvantaged communities.

Table 8: Initial diabetes education

Initial education	Frequency (N=69)			Percentage (%)		
	Yes	No	Total	Yes	No	Total
Dietician	58	11	69	84.1	15.9	100
Doctor	52	17	69	75.4	24.6	100
Nurse	22	47	69	31.9	68.1	100
SADA	3	66	69	4.3	95.7	100

4.4.3.2 Types of initial diabetes education received

Question 9.1 is a follow up to question 9 and was designed to identify the various types of diabetes information respondents obtained from the healthcare professionals

and SADA. Many patients indicated they obtained most of their information from the Medical Officer (doctor) at the Diabetic Clinic and the Dietician who gave regular talks to groups at the Diabetic Clinic.

It is salient to note that while 22 (31.9%) have indicated in Table 8 that they received their initial diabetes education from the nursing staff, they did not specify the nature of education obtained. One of the three respondents, who obtained initial diabetes education from SADA, provided the researcher with some interesting diabetes information obtained. These results will be discussed in the section that covers question 13 of the interview schedule.

4.4.3.2.1 Doctor

The results of the study showed that 32 (46.4%) of the respondents obtained information on how to administer their oral medication and/or insulin injections and dosages from the doctor. Of the 69 respondents five (7.2%) indicated that they did not receive their initial diabetes education from the doctor at the diabetic clinic. These patients were initially diagnosed by their private doctor, who provided them with their initial diabetes education. A further five (7.2%) were first diagnosed with other chronic diseases such as cancer, heart related conditions or kidney failure. These patients were diagnosed with having diabetes when they were treated for other chronic diseases. They were consequently referred to the diabetic clinic.

4.4.3.2.2 Dietician

Table 10 illustrates that many of the respondents indicated they had received most of their initial diabetes education from the dietician. A larger number of respondents, 56 (81.2%), obtained information on food choices, that is what foods they should or should not incorporate in their meal plans. Of the 69 respondents 53 (76.8%) indicated they found the hand-out on food portions to be useful, while 36 (52.8%), 29 (42%) and 16 (23.2%) indicated they obtained information on how to examine their feet, exercise and incorporate affordable foods into their diet respectively. Only three (4.3%) of the respondents indicated that they did not benefit from the talks. Their reasons were that they have been diabetics for many years and have a history of diabetes in their family, hence they were already well informed about diabetes.

Table 9: Types of initial diabetes education received from the dietician

Education from the Dietician	Frequency (N=69)	Percentage (%)
Food choices	56	81.2
Food portions	53	76.8
Feet examination	36	52.2
Exercise	29	42
Incorporating affordable foods into diet	16	23.2
Did not benefit from the dietician's talk	3	4.3

Table 9 above reflects the multiple responses provided by the patients.

One interesting general comment from 43 (62.3%) of the 69 respondents is that they cannot afford the recommended food for diabetics suggested by the dieticians. One respondent indicated that food in the supermarkets that is recommended for diabetics are almost twice the price of the regular products.

Figure 3: Cross-tabulation of race in relation to respondents who cannot afford the recommended foods

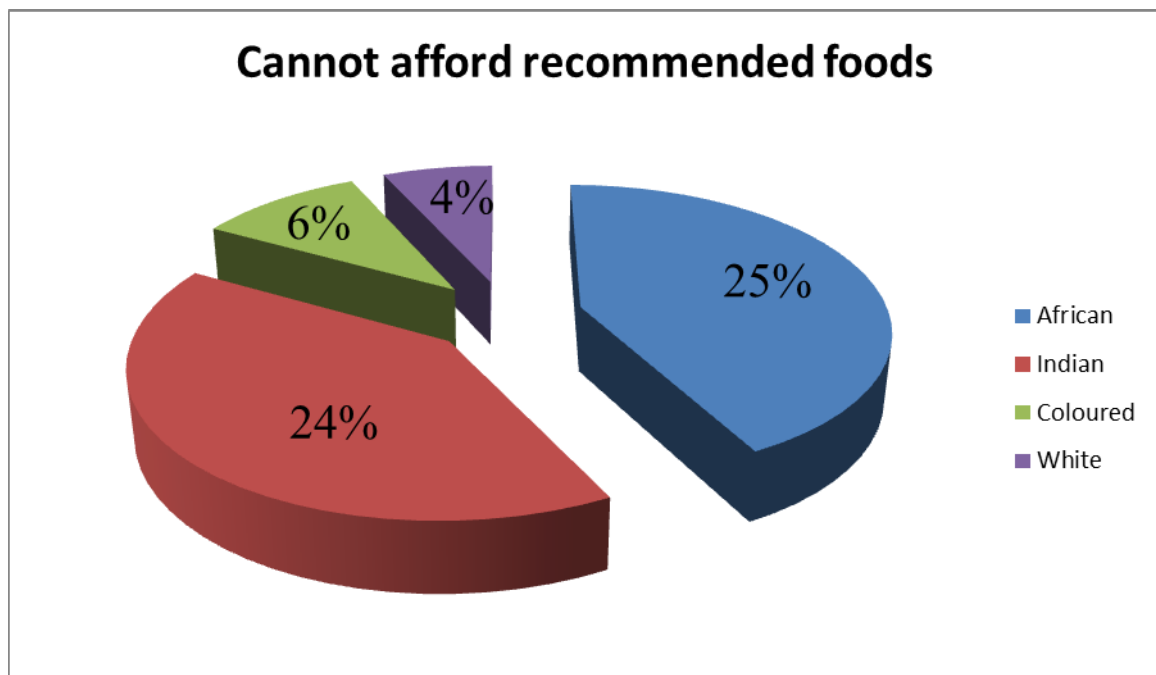


Figure 3 above illustrates that 17 (24%) of the 21 African patients and 16 (23%) of the 31 Indian patients respectively were the highest number of respondents who could not afford the recommended foods. This was followed by six (6.7%) of the 8 White patients and four (5.8%) of the 9 Coloured patients. The clinic at the hospital draws patients from lower socio-economic communities to its services.

4.4.3.3 Reliance on the doctor and nursing staff for diabetic information; satisfaction with how the information is conveyed and seeking out additional information

The respondents were asked in question 10 whether they relied heavily on the diabetic doctor and nursing staff at the hospital for their diabetic education. Question 10.1 was a follow up to question 10, if the respondent answered with a „yes’. It was designed to identify whether the information from the doctor or nursing staff was conveyed to them on request and/or with each visit to the hospital.

4.4.3.3.1 Reliance on diabetic doctor and nursing staff

The results indicated that 34 (49.3%) of the respondents relied heavily on the diabetic doctor and nursing staff for their diabetic education. The same number of respondents

indicated that information was conveyed to them on request, while 15 (21.7%) of the respondents obtained information with each visit to the hospital. The information was provided verbally by the diabetic doctor and nursing staff.

4.4.3.3.2 Satisfaction with how the diabetic doctor and nursing staff convey information about diabetes

Question 11 asked the respondents to indicate their levels of satisfaction on how the doctor and nursing staff convey diabetes information to them. Question 11.1 wanted the respondents to explain their answer.

Table 10: Satisfaction with the information conveyed by the doctor and the nursing staff

Responses	Frequency (N=69)			Percentage (%)		
	Yes	No	Total	Yes	No	Total
Satisfied with the doctor and nursing staff	54	15	69	78.3	21.7	100
Doctor is knowledgeable and efficient, informs us on new treatments	55			79.7		
Nursing staff helpful	14			20.3		
Look for own information	12			17.4		

The results in Table 10 indicated that 54 (78.3%) respondents were satisfied with how the doctor and nursing staff conveyed information to them. The survey results showed that 55 (79.7%) of the respondents felt the doctor was knowledgeable and efficient and they were informed on new treatments. A smaller number, 14 (20.3%) of respondents, indicated degrees of satisfaction with the nursing staff, while 12 (17.4%) indicated that they looked for their own information. The results therefore show that a

larger number of respondents relied on the doctor for their diabetic information and only a small number of respondents actively sought out information on their own.

4.4.3.3 Seeking out additional information

Question 12 enquired from the respondents if they seek out additional information about their diabetes, other than that provided by the doctor, nursing staff, dietician or diabetic association at the time of their diagnosis.

Table 11: Seeking additional information

Response	Frequency (N=69)			Percentage (%)		
	Yes	No	Total	Yes	No	Total
Active seeking	18	51	69	26.1	73.9	100

Table 11 revealed that only 18 (26.1%) of the 69 respondents sought out additional information at the time of diagnosis. The results from this question also indicated that only a small number of respondents actively seek out information.

4.4.3.4 Information sources or types of information sources (information received through traditional media)

Question 13 asked the respondents to list the information sources or types of information sources they have used to answer their questions about their diabetes. Question 13.1 asked the respondents to indicate their reasons for using the listed sources. The results are reflected in Table 14 below.

4.5.3.4.1 Television

Table 12: Television programmes used by patients

Television programmes	Frequency (N=69)	Percentage (%)
	44	63.8
Dr. Oz	23	33.3
3-Talk	21	30.4
House Call	16	23.2
Oprah	16	23.2
Hello Doctor	7	10.1

Table 12 above reflects the multiple responses provided by the patients.

The results from the survey indicated that 44 (63.8%) of the respondents watched various diabetic talk shows on television. They had indicated that whilst watching a particular programme, if something was being discussed on diabetes they will continue to watch. With the television programmes mentioned, 23 (33.3%) watched Dr. Oz, with the second highest number being 21 (30.4%) for Noleen's 3-Talk. This was followed by Oprah and House Call with 16 (23.2%) each respectively. Only seven (10.1%) of respondents watched Hello Doctor.

4.4.3.4.2 Radio

Of the 69 respondents, 16 (23.2%) indicated they had listened to diabetic talks on Radio Ukhozi, 14 (20.3%) listened to East Coast Radio, eight (11.6%) Radio Lotus, five (7.2%) Hindvani and three (4.3%) Al Ansaar. All of the respondents indicated that their specific stations usually have a doctor on air and people can call in with their questions.

Table 13: Radio programmes used by patients

Radio stations	Frequency (N=69)	Percentage (%)
	38	55.1
Ukhozi	16	23.2
East Coast Radio	14	20.3
Radio Lotus	8	11.6
Hindvani	5	7.2
Al Ansaar	3	4.3

Table 13 above reflects the multiple responses provided by the patients.

Interestingly only a small number, 11 (15.9%) mentioned listening to the diabetic programmes during diabetes month. The study revealed that six African patients and five Indian patients of the 69 respondents indicated that they were aware of Diabetic Month.

4.4.3.4.3 Talk to other diabetics

Table 14: Talked to other diabetics

Topics	Frequency (N=69)	Percentage (%)
	38	55.1
Family history of diabetes	41	59.4
Share information and recipes	38	55.1
Encourage friends and other diabetics to control diabetes	32	46.4

Table 14 above reflects the multiple responses provided by the patients.

Of the 69 respondents, 38 (55.1%) indicated that they talked to other diabetics, and they shared information and recipes, while 32 (46.4%) respondents encouraged friends and other diabetics to control their diabetes. Of the 69 respondents, 41 (59.4%) indicated that they have a family history of diabetes.

4.4.3.4.4 Newspapers and magazines

Table 15: Newspapers and magazines

Newspapers and magazines	Frequency (N=69)	Percentage (%)
	46	66.7
Community newspapers	45	65.2
English language newspapers	41	59.4
Zulu language newspapers	1	15.9

Table 15 above reflects the multiple responses provided by the patients.

The results illustrated in Table 15 indicated that 46 (66.7%) respondents have read or obtained information on diabetes by browsing through magazines and newspapers. Of the 69 respondents, 45 (65.2%) indicated that they came across some information on

diabetes in the community newspapers, with 41 (59.4%) finding information in the English language newspapers and 11 (15.9%) in the Zulu language newspapers.

4.4.3.4.5 SADA and no need for information

Of the 69 respondents, five (7.2%) obtained their information from SADA and 11 (15.9%) indicated that they have been diabetics for many years and knew all they needed to know about diabetes, hence they had no need for information.

4.4.3.4.6 Clinic pamphlets and posters

A majority of 56 (81.2%) respondents listed the DOH pamphlets and the clinic posters on diabetes as their sources of information. They indicated that the pamphlets were in Zulu and English.

4.4.3.5 Respondents' reasons for using the sources

Question 13.1 was a follow up question to question 13, which elicited the reasons the respondents used the sources in Tables 14, 15, 16 and 17 and this is illustrated in Table 16. Of the 69 respondents, 52 (75.4%) indicated they had access to these sources, 50 (72.5%) of the respondents wanted to know more about diabetes and 45 (65.2%) wanted to better manage their diabetes. Interestingly, some of the respondents 20 (29%) indicated that they used these sources out of fear of amputations, and 47 (68.1%) out of fear for diabetes related complications.

Table 16: Reasons for using the sources

Reasons	Frequency (N=69)	Percentage (%)
Have access to these sources	52	75.4
Want to know more about diabetes	50	72.5
Fear of diabetes related complications	47	68.1
Want to better manage diabetes	45	65.2
Fear of amputations	20	29

Table 16 above reflects the multiple responses provided by the patients.

4.4.3.6 What prompted the respondents to seek out information and how often they looked for information?

Question 14 asked the respondents to indicate what prompted them to seek out information about their diabetes. Question 14.1 and 14.2 were follow up questions to Question 14 and asked the respondents how often they looked for information and whether they looked for information when a problem occurred.

4.4.3.6.1 Reasons for seeking out information

Table 17: Reasons for seeking out information

Reasons	Frequency (N=69)	Percentage (%)
Health reasons and to make better choices	41	59.4
Side effects of diabetes	37	53.6

Table 17 above reflects the multiple responses provided by the patients.

Table 17 presents the reasons for the respondents' need for seeking out information. The results of the survey in Question 14 revealed that of the 69 respondents, 41 (59.4%) reflected that they sought out information for health reasons and to make better choices about their diabetes, 37 (53.6%) indicated that the side effects of the diabetes prompted them to seek out information on diabetes. In addition respondents provided the following responses which were not reasons for seeking out information: 25 (36.2%) stated that they only trusted the doctor's information. displayed that 58 (84.1%) respondents did not actually seek out information and had only used information they had come across by chance.

4.4.3.6.2 How often do the respondents seek out information?

Table 18: How often do respondents seek out information?

Responses	Frequency (N=69)	Percentage (%)
How often do the patients seek out information		
Only occasionally	36	52.2
During appointment at clinic	20	29
Often	15	21.7

Table 18 above reflects the multiple responses provided by the patients.

Question 14.1 is a follow up to question 14. The question was to ascertain the frequency with which respondents sought out information. Of the 69 respondents, 36 (52.2%) respondents who sought out information only occasionally and 20 (29%), revealed that during their appointments at the clinic they read the pamphlets and posters that were provided. A small number of 15 (21.7%) respondents indicated they often sought out information.

The highest number of 60 (87%) respondents indicated that they only utilised the information they came across by chance, while 37 (53.6%) revealed that they do not look for information. While these are not responses to how often the patient sought out information, the responses from the respondents revealed that then majority of patients' utilised information when they came across the information by chance.

4.4.3.6.3 Patient seeks information when a problem occurs

Question 14.2 is a follow up question to question 14 and respondents who answered „yes' had to explain their answer in 14.2.1. Of the 69 respondents 39 (56.5%) indicated they looked for information when a problem occurred. An equal number of 32 (82%) respondents looked for information when they wanted to treat a problem or if they had experienced a diabetes related problem. Twenty six (66.7%) of respondents indicated that they always consulted a doctor first when a problem occurred. Nineteen (7.4%) respondents and 12 (4.7%) indicated their concerns were with problems with their feet or they wanted to avoid amputations.

Table 19: Seeking information when a problem occurs

Looks for information when a problem occurs	Frequency (N=39)	Percentage (%)
Diabetes related diseases	32	82
Want to treat the problem	32	82
Consult doctor first	26	66.7
Problems with feet	19	7.4
Want to avoid amputations	12	4.7

Table 19 above reflects the multiple responses provided by the patients.

4.4.3.6.4 Patients seeking more information after reading or hearing about diabetes

Question 14.3 was asked to find out if the respondents sought out more information after reading or hearing something about diabetes. The results showed that 21 (30.4%) respondents sought out more information after having read or heard something about diabetes. Twenty one (100%) of the respondents revealed that they were interested in new developments and treatments.

4.5.3.7 Finding information on the internet

Questions 15, 16 and 17 were asked to find out if the respondents obtained diabetes information from the internet.

The results indicated that 12 (17.4%) respondents personally searched the internet to find information. Eleven (91.6%) of the 12 respondents indicated they searched for information on the internet by using Google and six (50%) of the 12 respondents also consulted medical sites to find information on diabetes.

Eighteen (26.1%) of the 69 respondents, indicated they asked their family members to find and to pass on information to them from the internet.

The respondents were also asked if they trusted the information they obtained from the internet.

Of the 69 respondents, 24 (34.8%) indicated that they trusted the information they got from the internet. Nineteen (79.2%) of the 24 respondents revealed that they trusted and found the information to be useful, while 13 (3.1%) of the 24 respondents indicated they were sceptical about the information obtained. Eleven (2.6%) of the 24 respondents indicated that it depended on the site they searched.

4.4.3.8 Use of the public library to find information on diabetes

The response to question 18 was that only 10 (14.5%) of the respondents used the public library to find information about their diabetes. Question 18.2 was asked to find out if the books in the library were sufficient or not and of the respondents who answered yes, five (7.2%) indicated that the library had sufficient resources to answer their questions. Seven (10.1%) of the respondents indicated that there were insufficient books on diabetes in the public library. Table 26 below reflects the results.

Table 20: Use of the public library to find information on diabetes

Responses	Frequency (N=69)	Percentage (%)
Used the public library to find information	10	14.5
Library had sufficient resources to answer respondents' questions		
Respondents who answered yes	5	7.2
If yes, insufficient books on diabetes	7	10.1
If yes, sufficient and useful books on diabetes	3	4.3

Table 20 above reflects the multiple responses provided by the patients.

4.4.4 Challenges faced with regard to seeking health information on diabetes

Question 19 was designed to establish whether the respondents encountered any challenges with regard to seeking health information on diabetes. The following questions in Table 27 were asked of the respondents.

Twenty (29%) of the 69 respondents did not know where to find information, other than that provided by the doctor or nursing staff. The results of the survey indicated that 12 (17.4%) of the respondents indicated the information in the sources they consulted was difficult to understand. It should be noted that these respondents were referring to the information they had come across in the medical journals and two (2.9%) of the respondents indicated that the information was not available in the language of their choice.

Table 21: Challenges with regard to seeking information on diabetes

Challenges	Frequency (N=69)			Percentage (%)		
	Yes	No	Total	Yes	No	Total
Do not know where to find information, other than that provided by the doctor and nursing staff	20	49	69	29.0	71.0	100
Information in the sources consulted is difficult to understand	12	57	69	17.4	82.6	100
Information isn't available in the language of choice	2	67	69	2.9	97.1	100

Table 21 above reflects the multiple responses provided by the patients.

4.4.5 Availability of information on diabetes to assist with treatment

Question 20 asked the respondents to indicate if there was sufficient information available on diabetes to assist them with their treatment. The survey results showed that 62 (89.9%) of the 69 respondents indicated that there was sufficient information available.

4.4.6 Comments by respondents

The final question asked the respondents if they would like to add any additional comments relating to the topic.

The results showed that 65 (94.2%) respondents commented positively on the communicative and easy to read format of the pamphlets on diabetes from the KZNDOH, while 21 (30.4%) indicated that they did not know where to find information. Some respondents were unaware that they could find information on diabetes in the public library.

4.5 Results from the self-administered questionnaire for the dietitians

The self-administered questionnaire for the dietitians were designed to determine the influence the dietitians at the hospital had with regard to the provision of information to the diabetic patients. The following questions were asked in the questionnaire:

- When did the dietitians provide the patients with diabetes dietary education?;
- What types of information was provided?;
- Did they provide packaged information in the form of hand-outs and pamphlets on diabetes eating plans?;
- Was the information or diabetes education provided during group discussion sessions? and
- Was the consultation time sufficient to effectively deal with the diabetic patient's concerns and information needs?

4.5.1 Diabetes dietary education

As indicated in Chapter Three, the manager of the Dietetics Department and the diabetic dietitian also answered the self-administered questionnaire.

4.5.1.1 Provision of diabetes dietary education to patients

Question 4 in Section B of the questionnaire was posed to establish when information or diabetes education was provided to the patients and this is illustrated in Table 28. Respondents were asked to tick the 'yes' or 'no' options provided in questions 4.1 to 4.3. Both respondents indicated that information was provided to the patients when they were referred to them and at the time of diagnosis. One of the two respondents indicated that information was provided to the patient when it was asked for.

Table 22: Occasion when dietician provide diabetes dietary education to patients

Occasion	Frequency (N=62)	Percentage (%)
Occasion when the patient is referred to the dietician	2	100
At the time of diagnosis	2	100
When the patient asks for information	1	50

Table 22 above reflects the multiple responses provided by the patients.

4.5.1.2 The types of information provided to the patients and consultation time

Question 5 asked the respondents to indicate the types of information they provided to the patients. They were also asked to explain if the information on diabetes eating plans was provided verbally and/or in the form of packaged information such as hand-outs and pamphlets. Question 6 asked the respondents whether they provided the diabetic patients with information during the group discussion sessions. Both respondents provided similar answers to both questions 5 and 6, among which were the following common responses.

- Both respondents answered „yes’ to the provision of verbal and packaged information in questions 5.1 and 5.2 respectively.
- The answers provided to questions 5.1.1 and 5.2.1 which were the follow up questions to 5.1 and 5.2 were:
 - Information in their talks on the different food groups;
 - Both talks and hand-outs on the South African food based dietary guidelines;
 - The provision of various hand-outs and pamphlets on diabetes eating plans and a specific hand-out that was based on the diabetic talk; and
 - They provided basic dietetics information which included complications and symptoms of diabetes resulting from poor diet.

Question 7 was asked to establish whether the consultation time was sufficient to effectively deal with the diabetic’s concerns and information needs. Both respondents indicated the time was sufficient for most patients.

4.6 Results from the self-administered questionnaire for the doctor and nursing staff at the diabetic clinic

The self-administered questionnaires for the MO (doctor) and nursing staff at the diabetic clinic were designed to determine the influence they had with regard to the provision of information to the diabetic patients. The following questions were asked in the questionnaire:

- When did they provide the patients with diabetes education?;
- What types of information provision was provided?;
- Did they provide packaged information in the form of hand-outs and pamphlets on diabetes eating plans?;
- Was the information or diabetes education provided during group discussion sessions?;
- Were the patients referred to the dietetics department for additional information?;
- Was the consultation time sufficient to effectively deal with the diabetic patient's concerns and information needs.

4.6.1 Diabetes education

The self-administered questionnaire for the doctor and nursing staff at the diabetic clinic was created to establish the particular types of diabetic information and education the healthcare staff provided to the patients. As indicated in Chapter Three, there is only one medical officer who attends to the diabetic patients and four nursing staff. The responses to the questions from the doctor differed from that of the nursing staff.

4.6.1.1 Doctor

The provision of diabetes education, types of information, support group education and consultation time for the doctor are as follows:

4.6.1.1.1 Provision of diabetes education to the patients by the Medical Officer

With question 4 and 4.1 to 4.3 in Section B of the questionnaire, the medical officer indicated that she provided the patient with diabetes education at the time of diagnosis, at each consultation, when the patient asked for information and with each of the patient's visits to the hospital.

4.6.1.1.2 The types of information provided to the patients

The doctor's responses to questions 5 and the follow up questions were „yes' to the provision of verbal information and only occasionally did she provide the patients with diabetic hand-outs and pamphlets provided by drug companies. The medical officer provided the following responses to question 5.1.1.

- Information provision and education on injection techniques and treatment dosing;
- Information on foot care;
- Information on lifestyle changes which included:
 - diet
 - exercise
 - smoking and
 - alcohol.

4.6.1.1.3 The diabetic clinic with regard to the provision of support group diabetes education and consultation time

With questions 6 and 6.1, the MO indicated that she provided support group diabetes education which was done by referring the patients to the dietician and occupational therapist.

The MO answered question 7 by stating that the dietician provided the diabetes education at the diabetic clinic. However, the MO noted that the consultation time was insufficient to effectively deal with the patient's concerns and information needs.

4.6.1.2 Nursing Staff

The provision of diabetes education, types of information, support group education and consultation time for the nursing staff are as follows:

4.6.1.2.1 Provision of diabetes education to the patients by the nursing staff

In terms of the responses to the questionnaire in questions 4 and 4.1 to 4.3 of Section B, four (100%) of the nursing staff indicated that they provided the patients with diabetes education at the time of diagnosis and when the patient asked for information. Three (75%) of the nurses mentioned they provided the patients with information at each of the patients' visits to the hospital. However, one nurse indicated that she was too busy to provide the patient with information at each visit to the hospital.

4.6.1.2.2 The types of information provided to the patients

The nurses' responses to questions 5 and the follow up questions were yes to the provision of verbal information and packaged information such as diabetic hand-outs and pamphlets. The nursing staff provided the following responses to question 5.1.1. and 5.2.1.

Three (75%) of the respondents indicated they demonstrated injection techniques and information on foot care and diet to the patients. Of the four respondents, all (100%) provided the patients with hand-outs and pamphlets on diabetes from the KZNDOH and those supplied by the various drug companies.

4.6.1.2.3 The diabetic clinic with regard to the provision of support group diabetes education and consultation time

With questions 6 and 6.1 only one (25%) of the nursing staff indicated that they provided support group diabetes education to the patients, while three (75%) indicated they referred the patients to the diabetic dietician.

With question 7, all (100%) of the nursing staff indicated that the consultation time was insufficient to effectively deal with the diabetic's concerns and information needs.

4.7 Summary of the chapter

Chapter four provided a detailed report of the survey results obtained by investigating the information needs and information seeking behaviour of adult type 2 diabetic patients at Addington Hospital in Durban. The results of the survey have sufficiently answered the research questions that were reflected in Chapter One.

Data was collected on the information needs and information seeking behaviour of adult type 2 diabetic patients from the perspectives of the patients and that of the healthcare professionals.

The results reported on the patients' receipt of initial diabetes education at the time of diagnosis and the types of diabetes information received from the doctor, the nursing staff and the dieticians.

The results also identified the patients' preferences with regard to the provision of information sources, the frequency of use, reasons for their choices and the reliance on the doctor for their diabetes information.

The responses from the doctor and the nursing staff reflected on the type of information that was provided to the patients. This included education on injection

techniques and treatment dosage, information on foot care and the provision of packaged information compiled by the KZNDOH and the drug companies.

The survey also sought out the views and information provision from the diabetic dietitians. The results revealed that they provided the patients with information on food choices, information supplied by the KZNDOH on the South African food based dietary guidelines and basic dietetics information.

CHAPTER FIVE: INTERPRETATION OF THE RESULTS

“Disease does not occur unexpectedly, it is the result of constant violation of Nature's laws. Spreading and accumulation of such violations transpire suddenly in the form of a disease - but it only seems sudden” (*Hippocrates*).

5.1 Introduction

The results of the study are discussed in this chapter. The findings of the study were analysed and interpreted in terms of the research questions, the research objectives, Longo's Health Information Model and the themes and issues augmented in the literature review. For the purposes of accurately interpreting the survey results, the research questions, the purpose for conducting the study and the objectives (research areas) of the study will be revisited.

The objective of this study was to investigate how a better understanding of the information needs and information seeking behaviour of diabetic patients can contribute to the successful management of their diabetes.

The order of the discussion in this chapter differs from that of the order of the objectives and the sequence of the questions in the interview schedule. Four themes emerged from the study: (1) reliance on the diabetic doctor for their diabetic education; (2) the active and passive patterns of information seeking; (3) patients' fear of the complications of diabetes; and (4) the value of the Department of Health's and the Dietician's packaged information.

The results will be interpreted according to the themes identified above. Further the responses from the healthcare professionals and that of the patients will be interpreted and discussed together in order to bring in the relationship between all categories of respondents and the trends identified in the literature. The findings that are interpreted in this chapter relate to all of the patients who were interviewed and the healthcare professionals who responded to the self-administered questionnaire. In view of the relatively high response rate of the survey, it is possible to make generalisations about the entire population.

5.2 Revisiting the objectives of the study

The study was conducted and several observations emerged from the interviews with the respondents. The interpretation of the results will reveal the study achieved the following stated objectives:

- The study established what prompts type 2 diabetic patients to seek out information about diabetes.
- The study established the information needs of type 2 diabetic patients.
- The study also revealed what the information seeking behaviours of type 2 diabetic patients were.
- The study established where the diabetic patients obtained diabetes related information.
- The study established the sources or types of sources the patients used to answer questions about their diabetes.
- The challenges patients encounter with regard to seeking health information on diabetes.
- The patients' opinions on whether there was sufficient information available on type 2 diabetes were shown.
- The study established that patients do rely heavily on the diabetic doctor and the nursing staff at the hospital for their diabetic education.

5.3 Sequence of the interpretation of the results

The research areas that were covered in the interview schedule and the self-administered questionnaires will be interpreted in relation to the four trends identified in the literature review. The sequences of the interpretations of the results are:

- Demographic data:
 - The demographic data of the type 2 diabetic patients such as gender, age, race and language;
 - The number of years since first diagnosed with diabetes.
- Diabetic information needs and seeking behaviour of the diabetic patient.
- Themes emerging from the study were:
 - Reliance on the diabetic doctor for diabetic education;
 - The active and passive patterns of information seeking;
 - Fear of the consequences of diabetes; and
 - The value of the DOH and dieticians' packaged information.
- Summary of the findings.

5.4 Demographic data and attributes common to some of the population

The survey results on the demographic information and attributes that are common to some of the population studied will be considered in relation to other factors observed in the study.

5.4.1 The gender of the diabetic patients

The results of the survey indicated that there were proportionally more female respondents than male respondents. The females were a slightly larger group representing 55.1% compared to 44.9% of the 69 respondents. The responses to some of the questions in the interview reflected differences in information seeking behaviour between the male and female respondents. For example the female respondents were more inclined to obtain their diabetic information from talk shows such as Oprah, Dr. Oz and 3-Talk than were the male respondents.

The percentage difference between the female and male respondents was just 10.2%, and therefore it can be generalised that type 2 diabetes is not more prevalent in any specific gender in the sort of socio-economic group surveyed.

5.4.2 The age of the diabetic patients

As indicated in the analysis of the data, the majority of (40.6%) respondents were from the 50 to 59 years age group and this was followed by (27.5%) respondents who were in the 60 to 69 years age group. Type 2 diabetes or adult-onset diabetes usually occurs in adults who are 45 years and over. Thus the results of the survey indicate that 28 (40.6%) of the respondents between the 50 and 59 years of age group were diagnosed with having diabetes for a period greater than five years.

5.4.3 The race and language of the diabetic patients

The diabetic clinic at the hospital was patronized by lower socio-economic groups. The race and language of the patients were as follows:

5.4.3.1 Race

Further to the above interpretations, the survey results revealed that the largest number (44.9%) of respondents with type 2 diabetes were from the Indian community, followed by the African community with 30.4% respondents. Historically, diabetes was quite prevalent amongst the Indian communities in the greater Durban area, however, the statistics obtained in the study indicated that there is also a high prevalence of diabetes amongst the African communities in Durban. The results obtained from this question, are useful with regard to the dietary information provided by the dieticians. Both communities have different traditional foods that they incorporate into their daily meal plans.

5.4.3.2 First language

The first language of the majority of the respondents was English, whilst 27.5% of the respondents indicated that their first language was Zulu. The patients did not indicate any other first language. One respondent, who indicated she was fluent in both English and Zulu, revealed that her first language was actually sign language. This respondent had a hearing impairment and her caretaker was present at the time of the interview. The caretaker translated the questions into sign language and indicated that she was also responsible for taking the patient to the diabetic clinic as there wasn't anyone at the clinic who could communicate in sign language.

The results of the survey suggest that to successfully manage their diabetes patients need information in English and Zulu. The survey showed that all of the KwaZulu-Natal Department of Health diabetes pamphlets are available in both English and Zulu.

5.4.4 Duration since first diagnosed with diabetes

The findings of the study indicated that a majority of 94.2% of the respondents were diagnosed with diabetes for a period of five years or more. Since this majority have been diabetics for several years, they have already gone through the initial learning stage of their diabetes and many indicated that their information needs and information seeking behaviours have changed since they were first diagnosed. Some also indicated that information in the pamphlets, and from other sources available, were intended for newly diagnosed diabetics and were thus irrelevant for their situation.

5.5 Diabetic information needs and information seeking behaviour of the diabetic patients

The findings of this aspect of the study reflected on the specific information needs and information seeking behaviours of the adult type 2 diabetic patients. While the results in most instances will be interpreted sequentially according to the interview schedule, the four trends identified in the review of the literature will also be brought in.

5.6 Themes identified in the study

Four themes emerged from this study. The findings of the study are based on the data collected from various sources using different data collection methods. These findings will be discussed in relation to the four identified themes.

Table 23: Themes identified in the study

Themes	Explanations
Reliance on the diabetic doctor for their diabetic education	The patients' reliance on the doctor and nursing staff is discussed. Their satisfaction with the information conveyed by the doctor.
The passive patterns of information seeking	The initial and post diabetes information received from the doctor, dietician, nursing staff and SADA. Information obtained from traditional mass media.
The active patterns of seeking information	Information from the internet and the public library.
Fear of the consequences of diabetes	The patients fear of amputations, eye and kidney problems. The patients concerns related to fertility and pregnancy.
The value of the DOH and dieticians' packaged information	The patients use and comments on the diabetic pamphlets and dieticians' hand-outs.

5.6.1 Reliance on the diabetic doctor for their diabetic information

Reliance on the diabetic doctor's medical expertise precluded and limited the need for the patients to actively seek out information. The study revealed that while the patients may have come across diabetes information by chance, they did not utilise the information without first consulting the doctor. Close to half (49.3%) of the respondents reflected their heavy reliance on the diabetic doctor for their diabetes information, and the same number indicated that this information was conveyed to them on request and 21.7% indicated they obtained information with each visit to the hospital. When the respondents were asked what prompted them to seek out information and to provide their reasons, 36.2% indicated they only trusted the doctor's information and did not actually seek out information.

Some patients adopted a non-participatory role in the management of their diabetes. With the diabetic patients, there seemed to be a lack of confidence in the information obtained from other information sources other than that provided by the diabetic doctor at the clinic. The patients did not provide any reasons.

The results of the study also reflected that 78.3% of these respondents were satisfied with how the information was conveyed to them. They considered the doctor to be knowledgeable and efficient and she constantly informed them on new treatments on diabetes and health conditions related to diabetes.

The findings of the current study are consistent with Leydon et al. (2000) study which explored the reasons why cancer patients do not want to seek information beyond what is offered by the doctor. These patients expressed their faith in their doctor's medical expertise. While both the cancer patients and the diabetic patients of this

study reflected their reliance on the doctor's medical expertise, the underlying differences were that the study on the cancer patients indicated the complexity of the relationship between hope and the patients' desire for information. The value of hope in the management of their chronic illness is well established. The diabetic patients in this study indicated that there seemed to be a lack of confidence in the information obtained from other information sources other than that provided by the diabetic doctor.

5.6.2 The active and passive patterns of information seeking

The findings of this study revealed that a non-linear nature of diabetes information seeking behaviour existed amongst the patients, whereby the patients made decisions regarding their diabetes based on their current needs and information seeking behaviour. There also existed amongst the patients an interplay of both the active information seeking and the passive receipt of information.

5.6.2.1 Initial diabetes education

The survey results revealed that out of the 96 respondents, 84.1% received their initial diabetes education at the time of diagnosis from the dietician, while 75.4% obtained their information from the diabetic doctor. Smaller numbers of respondents obtained their initial diabetes education from the nursing staff and just 4.3% from SADA. The reason for the low number of respondents with regard to obtaining information from SADA is attributed to the fact that members have to pay an annual subscription to the association and many of the patients who attend the clinic at Addington are from economically disadvantaged communities.

Many patients indicated they started collecting diabetes information when they were first diagnosed, but discontinued the learning efforts shortly after they had a basic understanding about their diabetes.

5.6.2.1.1 Doctor

The types of initial diabetes education that was stated by most of the (46.4%) patients, was on how to administer their oral medication and/or insulin injections and dosages. The survey results also established that 7.2% of the respondents were not initially diagnosed by the diabetic doctor at the clinic or they were diagnosed with another chronic disease and were consequently referred to the diabetic clinic when their sugar levels were high. One patient indicated that she was a cancer patient and when she was in the oncology ward, they discovered that her blood glucose levels were high and she was referred to the diabetic clinic.

The MO at the clinic indicated that the patient diabetes education was provided at each consultation, at the time of diagnosis, and when the patients ask for information. The results of the survey indicated that the MO provided the patient with information

on injection techniques, treatment dosing, foot care and lifestyle choices such as diet, exercise, smoking and alcohol.

These findings suggest that information provided by the MO was not only at the time of diagnosis, but also with each consultation. This also indicates that the types of information provided with each consultation may actually depend on the current medical condition of the patients. For example if a patient experienced a foot problem, the MO would provide the patient with more information on foot care. The findings suggest that the provision of information at the time of diagnosis and post diagnosis is consistent with Fourie's (2010) study of cancer patients having different information needs at different stages of their disease and Peel et al. (2004) study which indicated that the patient wanted information at their different routes to diagnosis.

5.6.2.1.2 Dieticians

The survey revealed that a majority (81.2%) of patients obtained information on food choices, which included the foods they should include into their meal plans. A further 76.8% indicated that they found the hand-outs provided by the dietician to be useful. The survey also revealed that some of the patients obtained information on how to examine their feet, the use of exercise and how to incorporate affordable food into their diets.

The adult type 2 diabetic patients obtained their basic eating and nutrition information from the diabetic dietician. This was done in the form of talks whereby the dietician illustrated their talks with hand-outs and sometimes physical props such as rubber models of food.

Interestingly, 62.3% of the patients revealed that they cannot afford the recommended foods for diabetics that were suggested by the dieticians. One patient indicated that in supermarkets, food for diabetics is almost twice the price of the regular product.

The results from the cross-tabulation of race groups in relation to the patients, who indicated they cannot afford the recommended foods, revealed that 26.64% and 23.19% of the African and Indian communities respectively could not afford the recommended food. The statistics from this study reveal that these communities have a high prevalence of diabetes and by not being able to afford the recommended diabetic food may directly affect the management and control of their diabetes.

The diabetic dietician provided the diabetic patients with information when they were newly diagnosed or when their glucose levels were very poorly controlled. The responses to the types of information provided by the dietician in the questionnaire is similar to that provided by the patients in the interviews. The dietician provided diet and nutrition talks to the patients at the group sessions which are held at the Diabetic Clinic. These talks included information on what diabetes is, the role of good nutrition

and the different food groups the patients should incorporate into their diets. The dietician uses the South African Food Based Dietary Guidelines (See Appendix H) which was developed by the DOH. The dietician also provided the patients with a hand-out on her talk (Appendix G).

The findings of this current study contradicted that of Holstrom and Rosenqvist (2005) study with regard to their fourth and fifth themes on diet and physical exercise. Many of the patients in this study joked about cheating as regards to correct eating habits and having an „eating problem’. Therefore knowing what is right does not necessarily translate into choosing the best food for themselves, even though they understood the importance of incorporating correct food into their diet and being aware of the relationship between diet, exercise and maintaining good blood glucose levels.

5.6.2.1.3 Nursing staff

The results of the survey revealed that only 31.9% of the patients obtained their diabetic information from the nursing staff. The patients indicated they occasionally received information on how to administer their medication by the nursing staff. However, the responses obtained from the nursing staff revealed that they demonstrated injection techniques to the patient. They also provided the patient with the KZNDOH diabetes pamphlets and the hand-outs provided by the drug companies. One nurse indicated that she was too busy to provide the patient with information.

The MO and nursing staff at the Diabetic Clinic indicated that the consultation time was insufficient to effectively deal with the diabetic patient’s concerns. However, the dietician indicated that the time was sufficient to cover the concerns and information needs of the patients.

These findings suggest that the MO and nursing staff considered the lack of consultation time to be insufficient to effectively deal with the patients’ concerns and information needs and this is consistent with Pooley et al. (2001) study where the practitioners considered the available time was insufficient to deal effectively with the patients’ concerns.

5.6.2.1.4 SADA

The South African Diabetes Association provides a wide range of information sources on diabetes to its paying members. They have a website and magazine which subscribers have access to. The patients who attend the clinic at Addington are from economically disadvantaged communities, hence only three of the 69 patients indicated that they are members of SADA. One patient indicated that on one occasion, SADA took them to a Supermarket and pointed out the suitable foods on the shelves and provided the patients who were members of SADA, with alternative food products. They also taught them how to read the food labels and were given a bag of food samples.

It should be noted that the KZNDOH pamphlets on diabetes, includes a section with tips on shopping for healthy food.

5.6.2.2 Information from traditional mass media

The study reflected on the diversity and consistency of the patients' information needs and information seeking. The patients sought medical and disease specific information and they relied on their relationships with their friends, family and the healthcare professionals to reinforce and confirm the information they obtained.

Many of the patients reported that the mass media, such as the newspapers, television and radio talk shows played a role in providing information on diabetes.

5.6.2.3 Passive receipt of information

A majority of patients in this study came across relevant information about diabetes during the course of their daily activities such as switching between television channels, listening to their favourite radio stations or by reading the newspapers or magazines. The following reflects on the patients' passive receipt of information through the mass media and talking to other diabetics.

5.6.2.3.1 Television

The study found that 63.8% of the patients had watched a variety of talk shows on diabetes. Dr. Oz was watched by the highest number (33.3%) of the patients who were interviewed and this was followed by the South African programme, 3-Talk with Noleen. One patient who indicated that he also actively sought out information, indicated that Dr. Oz was the only medical professional or source of information that had answered his particular question on diabetes. Apparently he had a medical problem that was related to his diabetes and he had been unable to get any clarity on how to treat the problem.

5.6.2.3.2 Radio

The findings of the current study revealed that 55.1% of the respondents listened to talk shows on the radio. Radio Ukhozi was listened to by the highest number of patients (20.3%), followed by East Coast Radio. Six of the eleven patients indicated that during diabetes month, the Zulu station, Radio Ukhozi, had discussions every evening on diabetes. One patient mentioned listening to the discussions with her neighbour who was also a diabetic.

5.6.2.3.3 Newspapers and magazines

The study revealed that a majority (66.7%) of patients, while browsing through the newspapers or magazines, had accidentally come across some information on diabetes. A large number read the community newspapers which are freely available. One patient who is a member of SADA indicated that she received her monthly diabetes magazine from SADA and said that the articles and recipes were excellent. Another patient indicated she received a free trial to the SADA magazine for a year. She also indicated that the articles in the magazine were useful.

The findings of the current study are consistent with Longo et al. (2009; 2010) assessment of the diabetic and cancer patient's (respectively) passive receipt of information through the mass media. Similarly the diabetic patients in this study also indicated that they came across relevant diabetic health information on television and in reading newspapers or magazines. The prevalence of radio use indicates that it is still a popular source of information in South Africa.

5.6.2.3.4 Talking to other diabetics

The findings from the study indicated that 55.1% of the patients talked to other diabetics, including other patients at the clinic, friends and family members. Many articulated their difficulties living with diabetes and exchanged information on everything from healthy food snacks, recipes, some indigenous and Ayurveda alternatives to reduce their glucose levels and exercise tips.

The study also revealed that 59.4% of the patients had a family history of diabetes and discussed issues on how to manage their diabetes with family members who were diabetics. Many seemed to share recipes with other diabetics and 46.4% indicated they encouraged friends, family members and other diabetics to control their sugar levels. One interesting and humorous observation that emanated from the study was that most patients considered their eating habits were better controlled than other diabetics. Some went as far as stating that they reprimanded other diabetics when they caught them eating incorrect food.

The findings of the current study are consistent with Longo et al (2010) study, whereby patients also obtained and shared information with friends and Longo et al.

(2009) study, whereby interpersonal information was more often cited and the study showed that many of the patients sought or received information from other patients.

5.6.2.3.5 Reasons the patients used the sources above

When the patients were asked why they used the sources they listed above, 75.4% indicated they had access to those sources. The patients (72.5%) also indicated that they wanted to know more about diabetes, and 65.2% wanted to better manage their diabetes. Fear of diabetes related complications resulted in 68% of the patients using these information sources.

5.6.2.3.6 No need for information

The study revealed that 15.9% of the patients did not require information. Their reason being that they had been diabetics for many years and knew all they needed to know about diabetes. Some indicated that they had a family history of diabetes and they have already been exposed to what they should or should not do.

5.6.2.4 Active seeking of information

A small number of patients in this study indicated that they sought out information when a problem occurred, out of fear related to the consequences of diabetes or they wanted to better manage their diabetes. However, when these patients were asked where they sought the information from, the findings actually revealed that many obtained the information either from the doctor or accidentally.

5.6.2.4.1 What prompted the patients to seek out information?

The study revealed that 44.9% of the patients looked for information when a problem occurred, while 46.4% indicated they looked for information when they wanted to treat a diabetes related problem.

5.6.2.4.2 Reasons for seeking out information

The patients provided a number of reasons for seeking out information, 59.4% indicated health reasons and the ability to make better choices and 53.5% required information on the side effects of diabetes. Some of the patients (46.4%) indicated they looked for information to treat a problem or when they experienced a diabetes related problem. The majority of respondents (84.1%) indicated that they only came across information by chance. Some patients (30.4%) revealed that they were interested in new developments and treatment. These findings were from the multiple response questions.

5.6.2.4.3 How often did the patients seek out information?

The study found that the level of occurrence in seeking out information continued to predominate in the passive or accidental receipt of information. The patients indicated that 87% only came across information by chance while 53.6% did not look for information. Close to half (52.2%) indicated that they only looked for information occasionally and 29% sought information during their appointment at the clinic. Only 21.7% of the patients sought information often. These results are discussed at length under the sections „internet’ (5.6.2.4.4) and „public library’ (5.6.2.5.6). These were findings from the multiple response questions. One patient indicated she attended the diabetic patient meetings once a week at Entabeni, a private hospital. The other patient attended the SADA monthly meetings and she indicated that she participated in their discussions.

5.6.2.4.4 Internet

The findings suggest that only a small number of patients had access to the internet or were unable to use this tool. A small number of 12 (17.4%) of the patients personally searched the internet (new media) to find information, while 26.1% asked their family members to find and pass on the information to them. The results revealed that 11 of the 12 patients used the search engine Google, while six of the 12 patients identified medical sites, however, at the time of the interview they could not recall the names of the specific sites. One patient indicated she obtained her information from the SADA website and Manna Health. This patient indicated that she suffers from peripheral nerve neuropathy and she obtained some useful information from both sites mentioned and Manna Health also e-mails her information regularly.

The findings of the current study are therefore consistent with Longo et al. (2010) assessment where the patients reported the use of the internet as an information tool and the patients identified health and diabetes related sites. However, the study is less consistent with Fourie’s (2008) study where she indicated that studies by other researchers have shown that more patients are inclined to search the internet for their information. The reason the patients in this study are less inclined to search the internet for their information may be attributed to the fact that these patients are from economically disadvantaged communities and they don’t have access to the internet.

5.6.2.4.5 Trust the information obtained from the internet

The findings of this study were interpreted from the results of the patients who personally searched the internet and those patients who had their friends and family members search and pass on the information to them. Of the 34.8% of patients who indicated that they trusted the information obtained from the internet, 27.5% indicated that they trusted the information and found it to be useful, while 18.8% indicated that

there were sceptical about the information and 15.9% indicated it depended on the site the information was accessed from.

5.6.2.4.6 The Public Library

The study found that only 10 (14.5%) of the patients used the public library to find information about their diabetes. Some of the patients were unaware that they could find diabetes related information in the public library. Five of the ten patients who used the public library to find information on diabetes indicated that the library had sufficient sources to answer their questions about diabetes. These patients used the Hillcrest public library, the City Library-Durban Central and the Musgrave public library. Five of the 10 patients indicated that the Reservoir Hills public library and the Prince Edward Street library had insufficient books on diabetes. One patient indicated that she was an avid reader and while the Prince Edward library had sufficient books in other areas, there were insufficient books on health related topics.

5.6.2.4.7 Challenges faced by the patients and the availability of information on diabetes

The findings of the study revealed that 17.4% of the patients indicated that the information in the sources they consulted was difficult to understand. These patients were referring to the information they had come across in the medical journals. One patient who was also a member of staff at Addington and was also a patient at the Diabetic Clinic indicated that he found the terminology in the medical journals difficult to understand and he would get the doctors at the hospital to explain further.

Two patients indicated that the information was not available in the language of their choice. Some 29% of the patients stated that they did not know where to find information, other than that provided by the doctor or dietician. These findings indicate that more needs to be done with regard to informing people that they can obtain information from sources or associations other than those provided by the doctor or dietician.

The study showed that a majority of 62 patients were satisfied with the amount of diabetes information available to assist them with their treatment. A small number indicated some degree of difficulty seeking information on diabetes, while 30.4% of the patients did not know where to find information other than that provided by the diabetic doctor.

While the majority may have indicated that there is sufficient information available on diabetes, the study revealed that many of the patients did not actively engage in information seeking.

5.6.3 Summary

The findings of this study indicated that diabetic patients have several information needs. These needs include knowing more about diabetes and related lifestyle choices, and information of diabetes related problems. These concerns and fears will be discussed next (5.7.3) under the theme “Fears of the complications of diabetes”. However, the results of the study reveal that a majority of the patients’ information seeking behaviour to meet these needs was mostly obtained through the passive receipt of information rather than the active seeking of information.

5.7 Fear of the complications of diabetes

The study revealed that 68.1% of the patients had an overwhelming concern and fear of diabetes related consequences. This was indicated when the patients were asked to provide their reasons for using the mass media sources. When asked what prompted the patients to seek information, 46.4% indicated that it was due to diabetes related diseases, while 27.5% and 17.4% respectively indicated they experienced problems with their feet and they wanted to avoid amputations.

The findings therefore indicate that most of the patients had an understanding that uncontrolled diabetes can lead to amputations, problems with their feet, eyes, kidneys, damage to the heart, blood vessels and nerves.

5.7.1 Fear of amputations

The findings of the study revealed that 17.4% of the patients experienced overwhelming fears of amputations and 27.5% had concerns with problems related to their feet which could lead to neuropathy. One patient referred to diabetes as a „dreaded disease’ and was concerned about being affected by the consequences of diabetes and she indicated that she sought information with the intention of finding out if she was “faulting and wanted to know what she should be doing”.

The results from the interviews also revealed that many of the patients already experienced problems with their feet and this heightened their fears. One patient indicated that she suffered from peripheral nerve neuropathy and that is her constant fear. Another patient had his foot amputated and he indicated he had a problem with his toe on the other foot, hence his fear was having his other foot amputated. He also indicated that his brother had died as a result of diabetes and diabetes related diseases.

5.7.2 Kidney failure, eye problems and heart related diseases

A small number of five (7.2%) of the patients indicated that they were initially diagnosed with another chronic disease like cancer related conditions and kidney failure. One patient indicated she experienced kidney failure as a result of her diabetes and she was on dialysis. These patients' concerns were that elevated sugar or glucose levels would have a detrimental effect on their type of cancer, their kidneys and heart. Some of the patients indicated a fear of ischemic heart disease and kidney failure. These patients indicated they regularly sought out information on these conditions.

The findings of the study revealed that some of the patients experienced problems with their eyes and this ranged from impaired/blurry vision to near blindness. These patients indicated a concern about going blind and how that will affect their quality of life.

5.7.3 Fertility and pregnancy

The findings of this study reflected on some interesting reasons why the patients sought out information. One patient indicated she had been trying to fall pregnant for several years and knew that her uncontrolled sugar levels had a direct effect on her fertility and kidney function. She indicated she discovered through her active information seeking that high sugar levels can lead to Poly Cystic Ovarian Syndrome (PCOS) and this actually prevents pregnancy. Another patient indicated that she was pregnant for the second time and she actively sought out information to help her control her sugar levels with the intention of having a healthy pregnancy. She also indicated her interest in finding out more about stem cell research in diabetes.

The results from the Holstrom and Rosenqvist (2005) study contradicted the outcomes and findings from this study on the information needs and information seeking behaviour of type 2 diabetic patients. The first theme Holstrom and Rosenqvist (2005: 149) identified was "type 2 diabetes was not real diabetes". Unlike the patients in Holstrom and Rosenqvist (2005) study, a majority of the type 2 diabetic patients who were interviewed displayed an understanding of the consequences of their diabetes. They were of the understanding that type 2 diabetes was hereditary and being overweight contributed negatively to their control and management of diabetes.

With regard to the second theme on complications, similarly the patients from this study also had the threat of complications such as foot and eye care at the back of their minds. However, unlike the patients in Holstrom and Rosenqvist (2005) study, the results from the research revealed that the patients of this study were aware these complications were related to diabetes.

The third theme was on the self-monitoring of blood glucose. Holstrom and Rosenqvist (2005) study showed that the patients did not know why they performed this routine, however the respondents' from this study had a clear understanding that

by monitoring their blood glucose, they would prevent the complications that are related to diabetes and this will enable them to take charge of their diabetes and treatment.

5.7.4 General fears

Some of the male patients indicated that they looked for information on diabetes related infections as they were too embarrassed to discuss these sensitive issues with the MO or nursing staff. The findings of this current study are consistent with Fourie's (2010) assessment with regard to information on issues difficult to discuss. Fourie (2010: 41) indicated that there are issues the cancer patient may choose not to discuss, such as their sexual well-being or experience of death.

5.8 The value of the DOH and dieticians' packaged information

The findings from this study revealed that the KZNDOH provides the patients with a variety of pamphlets on diabetes. Pertinent diabetes and health related information was re-packaged by the KZNDOH into a relevant and understandable format. The pamphlets are colourful and are available on a variety of diabetes related issues which includes information on: "What is diabetes?"; "Diabetes self-care"; "Basic eating and nutrition information" and "Medication: Insulin and Oral".

5.8.1 DOH pamphlets available

The findings of this study revealed that the majority of 81.2% of the patients listed the DOH pamphlets on diabetes as their major sources of information, excluding the information provided by the MO. The results of the study revealed that the majority of 94.2% of the patients commented positively on the communicative and "easy to read" format of the pamphlets on diabetes from the KZNDOH. The information contained in the pamphlet was also in the patients' language of choice.

The pamphlets patients collect in the Clinic usually target newly diagnosed patients, with a hope to educate them about what diabetes is and the common complications. One patient indicated that while he found the information to be useful, he also noticed that the information had not been updated since he was first diagnosed several years ago.

Healthcare providers are the major information sources for most patients who either pick up pamphlets or read the posters on the walls in the diabetic waiting room.

5.8.2 Dieticians' packaged information

The findings from this study revealed that the information provided by the diabetic dietician was of value to a majority of patients who attended the diabetic talk sessions. The study also revealed that the DOH pamphlet on South African dietary guidelines for diabetics was geared towards the dietician who then modified the information into a form easily understood by the patients (See Appendix H). The dietician gave the patients a talk on diabetes followed by the pamphlet and a printed copy of her talk.

5.8.3 Summary

The overall findings from this aspect of the study implies that while the patients may not be inclined to actively seek out information, the pamphlets and the information provided by the dietician may actually meet the information needs of the patients. The findings may also suggest that the patient may not perceive that they have a need for information and this observation is in line with Fourie's (2010) study where she discusses the dormant and unrecognised information needs (Fourie 2010: 38).

5.9 Summary of the chapter

This Chapter interpreted the data presented in Chapter Four. The data was interpreted in accordance with the information needs and information seeking behaviour of the adult type 2 diabetic patients at Addington Hospital in Durban. The interpretations of the results, reflect that the study was able to accomplish the objectives that it set out to achieve and answer the research question that was augmented in the study.

The survey further established that there existed a non-linear nature of diabetes information seeking behaviour amongst patients. The patients made decisions regarding their diabetes based on their current needs and information seeking behaviour. There also existed amongst the patients an interplay of both active information seeking and passive receipt of information. The study has managed to establish that the patients at the diabetic clinic relied heavily on the MO for their diabetes education.

The next chapter presents the conclusions and recommendations of the study based on these findings. The results and observations will be explained in terms of Longo et al. (2010) Health Information Model. Some of the key points from Chapters One through to Five will appear again in Chapter Six and may seem like a repetition of the chapters.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

"Our body is a machine for living. It is organized for that, it is its nature. Let life go on in it unhindered and let it defend itself, it will do more than if you paralyze it by encumbering it with remedies" (*Leo Tolstoy*).

6.1 Introduction

In this chapter, the conclusions and recommendations are in response to the analysis of the data and interpretations covered in Chapters Four and Five. The study investigated the information needs and information seeking behaviour of adult type 2 diabetic patients at Addington Hospital in Durban.

The purpose and objectives of the study will be briefly revisited. The results and observations in its entirety are explained and illustrated in terms of Longo et al. (2010) Health Information Model.

6.2 Revisiting the purpose and objectives of the study

The purpose of this study was to investigate the information needs and information seeking behaviour of adult type 2 diabetic patients. The study was conducted on the patients who attended the diabetic clinic at Addington Hospital in Durban. The Medical Officer and nursing staff at the clinic and the diabetic dietitian and the manager of the Dietetics Department were also participants in the study. This was done with the aim of obtaining the perspectives of everyone who was involved in the management of the patients' condition.

The objectives of the study were to establish what the information needs of the patients were; what their information seeking behaviours were; where they obtained their diabetes related information; whether they relied heavily on the doctor and nursing staff at the Diabetic Clinic for their information; whether they encountered any challenges and if they thought there was sufficient information available on diabetes. The purpose behind the objectives was to gain a better understanding of the patients' preferences in obtaining diabetes related information and what their information needs were, to enable the patient to better manage their condition.

6.3 The study in relation to Longo's Health Information Model

Of the several observations that have emerged from both the individual patient interviews and that of the healthcare professionals, it may be concluded that the results of this study conformed more to the Passive Receipt of Information category than to that of Active Information Seeking in Longo's model. The findings of this study revealed that the number of patients who obtained their information passively, far exceeded those who actively sought out information.

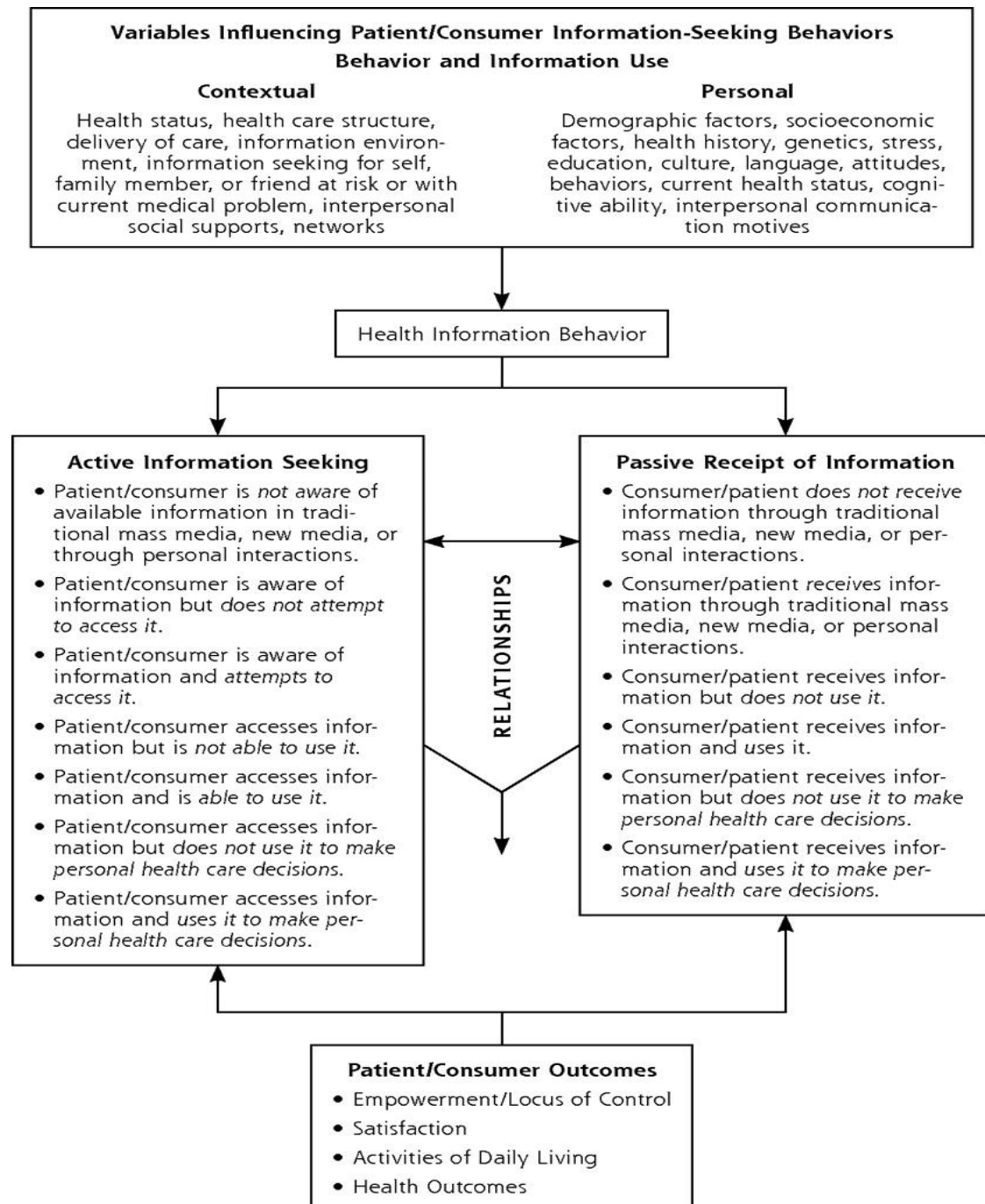


Figure 4: Revisiting Longo's Health Information Model: information seeking, passive receipt, and use

Longo's Health Information Model is revisited and discussed according to the following aspects of the model:

- Variables influencing the patient/consumer phase of information seeking behaviour and information use;
- Phases of information use: active information seeking; and
- Phases of information use: passive receipt of information.

6.3.1 Variables influencing patient/consumer

Variables influencing the patient/consumer phase include contextual and personal aspects.

6.3.1.1 Contextual

Health status

The health status of the patients was adult type 2 diabetic patients.

Healthcare structure

Addington Hospital is a public sector hospital that serves a multicultural community from the greater Durban area.

Delivery of care and information environment factors

The adult type 2 diabetic patients were attended to at the Diabetic Clinic at the Hospital. The healthcare professionals provided the patients with information on injection techniques, treatment dosing, foot care and healthy lifestyle choices. Information, in the form of talks and hand-outs, was provided on nutrition and different food groups. The patients have access to the DOH and KZNDOH pamphlets on diabetes and nutrition.

Information seeking for self, family member, or friend either at risk or with current medical problem:

- Internet

Some patients personally searched the internet (new media) to find information on diabetes or diabetes related consequences and other patients asked their family members to find and pass on the information to them.

- The Medical Officer

Most of the patients sought information from the MO.

- The DOH and KZNDOH diabetes pamphlets

Most of the patients utilised the DOH and KZNDOH diabetes pamphlets for their information needs.

Cross-cultural communication

Patients who attend the diabetic clinic are from a diverse population with English or Zulu being their first language. The pamphlets on diabetes are available in both languages and the healthcare professionals also communicate information to the patient in the patient's language of choice.

6.3.1.2 Personal

Demographic factors

The majority of patients who were type 2 diabetics were from the 50 to 59 years age group, followed by the 60 to 69 years age group. The highest number of patients attending the clinic was from the Indian and African communities respectively. The majority of patients had been diagnosed with diabetes for a period of five years or more. The clinic was used mainly by lower socio-economic groups.

Socioeconomic factors

The patients were from economically disadvantaged communities, hence many did not have access to the internet and many indicated they could not afford the foods recommended for diabetics.

Health history

Many of the patients suffered from some of the consequences of diabetes such as foot problems, eye complications, renal failure and amputations.

Genetics and family medical history

Many of the patients had a family history of diabetes and indicated the hereditary element.

Culture and language

The patients were from a diverse cultural background and the common languages were English and Zulu.

Health literacy

The patients had an overall understanding of what diabetes is, what they should or shouldn't be doing and many indicated that they were able to gauge from their symptoms whether or not their sugar levels were high.

6.3.2 Active information seeking

The results of the study revealed that only a small number of patients sought out information. These patients obtained their information by searching the internet and by obtaining their information from the public libraries. The findings of the study also revealed that two patients regularly attended meetings on diabetes. One patient indicated she attended the diabetic patient meetings once a week at Entabeni, a private hospital. The other patient attended the SADA monthly meetings and she indicated that she participated in their discussions.

While some patients did not attempt to access information, others were aware of the available information in traditional mass media, new media (internet), or through personal interactions. A few were able to use this information to make personal healthcare decisions but many were not.

6.3.3 The passive receipt of information

The results of the study revealed that the majority of patients obtained their diabetic information by chance or accidentally. Most of the patients indicated that they seldom initiated the information seeking process, but 'picked up' sporadic diabetic information that they happened to see or hear about.

Most of the observations that have emerged from the patient interviews indicated that received information occurred passively. Because the responses from the interviews were examined in their entirety, specific numbers and percentages are not reflected in the interpretations. Also excluded are the patients' responses indicating a heavy reliance on the doctor's medical expertise. The findings are illustrated in Table 30 below.

This passiveness may indicate that patients may not obtain a comprehensive understanding about diabetes, as they only obtain their information sporadically and from different sources. Hence this may be one of the reasons for the mismanagement of their diabetes.

Table 24: Passive receipt of information

Passive Receipt of Information
1. Consumer/patient does not receive information through traditional mass media, new media, or personal interactions. Findings from the study revealed that a small number of patients did not receive their information through traditional mass media, new media, or personal interactions.
2. Consumer/patient receives information through traditional mass media, new media, or personal interactions. The majority of the patients were more inclined to receive their information through traditional mass media, new media, or personal interactions.
3. Consumer/patient receives information but does not use it. A large number of patients received but they did not use the information.
4. Consumer/patient receives information and uses it. A small number of patients received and used the information.
5. Consumer/patient receives information but does not use it to make personal healthcare decisions . A higher number of patients indicated they did not use the information received to make personal healthcare decisions.
6. Consumer/patient receives information uses it to make personal healthcare decisions . A smaller number of patients indicated they received and used it to make personal healthcare decisions .

6.4 Conclusions

The outcome of the survey provides some useful insights into the preferences of information sources and information seeking amongst adult type 2 diabetic patients. The survey of the 96 adult type 2 diabetic patients, who attended the diabetic clinic at Addington Hospital, resulted in several significant findings.

The consistent mention and extensive use of the DOH and KZNDOH diabetes pamphlets reflected on the patients' preferences for information that is immediately accessible and easy to understand. Despite the power of the internet, the patients reported that they relied more on information provided by the doctor, the dieticians and the hand-outs and pamphlets that are available at the clinic. Some patients relied on their family members to search and find diabetes related information on the internet.

6.4.1 The study's research questions

The study's research question was: **How can a better understanding of the information needs and information seeking behaviour of diabetic patients contribute to their successful management of the disease diabetes?**

The findings of the study are based on the data collected from various literature sources, patients and healthcare professionals. The following collection methods were used:

- Adult type 2 diabetic patients: an individual face-to-face and telephone interview schedule was used.
- Healthcare professionals: a self-administered questionnaire was completed by the healthcare professionals.
- Literature review

6.4.1.1 What prompts type 2 diabetic patients to seek out information about diabetes?

The study established that the patients were prompted to look for information when a problem occurred, or when they wanted to treat a diabetes related problem. The patients' reasons for seeking information were health related, to enable them to make better lifestyle choices and manage the side effects of diabetes.

6.4.1.2 What are the information needs of type 2 diabetic patients?

It emerged from the study that the prevention of amputations and a general fear of diabetes related consequences, were some of the areas where the patients need information urgently.

The patients indicated that obtaining the following information was important to them:

- Long term complications, such as amputations;
- Ways to better manage their diabetes; and
- Ways to treat an existing diabetes related problem.

The study established that patients had different information needs which were dependent on the patients' health related problem at the time. The study was consistent with Fourie's (2010) study of cancer patients having different information needs at different stages of their disease and Peel et al. (2004) study which indicated that the patient wanted information on the different routes to diagnosis.

The study revealed and recognised that patients vary in how much information they want and this changes when a complication as a result of diabetes occurs.

6.4.1.3 What are the patients' information seeking behaviours?

The study found that the majority of the patients sought out diabetes related information from the MO, the Dieticians and the KZNDOH pamphlets on diabetes. The information seeking behaviour amongst patients was non-linear in nature,

whereby decisions were made regarding their diabetes based on current needs and information seeking behaviour.

The study established that many of the patients reported that the mass media, such as the newspapers, television and radio talk shows played an inadvertent role in providing information on diabetes. The patients also talked to other diabetics and articulated their difficulties in living with diabetes, thereby exchanging information with each other.

6.4.1.4 Where do the diabetes patients obtain diabetes related information?

The study revealed that the patients relied on the MO for their diabetes information. The study also indicated that the patients obtain their diabetes related information from the Dietician, and they indicated a preference with regard to the KZNDOH and DOH diabetes pamphlets. Many of the patients indicated that they only trusted the information obtained from the doctor and almost all of the patients pointed out the positive aspects of the DOH and KZNDOH pamphlets,

6.4.1.5 The sources or types of sources the patients used to answer their questions about diabetes

The study established that the majority of patients came across relevant information about diabetes during the course of their daily activities such as switching between television channels, listening to their favourite radio stations or by reading the newspapers or magazines. This reflected on the patients' passive receipt of information through the mass media and by talking to other diabetics.

A smaller number of patients indicated they used the internet (new media) and even smaller numbers indicated they used the public library to find their information on diabetes.

The study established that the patients' preferences were on obtaining the information from the MO and by reading the diabetic pamphlets and posters that are available at the diabetic clinic.

6.4.1.6 Challenges the patients encounter with regard to seeking health information on diabetes.

The study established that the patients who were consulting the medical journals found that source to be difficult to understand. These sources obviously are geared towards the healthcare professionals. Reliable, easy to understand information on diabetes can be obtained in the DOH and KZNDOH pamphlets on diabetes.

Another challenge the study established was that the patients did not know where to find information other than that provided by the Healthcare professionals and the Diabetic Clinic.

6.4.1.7 The patients' opinions on whether there was sufficient information available on type 2 diabetes.

The study established that the majority of patients were satisfied with the amount of diabetes information available to assist them with their treatment. However some patients indicated they did not know where to find information other than that provided by the diabetic doctor.

6.4.1.8 Do the patients rely heavily on the diabetic doctor and nursing staff for their diabetic information?

The study established that the patients relied heavily on the diabetic doctor for their diabetes education and information. Many patients indicated they only trusted the information provided by the doctor. The study revealed that while the patient may come across diabetes information by chance or accidentally, they did not utilise the information without first consulting with the doctor.

The study was therefore able to answer the research questions that guided this study

6.4.3 Summary of the chapters

The study consisted of the following chapters:

Chapter One introduced the study and provided a general background to the research problem. The background with regard to type 2 diabetes was delineated and a brief description of type 1 diabetes and gestational diabetes was provided. The research questions, delimitations, significance and the broader issues to be examined have been delineated. The broader issues that were examined included health literacy, patient knowledge of diabetes and the role of the Department of Health. The roles the DOH and KZNDOH featured significantly in Chapters Five and Six. Succinct definitions of terms used in the study were provided. A brief overview of the research methods used in the study was provided and this included the survey research methods which used both the qualitative and quantitative approaches. The chapter outlined the study population and how the data was collected and analysed. Longo et al. (2010) Health Information Model: information seeking, passive receipt, and use, formed the conceptual framework for this study and was reviewed with the recognition of other information needs and information seeking behaviour related models.

To set Chapter Two in context, the background to the health information system was provided. Within the background, the diabetic information provision services by the KwaZulu-Natal Department of Health, the Dietetics Department and the diabetic Clinic were outlined. The review of the literature in Chapter Two, helped to conceptualise some of the key terms related to this study that were discussed in Chapter One. Further information behaviour in the South African context was discussed, including a brief overview of the conceptual and theoretical frameworks covered in these South African studies. The review of the literature identified various trends that have been investigated in relation to the study and to indicate where the present study fits into these broader debates, thereby justifying the significance of the study. Four trends that appeared the most in the literature reviewed guided the route of this study.

Chapter Three presented and discussed the research methods that were employed in this study. The chapter described the broader research methodologies and the specific research method that was used in the study. The study followed the qualitative and quantitative methodologies which are explained in this chapter. It was significant to explain the population for this study which were the adult type 2 diabetic patients. The study surveyed the entire population of type 2 adult diabetic patients. Descriptions of the population surveyed, instruments, their form and categories of questions have been provided. The data collection procedures, how the pre-test was conducted and the evaluation of the research method, including the issues of reliability and validity have been discussed.

Chapter Four provided a detailed report of the survey results obtained by investigating the information needs and information seeking behaviour of adult type 2 diabetic patients at Addington Hospital in Durban. The results of the survey have sufficiently answered the research questions that were reflected in Chapter One. Data was collected on the information needs and information seeking behaviour of adult type 2 diabetic patients from the perspectives of the patients and that of the healthcare professionals. The results reported on the patients' receipt of initial diabetes education at the time of diagnosis and the types of diabetes information received from the doctor, the nursing staff and the dieticians. The results also identified the patients' preferences with regard to the provision of information sources, the frequency of use, reasons for their choices and the reliance on the doctor for their diabetes information. The responses from the doctor and the nursing staff reflected on the type of information that was provided to the patients. This included education on injection techniques and treatment dosage, information on foot care and the provision of packaged information compiled by the KZNDOH and the drug companies. The survey also sought out the views and information provision from the diabetic dieticians. The results revealed that they provided the patients with information on food choices, information supplied by the KZNDOH on the South African food based dietary guidelines and basic dietetics information.

The data presented in Chapter Four was interpreted in accordance with the information needs and information seeking behaviour of the adult type 2 diabetic patients at Addington Hospital in Durban. The interpretations of the results reflected that the study was able to accomplish the objectives that it set out to achieve and answered the research question that was augmented in the study.

The survey further established that a non-linear nature of diabetes information seeking behaviour existed amongst the patients. The patients made decisions regarding their diabetes based on their current needs and information seeking behaviour. There also existed amongst the patients an interplay of both the active information seeking and the passive receipt of information. The study has managed to establish that the patients at the diabetic clinic relied heavily on the diabetic doctor for their diabetes education.

Chapter Six presented the conclusions and recommendations of the study based on findings of the research. The results and observations were explained in terms of Longo et al. (2010) Health Information Model.

6.5 Recommendations

This section establishes the way forward in the development and improvement of the diabetes information services to the patients at Addington Hospital. While the study revealed that at the Diabetic Clinic and hospital, the existing services and provision of reliable healthcare information to the patients is exemplary, there is a need to vary and change information in accordance with the needs of the patients.

Recommendations drawn from the conclusions of this study include the following:

- The Department of Health has a useful section on diabetes on their website and this is geared towards the patient. This information needs to be made available to the patients. For example, the URL or website address could be included in the diabetes pamphlets that are available in the hospital.
- The Diabetic Clinic and Hospital should consider approaching SADA with regard to volunteering their services and facilities to the patients at the hospital during Diabetes Month. The idea of physically taking the patients to the supermarkets to show them how to shop for their recommended foods and how to select alternative products may appeal to the patient.
- The Diabetic Clinic should consider playing a video/dvd recording on diabetes in the patient waiting room. The patients who are less inclined to talk to the other patients or to read the pamphlets at the clinic, will receive some information on diabetes in another format.

- Many of the patients indicated their concerns about their feet and expressed their fears of amputations. While the MO and the dietician provided the patients with informative and reliable information, information from a podiatrist may introduce another perspective on foot care. The Clinic should therefore consider inviting a podiatrist to speak to the patients about foot care.
- There is a need for the dieticians to understand the collectivist culture of the patients' current diets and what foods they can afford and suggest appropriate diets and eating plans for the patients.
- Due to insufficient consultation time, critical support and information provision is not consistently delivered by the nursing staff. The idea of using trained patients (peer health coaching) is recommended. For example patients with better controlled diabetes can be trained to provide information about diabetes and healthy lifestyle choices pertaining to physical activity and nutrition. They could also instruct the patients on how to administer their medication.
- The hospital should consider extending the medical library services and facilities to the patients at the hospital.
- Some of the male patients indicated they were embarrassed to discuss sensitive issues such as aspects of sexual dysfunction with the medical professionals. The DOH should therefore consider repackaging information regarding such sensitive issues in a pamphlet.
- South African television production companies should consider introducing diabetic fictional characters in their drama series such as Isidingo and Generations. This idea of incorporating social issues in local drama series has been successfully accomplished with regard to HIV/AIDS awareness.

6.6 Future research

Information needs and information seeking behaviour from various perspectives have indeed become an important topic in the literature to assist patients with the treatment of their medical conditions. Much of the information behaviour (information needs and information seeking) research done to date has focussed on the characteristics of the users. However, very few empirical studies have been conducted on the topic of the study. Many studies revealed that the patients possessed factual knowledge and information on how to effectively manage and control their diabetes, however whether or not the patients fully assimilate this knowledge and information is debateable. Research on information seeking behaviour is inadequate unless it takes into consideration the use of that information. Without an understanding of the effects

of information on type 2 diabetes patients and their behaviour, we have an incomplete picture of how information changes these patients' behaviour, which is of primary concern in healthcare information. Therefore, while it is important to understand the specific characteristics, such as the information needs and information seeking behaviour of the user, it is also important to understand how information can affect their behaviour.

6.7 Summary of the chapter

This chapter presented the findings on the research question that was originally outlined in Chapter One. The purpose and objectives of the study were outlined and the findings of the study were discussed in relation to Longo et al. (2010) Health Information Model, the variables that influenced the patient/consumer, which included the contextual and personal elements, the active information seeking and the passive receipt of information.

The concluding remarks and summaries of all the chapters were presented. Recommendations for further developments and improvements of the diabetic information services at Addington were outlined. Some suggestions with regard to future research were provided.

List of works cited

Arrangement and layout of the entries

Arrangement

The author-date system of reference style, outlined in *The Chicago Manual of Style*, 15th ed., 2003 has been followed.

The references are arranged alphabetically according to author or according to a title if there is no author.

Works by the same author are arranged chronologically by date and when an author has more than one publication in the same year, a lower case alphabetical suffix is attached after each date.

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Appendices

Appendix A:	The patients and healthcare professionals introduction letter and informed consent
Appendix B:	The patient interview introduction letter
Appendix C:	Questionnaire introduction letter
Appendix D:	The patient interview schedule
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Appendix F:	Self-administered questionnaire for the dietician
Appendix G:	The diabetes talk held at a weekly clinic at the diabetic clinic at Addington Hospital
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Appendix A: The patients and healthcare professionals' introduction letter and informed consent

17 October 2011

Dear Participant

I, Praba Naidoo, am a student currently registered for a Masters in Information Studies degree at the Pietermaritzburg campus of the University of KwaZulu-Natal (UKZN). The topic for my thesis is:

“The information needs and information seeking behaviour of adult diabetic patients at the Addington Hospital in Durban”.

You are invited to participate in the research. The purpose of this study is to learn about your experiences with obtaining and using information related to your diabetes. The research will also enable us to establish what your preferences are with regard to the sources of diabetic health information. Not much is actually known about how patients with diabetes obtain and use health information, yet this is important to know so that the healthcare workers, such as the doctors, nurses, dieticians and the Department of Health, have an understanding of these processes.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Please note that your name will not be included in the report and your confidentiality will be maintained throughout the study.

Your participation in answering the questions is completely voluntary. You have the right to withdraw at any time during the study.

I appreciate the time and effort it would take to participate in this study.

Thank you.

Sincerely,

Praba Naidoo
Management Studies
Subject Librarian
Cecil Renaud Library, Pietermaritzburg
Tel: 033 2605096
Email: naidoop11@ukzn.ac.za

Supervisor

Dr. Ruth Hoskins
Acting Deputy Head of School
Sociology and Social Studies
Information Studies
hoskinsr@ukzn.ac.za
033 -2605093

Please complete the section below.

I..... (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature of Participant:

Date:

Appendix B: The patient interview introduction letter

17 October 2011

Dear Participant

I want to thank you for taking the time to speak to me today. My name is Praba Naidoo and I would like to talk to you about your experiences with obtaining and using information related to your diabetes. The purpose of this interview is to learn about your experiences.

This study is conducted in my personal capacity, as part of my masters degree. The interview should take less than an hour. All responses will be kept confidential. This means that your interview responses will only be shared with research team members and we will ensure that any information we include in our report does not identify you as the respondent. Remember you don't have to talk about anything you don't want to and you may end the interview at any time.

Thank you.

Sincerely,

Praba Naidoo

Appendix C: Questionnaire introduction letter

17 October 2011

Dear

I, Praba Naidoo, am a student currently registered for a Masters in Information Studies degree at the Pietermaritzburg campus of the University of KwaZulu-Natal (UKZN). The topic for my thesis is:

“The information needs and information seeking behaviour of adult diabetic patients at the Addington Hospital in Durban”.

You are invited to participate in the research. The purpose of this study is to establish the diabetic patients’ preferences with regard to the sources of diabetic health information.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. Please note that your name will not be included in the report and your confidentiality will be maintained throughout the study.

Your participation in answering the questions is completely voluntary. You have the right to withdraw at any time during the study.

I appreciate the time and effort it would take to participate in this study.

Thank you.

Sincerely,

Praba Naidoo

Management Studies

Subject Librarian

Cecil Renaud Library, Pietermaritzburg

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Appendix D: The patient interview schedule

Interview starts at _____

Section A: Demographics

1. Participant name: (optional) _____

2. Gender

Male ☐

Female ☐

3. Age

18 – 23 ☐

24 – 29 ☐

30 – 39 ☐

40 – 49 ☐

50 – 59 ☐

60 – 69 ☐

70 and over ☐

4. Race

African ☐

Coloured ☐

Indian ☐

White ☐

Other ☐

5. First Language

English ☐

Zulu ☐

Afrikaans ☐

Other ☐

Section B: Diabetic information needs and seeking behaviour

6. How long has it been since your diabetes was first diagnosed?

- Less than 1 year ☐
- 1 year or more, but less than 2 years ☐
- 2 years or more, but less than 3 years ☐
- 3 years or more, but less than 4 years ☐
- 4 years or more, but less than 5 years ☐
- 5 years or more ☐

7. Do you take oral medication for your diabetes?

- Yes ☐
- No ☐

8. Do you take insulin for your diabetes?

- Yes ☐
- No ☐

9. At the time of your diagnosis, did you receive initial diabetes education...
(tick yes or no for each of the lines 9a to 9d)

9a. ...from the doctor?

- Yes ☐
- No ☐

9b. ... from the nurse?

- Yes ☐
- No ☐

9c. ... from the dietician?

- Yes ☐
- No ☐

9d. ... from the South African Diabetic Association (SADA)?

- Yes ☐
- No ☐

9.1 If yes, could you please elaborate?

10. Do you rely heavily on the diabetic doctor and the nursing staff at the hospital for your diabetic education?

Yes ☐

No ☐

10.1 If yes, when do they convey this information to you?

10.11 When you ask for information?

Yes ☐

No ☐

10.12 With each visit to the hospital?

Yes ☐

No ☐

11. Are you satisfied with how the doctor and the nursing staff at the hospital convey information to you about your diabetes?

Yes ☐

No ☐

11.1 Please explain your answer?

12. At the time of your diagnosis, did you seek additional information about diabetes, other than that provided through the doctor, nursing staff, dietician or diabetic association?

Yes ☐

No ☐

13. Please list the information sources or types of information sources you have used to answer questions about your diabetes? By information, we mean any information you may have received through traditional mass media (television programmes, newspapers, radio, magazines), the internet, online discussion groups, South African Diabetic Association group discussions, personal interactions with healthcare professionals (doctors, nurses, dieticians), friends, family or others with diabetes.

13.1 Why do you use these sources?

14. What prompts or makes you seek out information about your diabetes?

14.1 How often do you look for information about your diabetes? Please explain?

14.2 Do you look for information when a problem occurs?

Yes ☐

No ☐

14.2.1 If yes, please explain?

14.3 Have you ever heard something or read something about diabetes that prompted or made you seek out more information? Please explain?

15. Do you use the internet to find information?

Yes ☐

No ☐

15.1 If yes, what information sources do you consult on the internet?

16. Do you ask your family members or friends to find you information on the internet?

Yes ☐

No ☐

16.1 What information sources do they find for you on the internet?

17. Do you trust the information you get from the internet?

Yes ☐

No ☐

17.1 Please elaborate?

18. Do you use the public library to find information about your diabetes?

Yes ☐

No ☐

18.1 If yes, what is the name of the Public Library and where is it?

18.2 Does the library have sufficient books and other sources to help you answer your questions about diabetes?

Yes ☐

No ☐

18.3 Please elaborate?

19. Do you feel the following are some of the challenges you come across with regard to seeking health information on diabetes?

19.1 The information in the sources you consult, is difficult to understand?

Yes ☐

No ☐

19.2 The information isn't available in the language of your choice?

Yes ☐

No ☐

19.3 You do not know where to find information sources, other than that provided to you by the doctors and nursing staff at the hospital?

Yes ☐

No ☐

19.4 Are there any other challenges you would like to add that are not listed?

20. Do you think there is enough or sufficient information available on diabetes to assist you with your treatment?

Yes ☐

No ☐

21. Is there anything you would like to add?

Interview ends at _____

Appendix E: Self-administered questionnaire for the medical doctor and nursing staff

Please complete the following questionnaire by clearly marking the relevant spaces or boxes or by filling in the information requested?

Section A: Demographics

1. Participant name: (optional) _____
2. Gender
 - Male ☐
 - Female ☐
3. Occupation title _____

Section B: Diabetes education

4. When do you provide the patient with diabetes education?
 - 4.1 At the time of diagnosis?
 - Yes ☐
 - No ☐
 - 4.2 When the patient asks for information?
 - Yes ☐
 - No ☐
 - 4.3 With each visit to the hospital?
 - Yes ☐
 - No ☐
5. What types of information do you provide?
 - 5.1 Verbal
 - Yes ☐
 - No ☐

5.1.1 If yes, could you please elaborate?

5.2 Packaged information such as hand-outs and pamphlets on diabetes?

Yes ☐

No ☐

5.2.1 If yes, could you please elaborate?

6. Do you provide support group diabetes education?

Yes ☐

No ☐

6.1 If yes, could you please elaborate?

7. Do you refer the patient to the dietetics department for additional information?

Yes ☐

No ☐

8. Do you consider the consultation time sufficient to deal effectively with the diabetic patient's concerns and information needs?

Yes ☐

No ☐

9. Is there anything you would like to add?

Thank you for taking the time to complete the questionnaire

Appendix F: Self-administered questionnaire for the dietician

Please complete the following questionnaire by clearly marking the relevant spaces or boxes or by filling in the information requested?

Section A: Demographics

1. Participant name: (optional) _____
2. Gender
 - Male ☐
 - Female ☐
3. Occupation title _____

Section B: Diabetes dietary education

4. When do you provide the patient with diabetes dietary education?
 - 4.1 When the patient is referred to you
 - Yes ☐
 - No ☐
 - 4.2 At the time of diagnosis?
 - Yes ☐
 - No ☐
 - 4.3 When the patient asks for information?
 - Yes ☐
 - No ☐
5. What types of information do you provide?
 - 5.1 Verbal
 - Yes ☐
 - No ☐
 - 5.1.1 If yes, could you please elaborate?

5.2 Packaged information such as hand-outs and pamphlets on diabetes eating plans?

Yes ☐

No ☐

5.2.1 If yes, could you please elaborate?

6. Do you provide the diabetic patients with information during a group discussion session?

Yes ☐

No ☐

6.1 If yes, could you please elaborate?

7. Do you consider the consultation time sufficient to deal effectively with the diabetic patient's concerns and information needs?

Yes ☐

No ☐

8. Is there anything you would like to add?

Thank you for taking the time to complete the questionnaire

Appendix G: The diabetes talk held at a weekly diabetic clinic at the diabetic clinic at Addington Hospital

Dietary Guidelines for Diabetes

Firstly, the diabetic diet is nothing special. In fact it is a normal healthy eating plan that the entire family should follow (no preparing separate meals).

When you eat food it breaks down in your body and affects your blood sugar. That is why it is important to eat the right kinds of foods and the right amounts. Make sure you don't eat too much food that causes blood sugar to rise at once. Rather have 5-6 small meals a day instead of 3 large meals.

Different foods affect blood sugar.

The foods that make sugar increase are starchy foods and sugary foods.

STARCHY FOODS

Bread, rice, potatoes, mealies, samp, porridge, cereals and pasta.

Everyone needs to eat these foods to feel full but diabetics need to control the amount they eat. The amount of starch that should be eaten at a time is a portion the size of your fist for rice, samp, phutu and pasta or 1 cup of cereals or 2 slices of bread. Whenever possible choose brown starches as these contain fibre which is good for blood sugar. E.g. brown bread instead of white bread, brown oats instead of maize meals. This does not apply for sugar!!! Brown sugar and white sugar are the same and both will cause your blood sugar to rise.

CHICKEN, FISH, MEAT, MILK, EGGS, BEANS AND NUTS

These foods contain protein which help control blood sugar. Whenever eating a starchy food (which causes blood sugar to rise) also eat one of these foods. E.g. samp and beans, chicken curry and rice, peanut butter sandwich, egg and toast. However it is not good to eat the fat that comes from animal products as this increases cholesterol, blood pressure and can cause heart

disease. Red meat has a lot of fat so only eat it once or twice a week (rather have chicken or fish), remove visible fat from red meat and skin from chicken before cooking it, buy low fat or fat-free milk instead of full cream, avoid very fatty meats such as bacon, sausages, polony, tripe and viennas. Beans, soya and lentils are high in fibre and protein as well as low in fat which makes them very good for diabetics. Add these to diet! E.g. add beans to a curry, add soya mince to regular mince.

VEGETABLES AND FRUIT

Vegetables and fruit are high in vitamins and minerals and fat free. Try eat 5 different vegetables and fruits a day. The only vegetables that affect blood sugar are potatoes, sweet potatoes, butternut and melons. Count these as starches and not vegetables. Eat plenty of the other vegetables.

Fruit has a natural sugar in it but is still very good for you. Eat one portion of fruit at a time (e.g. don't eat two apples at once, rather have one in the morning and one in the afternoon). Fruit juice has a lot of natural sugar in it and should not be drunk often.

FATS AND OILS

Eating too much fat can lead to weight gain. Try not to eat too many fried foods. Rather grill, boil or bake food instead of frying.

Choose low fat options when possible (low fat mayonnaise, reduced fat margarine).

SUGAR AND FOODS/DRINKS CONTAINING SUGAR

Sugar, sweets, cakes, biscuits, ice-cream, jelly and juice

These foods cause a rapid rise in blood sugar. Only eat them occasionally and when having them only eat a little bit at a time (e.g. only eat one or two biscuits instead of a whole pack, have a small piece of cake). These foods really will affect your blood sugar. Look for sugar-free foods (such as sugar-free yoghurt, Tab or Coke Light).

SALT

Eating too much salt can cause high blood pressure. Salt is found in stock cubes, packet soups and sauces, Aromat and other artificial seasonings and processed foods (take-aways, viennas, chips etc). To add flavour to food rather use natural herbs and spices such as chillis, curry powder, garlic, ginger and herbs.

EXERCISE

Losing weight is very important to lower blood pressure. Following a healthy diet and doing is exercise is very important for weight loss. Try do 30 minutes of exercise a day, such as going for a brisk walk, dancing or playing sport. If you find it hard to do 30 minutes of exercise at once break it up into two 15 minute sessions or 3 ten minute sessions.

Appendix H: The South African food based dietary guidelines modified by the diabetic dietician at Addington Hospital

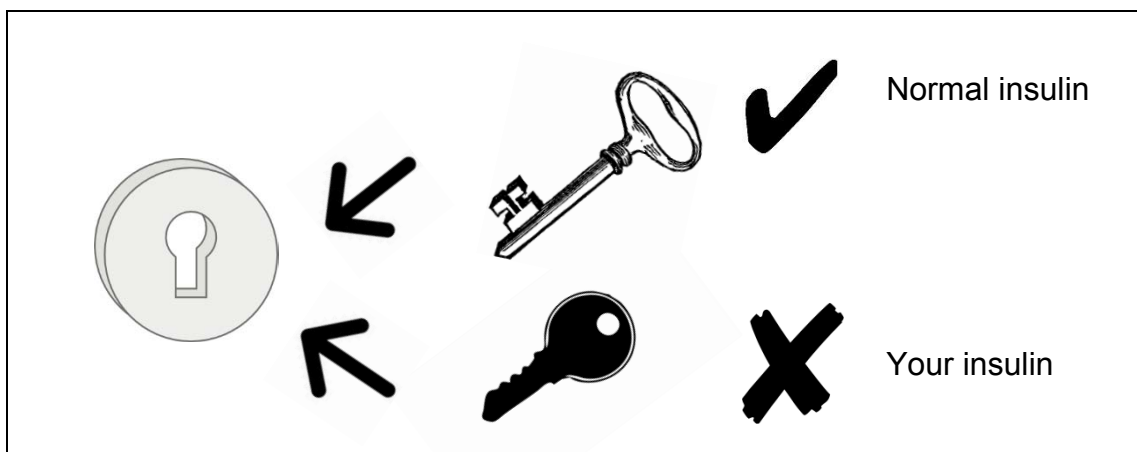
Dietary Guidelines for Diabetes

What is diabetes?

Type 2 diabetes is a condition where your body produces insulin that doesn't work properly. You still produce insulin but there's something wrong with it.

Insulin is a hormone responsible for transporting glucose from your blood into your cells (where it is used for energy). So in diabetes the glucose stays in your blood instead of entering your cells.

Think of it this way: Insulin is a key and it needs to open a lock so that the glucose can go from the blood and into your cells. Unfortunately your insulin is the wrong key so it can't unlock the cell for glucose to enter it.



Symptoms of diabetes:

- Extreme thirst
- Frequent urination
- Dry skin
- Hunger
- Blurred vision
- Lack of energy
- Poor wound healing

How do I control my diabetes?

Diabetes is a self-managed condition. It is important to take your medication correctly and follow a balanced diet.

The diabetic diet is nothing special. In fact it is a normal healthy eating plan that the entire family should follow (no preparing separate meals).

When you eat food it breaks down in your body and affects your blood sugar. That is why it is important to eat the right kinds of foods and the right amounts. Make sure you don't eat too much food that causes blood sugar to rise at once. Talk to your doctor about how many meals you should eat a day. Never skip meals!

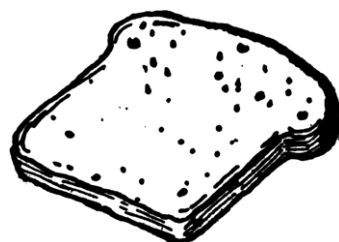
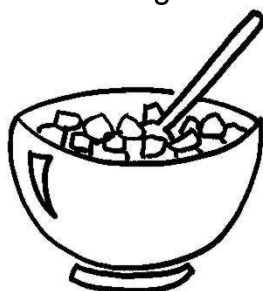
Different foods affect blood sugar differently.

The foods that make sugar increase are *starchy* foods and *sugary* foods. We're going to first look at starchy foods and later discuss sugar and sugar containing foods.

STARCHY FOODS

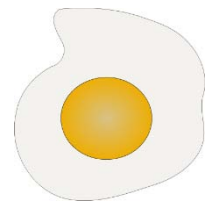
Bread, rice, potatoes, mealies, samp, porridge, cereals and pasta.

Everyone needs to eat these foods to feel full but diabetics need to control the amount they eat. The amount of starch that should be eaten at a time is a portion the size of your fist of rice, samp, phutu and pasta or 1 cup of cereals or 2 slices of bread. Eat equal portions of starch across the day (to avoid highs and lows in blood sugar). Whenever possible choose brown starches as these contain **fibre** which is good for blood sugar control. E.g. brown bread instead of white bread, brown oats instead of maize meal. This does **not** apply for sugar!!! Brown sugar and white sugar are the same and both will cause your blood sugar to rise.



CHICKEN, FISH, MEAT, MILK, EGGS, BEANS AND NUTS

These foods contain **protein** which **help control blood sugar**. Whenever eating a starchy food (which causes blood sugar to rise) also eat one of these foods. E.g. samp and beans, chicken curry and rice, peanut butter sandwich, egg and toast. However it is not good to eat the **fat** that comes from animal products as this increases cholesterol, blood pressure and can cause heart disease. Red meat has a lot of fat so only eat it once or twice a week (rather have chicken or fish), remove visible fat from red meat and skin from chicken before cooking it, buy low fat or fat-free milk instead of full cream, avoid very fatty meats such as bacon, sausages, polony, tripe and viennas. Beans, soya and lentils are high in fibre and protein as well as low in fat which makes them very good for diabetics. Add these to your diet! E.g. add beans to a curry, add soya mince to regular mince.



VEGETABLES AND FRUIT

Vegetables and fruit are high in vitamins and minerals and fat free. Try eat **5** different vegetables and fruits a day. The only vegetables that affect blood sugar are potatoes, sweet potatoes, butternut and mielies. Count these as starches and not vegetables. Eat plenty of the other vegetables.

Fruit has a natural sugar in it but is still very good for you. Eat one portion of fruit at a time (e.g. don't eat two apples at once, rather have one in the morning and one in the afternoon). Fruit juice has a lot of natural sugar in it and should not be drunk often.

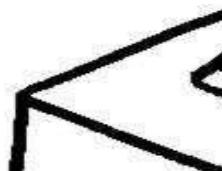
1 fruit portion = 1 medium sized fruit or $\frac{1}{2}$ cup of fresh cut up fruit or $\frac{1}{2}$ cup fruit juice or $\frac{1}{4}$ cup dried fruit

1 vegetable portion = $\frac{1}{2}$ cup cooked vegetables or 1 cup raw vegetables





FATS AND OILS



Eating too much fat can lead to weight gain and cardiovascular disease. Try not to eat too many fried foods. Rather grill, boil or bake food instead of frying.

Choose low fat options when possible (low fat mayonnaise, reduced fat margarine, low fat milk). Don't eat take aways, sausages, polony, samoosas, chili bites and pies.

Avoid cooking with animal fats such as butter, cream, lard and ghee.

SUGAR AND FOODS/DRINKS CONTAINING SUGAR



These include: sugar, sweets, cakes, biscuits, ice-cream, jam, jelly and juice. These foods cause a rapid rise in blood sugar. Only eat them occasionally and when having them only eat a little bit a time (e.g. only eat one or two biscuits instead of a whole pack, have a small piece of cake as opposed a big slice). These foods really will affect your blood sugar. Look for sugar-free foods (such as sugar-free yoghurt, Tab, Coke Light, Sprite Zero). Even 100% fruit juice is very sugary. Rather eat an actual fruit. If you do have fruit juice dilute it half juice and half water so it's not as sweet. Remember not to have more than half a cup (125ml) of the actual fruit juice.



SALT



Eating too much salt can cause high blood pressure. Salt is found in stock cubes, packet soups and sauces, Aromat and other artificial seasonings and processed foods (take-aways, viennas, chips etc). To add flavour to food rather use natural herbs and spices such as chillis, curry powder, garlic, ginger, lemon juice and herbs.

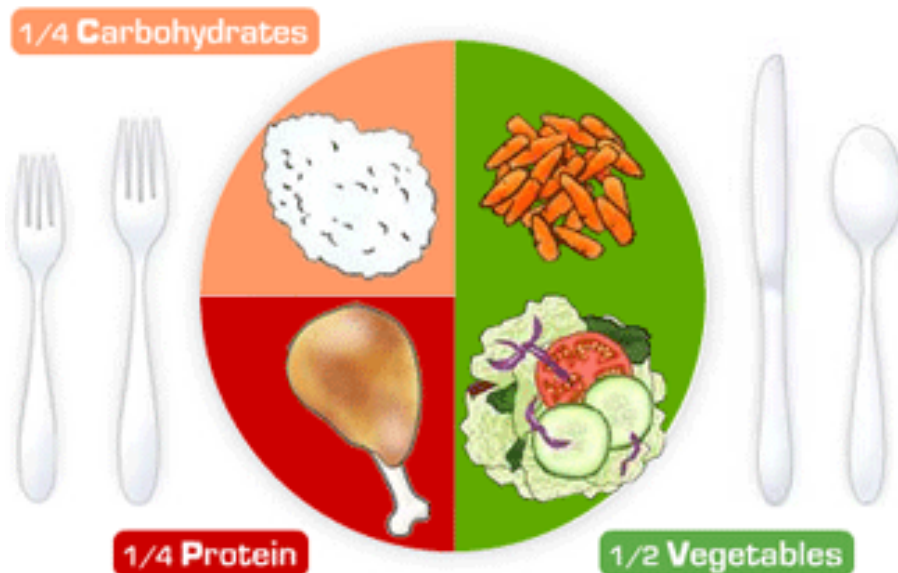
EXERCISE



Losing weight is very important to lower blood pressure and it helps with sugar control. Following a healthy diet and doing is exercise is very important for weight loss. Try to do 30 minutes of exercise a day, such as going for a brisk walk, dancing or playing sport. If you find it hard to do 30 minutes of exercise at once break it up into two 15 minute sessions or three 10 minute sessions.

If you are going to do an unusual amount of exercise then have a carbohydrate containing snack before (such as a peanut butter sandwich)

An example of a balanced meal



Targets for control

	Optimal	Acceptable	Compromised (need better control)
Glucose – fasting (mmol/L)	4-6	6-8	>8
Glucose – after meal (mmol/L)	5-8	8-10	>10
Total cholesterol (mmol/L)	<5.2	5.2-6.5	>6.5
Blood pressure (mmHg)	<140/90	140/90- 160/95	>160/95
Body Mass Index (BMI) (kg/m ²)	20-25	25-27	>27

Note: BMI is used to calculate if you are underweight, normal weight or overweight. It looks at your weight in relation to your height. If you are curious as to know if you are of a healthy weight then ask a dietician to calculate your BMI for you.

$BMI = \text{weight (kg)} \div \text{height(m)}^2$

Hypoglycaemia

Hypoglycaemia refers to **low blood sugar** (glucose <3mmol/L). Make sure you have regular meals to prevent hypoglycaemia and that you are taking your medication correctly. Alcohol can also cause hypoglycaemia therefore diabetics are encouraged not to drink (especially on an empty stomach).

Signs and symptoms of hypoglycaemia:

- Sweating
- Increased heart rate
- Nervousness
- Hunger
- Weakness
- Headache
- Visual disturbances
- Irritability
- Confusion

Treatment of hypoglycaemia

If you are beginning to experience some of these symptoms then have a carbohydrate containing snack (e.g. provita biscuits with low fat cottage cheese). If you find that your sugar is very low then take 2-4 teaspoons of sugar with a little water or milk. If necessary (symptoms haven't resolved) repeat this step 10-15 minutes later. Thereafter have a carbohydrate and protein containing snack (e.g. an egg sandwich).

Appendix I: The University of KwaZulu-Natal Ethics Committee approval letter



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4 July 2011

Ms P Naidoo (209539944)
School of Sociology & Social Studies
Faculty of Humanities, Development &
Social Sciences
Pietermaritzburg Campus

Dear Ms Naidoo

PROTOCOL REFERENCE NUMBER: HSS/0448/011M

PROJECT TITLE: The information needs and information seeking behavior of adult diabetic patients at the Addington Hospital in Durban

In response to your application dated 29 June 2011, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....
Professor Steven Collings (Chair)
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc. Supervisor: Dr R Hoskins

cc. Mrs B Jacobsen, Higher Degrees Office, Pietermaritzburg Campus



Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

Appendix J: The KwaZulu-Natal Department of Health research proposal approval letter



health

Department:
Health
PROVINCE OF KWAZULU-NATAL

Health Research & Knowledge Management
10 – 103 Natalia Building, 330 Langalibalele Street
Private Bag x9051
Pietermaritzburg, 3200
Tel.: 033 – 395 2895
Fax.: 033 – 394 3782
Email.: hrkm@kznhealth.gov.za
www.kznhealth.gov.za

Reference : HRKM 72/11
Enquiries : Mr X. Xaba
Telephone : 033 – 395 2805

Dear Ms P. Naidoo

Subject: Approval of a Research Proposal

1. The research proposal titled '**The information needs and information seeking behaviour of adult diabetic patients at Addington Hospital in Durban**' was reviewed by the KwaZulu-Natal Department of Health.

The proposal is hereby approved for research to be undertaken at Addington hospital.

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.

Yours Sincerely

Mrs E. Snyman
Acting Chairperson: Provincial Health Research Committee
KZN Department of Health
Date: 28/06/2011

uMnyango Wezempilo . Departement van Gesondheid

Fighting Disease, Fighting Poverty, Giving Hope

Appendix K: Addington Hospital Management permission to conduct study at Addington letter



ADDINGTON HOSPITAL
OFFICE OF THE HOSPITAL MANAGER
Postal Address: P.O. Box 977, DURBAN, 4000
Physical Address: 16 Erskine Terrace, South Beach
Tel.: (031) 327-2970, Fax.: (031) 368-3300
Email: addington.management@kznhealth.gov.za
www.kznhealth.gov.za

AD/9/2/3/R

Enquiries: Dr R N Mokoena
Extension: 2970/2568

25 May 2011


Principal Investigator:
➤ Praba Naidoo

PERMISSION TO CONDUCT RESEARCH AT ADDINGTON HOSPITAL: "THE INFORMATION NEEDS AND INFORMATION SEEKING BEHAVIOUR OF ADULT DIABETIC PATIENTS AT THE ADDINGTON HOSPITAL IN DURBAN"

I have pleasure in informing you that permission has been granted to you by Addington Management to conduct research on "The information needs and information seeking behaviour of adult diabetic patients at the Addington Hospital in Durban".

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 research will only 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. Addington Hospital will not provide any resources for this research.
5. Your will be expected to provide feedback on your findings to Addington Hospital.



DR R. MOKOENA
HOSPITAL MANAGER

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