A SOCIO-CULTURAL STUDY OF TYPE II DIABETES MELLITUS AMONG THE INDIAN POPULATION IN RESERVOIR HILLS, DURBAN

by

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DECLARATION

I, Cheron Baboolal, hereby declare that this dissertation and the findings within is the result of my own research. Where not, appropriate reference have been made and acknowledged. This dissertation has not been submitted for any degree or examination in any other university.

Signature: .....

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ABSTRACT

TOPIC: A SOCIO-CULTURAL STUDY OF TYPE II DIABETES MELLITUS AMONG THE INDIAN POPULATION IN RESERVOIR HILLS, DURBAN

Whereas there has been much interest amongst anthropologists in the West in studying diseases such as Type II Diabetes Mellitus, there appears to be a paucity of local anthropological studies that analyse the social and cultural dimensions of this disease. In this country, according to the South African Diabetes Association, this disease is most prevalent in the South African Indian population. This study focuses on the South African Indian community in the suburb of Reservoir Hills, Durban, and examines socio-cultural issues around diabetes.

Previous research conducted overseas has demonstrated a strong link between rapid socio-economic changes that affect diet and lifestyle, and increases in the incidence of this disease among particular communities. This dissertation represents an attempt to:

1. Document salient features of the lifestyle, food beliefs and habits of the Indian population.
2. Discuss significant changes in lifestyle and diet that may have contributed to the rise of this disease among the Indian population.
3. Through an analysis of common discourse, analyse and record the thoughts and feelings of research participants regarding the disease and the manner in which they cope with diabetes.

Case studies are used to support the author's arguments and an attempt is made to use the research findings to identify ways for community members to better cope with the disease. A number of suggestions and recommendations from medical experts with an interest in diet and lifestyle on prevention and management of diabetes are included in the study. The author argues that a few relatively simple lifestyle/diet changes may have the effect of lowering the high incidence of diabetes in the South African Indian population.

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CHAPTER ONE

Introduction

1.1.Overview

Diabetes is a pandemic disease. It appears to have reached epidemic proportions among the South African Indian population. In an attempt to elucidate this alarming rise of this disease within the Indian population, the two principal paradigms that will be drawn upon will be the lifestyle and food habits and food beliefs of the Indian population. In this dissertation an endeavour will be made to discern and analyze some of the major factors in lifestyle and diet that may aid in explaining this situation.

Throughout the text, literature related to this disease is used to demonstrate the impact that one's lifestyle and diet have on Type II Diabetes. In addition, an attempt will be made to show how a change in the lifestyle and diet of a person or group of people induces this disease. Compounding factors such as health and exercise are also brought to the fore in an attempt to indicate their importance in this disease. The reason for making continuous reference to literature that relates to Type II Diabetes is that it will assist in supporting the premise of this dissertation: that the lifestyle and diet, including the altered lifestyle and diet of a person or group of people, have severe consequences for one with the disease.

Case studies that were carried out by anthropologists, and which are referred to within this dissertation, attest to the outcome of a drastic change in lifestyle and diet. A number of medical health specialists, expert dieticians and nutritionists whose recommendations are also noted in this dissertation, further affirm the importance of maintaining a healthy lifestyle and diet. In light of this, it is vital that the following point be made - Diabetes has been labelled as a disease of modernization. With regard to such a statement, an attempt will made at the culmination of this dissertation to offer an alternative in the way we allow our lives to be influenced.

Diabetes is one of the most common medical conditions in Westernized countries. Some of the world's most eminent figures have been diabetic. Among them are writer/ historian H. G. Wells, novelist Hugh Walpole, statesman Georges Clemenceau, artist Paul Cezanne, composer Giacomo Puccini, and political leader Fiorello H. LaGuardia. There are two main types of diabetes. Insulin dependent diabetes mellitus (IDDM), also called juvenile-onset diabetes, is a less common condition. As the name suggests, this condition occurs almost entirely in young people. The commonest is referred to as maturity-onset diabetes, because it generally regularly begins in middle age. It is also named non-insulin dependent diabetes mellitus (NIDDM) or Type II Diabetes Mellitus, which is the focus of this research study.

Extensive literature indicates that there is much debate over whether or not diabetes mellitus is a new disease. It is further argued that it may be as old as humanity. Around three thousand five hundred years ago, a medical scribe of ancient Egypt described the disease in a manuscript known as the Ebers Papyrus, which is said to be one of the oldest of all medical documents (Dolger & Seeman, 1967). However, it is only since 1921 that this disease has been treated with some effectiveness and in the last six decades, diabetes has changed from being a life-threatening condition to one that calls for a change in diet, food beliefs, lifestyle and in certain instances, a variation in medication (Dolger & Seeman, 1967).

Dolger & Seeman state that the physicians of ancient Greece also knew about this disease and it was they who called it *diabetes*. 'Diabetes' comes from the ancient Greek word for 'siphon', which refers to the large amounts of sugar-containing urine passed by people with uncontrolled diabetes. It was only in the seventeenth century that the adjective *mellitus* was attached to diabetes. This was to distinguish it from another disease called *diabetes insipidus*. *Mellitus*, comes from the Latin word for honey, and is characteristic of the sweet taste of the urine. Diabetes mellitus, in the most understandable definition, is therefore **too much sugar in the blood**. This sugar is in the form of glucose. Diabetes arises when there is a dysfunction in the system that controls the level of glucose in the blood. This glucose is obtained from the foods that we eat.

When we eat carbohydrate (sugars and starches), the body converts this carbohydrate into glucose. Foods that are rich in carbohydrate include:

* "Breads, cereals and biscuits.
* Pulses (such as dried peas, beans and lentils).
* Starchy vegetables (such as potatoes).
* Rice and pasta.
* Fruit.
* Sugar.
* Foods with sugar added, such as cakes, sweet biscuits, confectionery, sweetened soft drinks and canned fruit."

(Roberts *et al*, 1994 : 9)

1.2. The History of Diabetes

It was in 1783, that an English physician, Thomas Cawley, became the first to record a diagnosis of diabetes mellitus. This he did by revealing the actual presence of sugar in the urine. Cawley discovered five years later a significant clue to the possible cause of diabetes whilst carrying out an autopsy. He observed that the pancreas, which is a gland just below and behind the stomach, appeared to be different between a diabetic and a healthy person. Around 1860, a Paris physician, Etienne Lancereaux, who had done substantial work with extremely emaciated diabetics, also confirmed his belief that diabetes was a result of a disordered pancreas (Dolger & Seeman, 1967).

Almost a century after Thomas Cawley had made his observation concerning the pancreatic change that occurred in a diabetic, two doctors, namely J. von Mering and O. Minkowski, carried out in 1889 an epoch-making experiment. They removed the pancreas of a dog. The fact that the dog survived was regarded as a remarkable feat. However, an incident occurred that was not anticipated. The dog began urinating repeatedly and this frequency was considered unnatural. In addition, wherever the dog had urinated, crowds of flies converged on that spot. Upon analyzing the urine of the dog, von Mering and Minkowski discovered that it contained sugar (Dolger & Seeman, 1967).

The two doctors discovered that by removing the pancreas of the dog, they had in fact created a condition that duplicated diabetes in man. Diabetes symptoms developed step by step in the dog until the animal eventually passed into a diabetic coma, and died. However, the realisation that the removal of the pancreas resulted in diabetes did not yield a cure, and the search for a cure continued.

An outstanding German medical student by the name of Paul Langerhans had in the meantime made an important advance. He discovered in the pancreas clusters of cells that were totally different from the ordinary tissue of the gland. The purpose of these cells, though, was yet to be revealed. They were given a rather romantic name, the islets of Langerhans. Medical researchers were resolute to uncover which part of the pancreas might be involved in diabetes. They conducted experiments involving binding the chief duct of the pancreas so that the gland shrivelled. This left only the islets of Langerhans intact. But, when the shrivelled gland was removed together with the islets of Langerhans, diabetes was produced.

The question that was therefore raised was: "Was there something in the islets of Langerhans which made sugar metabolism possible-without which diabetes resulted?" (Dolger & Seeman, 1967 : 16). In attempting to find an answer to this question, F. G. Banting and C. H. Best of Canada in 1921, made their grand discovery. This find earned Banting a Nobel Prize as well as a knighthood and gave the world the foremost effective means of treating diabetes. The breakthrough was the identification of insulin, a hormone usually produced in the islets of Langerhans and which allows the body to metabolize sugars and starches and convert them into heat and energy.

The first human patient treated with insulin was a Toronto physician, Joe Gilchrist, who had severe diabetes. The results were described as 'excellent'. However, although the isolation of insulin served as a treatment for diabetes, it did not resolve the problem of the underlying cause. Certain people become diabetic even though their production of insulin can be considered normal. Diabetics that were killed in automobile accidents were shown upon examination to have sufficient concentrations of insulin in the pancreas (Dolger & Seeman, 1967).

Literature indicates that in every case of diabetes, there does appear to be some impairment of the insulin mechanism, both in its production and in the manner in which it works in the body. As a result of this, scientists posit that what is diagnosed as diabetes mellitus, may in fact be a number of different diseases, each producing an inability to utilize carbohydrate owing to an insulin malfunction. Dolger and Seeman state that there are at least four factors that might interfere with normal insulin activity, which in turn produces diabetes:

1. "There may be an inability to produce enough insulin because the pancreas is diseased or absent. Should the pancreas be damaged or destroyed by a tumour, or removed by surgery, diabetes invariably results.
2. There may be an increase in the rate at which the body uses up insulin. This may be caused by overeating or by overactivity of the thyroid gland. Where this creates an insulin shortage, diabetes results.
3. There may be an increase in the rate at which insulin is destroyed in the body. There may be a drop in insulin production, or its effects might be inhibited by the action of certain body chemicals. These chemicals include such enzymes as *insulinase* as well as insulin antibodies and certain proteins which attach themselves to insulin and inactivate it. In addition, the body may even produce abnormal insulin which is unable to fulfill its role in carbohydrate metabolism.
4. There may be a drop in the efficiency of insulin due to liver disease or the introduction into the system of certain chemicals which impede insulin activity. These chemicals include cortisone, ACTH, purified growth hormone as well as crude extracts of the pituitary gland. These might make the liver - the body's sugar storehouse-release more sugar into the blood than a normal insulin supply can handle.
5. In the alpha cells of the pancreas, the body produces a hormone which has an effect opposite to that of insulin. This substance is called *glucagon*, and it acts to release glucose from the liver into the blood. Normally, glucagon might thus help the individual survive during periods of starvation."

(Dolger & Seeman, 1967 : 16 - 18)

Any or all of these factors, as well as others not yet discovered, may bring about the set of symptoms we call diabetes mellitus. But the underlying cause or causes are still unknown. There are a number of theories, but no conclusive proof.

According to most accounts, the development of Type II Diabetes Mellitus or adult/maturity-onset diabetes is generally less severe and less sudden than juvenile diabetes. It is also generally more difficult to detect. Type II Diabetes Mellitus is often so mild at the beginning, that the patient may only through a routine examination discover that they have the disease. Statistics indicate that over thirty percent of Type II Diabetes Mellitus is detected in this casual manner (Dolger & Seeman, 1967).

An example of this is that "during World War II, a young American lieutenant advancing through Germany attributed his thirst to the summer heat, and his frequent urination to the enormous quantities of beer he quaffed. But one day he became aware that his sexual urges were almost gone. This promptly brought him to the doctor and it was there that the diabetes was discovered" (Dolger & Seeman, 1967 : 35 - 36). In the case of women, they usually become aware of diabetes during a pregnancy or after a stillbirth. Also, circulatory, kidney, skin, and other ailments may force an adult to seek medical help, and it is through such visits that diabetes is detected.

Several factors according to Roberts *et al*, can influence the development of Type II Diabetes Mellitus, but the most consequential include the following:

* "Family history
* Age
* Overweight
* Stress
* Alcohol abuse, and
* Inactivity."

(Roberts *et.al*, 1994 : 12).

Of particular interest was the book written by Deb Butterfield, who is a diabetic herself. This book provides an unusual but open account of the life of a diabetic whereby it goes beyond the day-to-day physical management of the disease. In this way, it demonstrates how diabetes can shape the personality of a person which in effect has significant influence on the life of the diabetic. Butterfield is also the founder of the Insulin-Free World Foundation and all proceeds from this book, are utilized to maintain the Insulin-Free World Foundation's work to free people from diabetes.

An interesting point made by Butterfield relates to the American Diabetes Association which is, "articulating a widespread philosophy in reporting that individuals affected by diabetes must learn self-management skills and make lifestyle changes to effectively manage diabetes and avoid or delay the complications associated with this disorder. For these reasons, self-management education is the cornerstone of treatment for all people with diabetes." (Butterfield, 2000 : 170 - 171)

In her book, Butterfield imparts the following alarming statistics: "Every twenty hours in the United States alone, diabetes causes seventy five people to go blind, eighty to suffer kidney failure, and one hundred and fifty to need amputations. Diabetes kills one American every three minutes; every year two point eight million of the world's citizens die from diabetic complications. Today, one hundred and thirty-five million people worldwide have diabetes. The majority, eighty-five percent of those who are diagnosed with diabetes, have no prior family history of the disease. In the last forty years the incidence of diabetes has tripled, and in the next twenty years it is expected to double again. Diabetes is truly a global epidemic."
(Butterfield, 2000 : XIV)

Elaine Stritch, an American actress and a diabetic, has written a book called How to Live with Diabetes, which essentially outlines firstly how she discovered she had the disease, together with the initial symptoms. Stritch also provides amongst others, useful hints for coping with the disease, as well as self-empowerment in relation to its treatment. She considers diabetes to be 'excess baggage', which has in her words, "forced me to take stock of people, situations and events that are likely to trigger off emotional stress, because the more stressed I am the worse I feel and, more important, the less able I am to cope." (Stritch, 1983 : 98)

A meaningful aspect of this book was Stritch's description of how she discovered she had diabetes. She was offered a part in a play and really worked herself into her role. She began to lose weight. On opening night, she 'blew her lines'. Four weeks later, the play closed and Stritch continued to lose weight. She also found that although she used to get to work on foot since she lived within walking distance, she now began hailing cabs. An incident that saw Stritch drink six Coca-Colas before the

eleven-thirty tea break, was what got her to seek medical help. It was confirmed that her blood sugar was high. Interestingly, neither of Stritch's parents were diabetic.

Stritch declares that there are essentially really two lessons to be learned from the research that she conducted in writing up her book. "The first is as everyone connected with diabetes knows, too much fat is dangerous. It raises blood sugar levels, and generally puts a strain on the bodily systems. Secondly, it is no use simply thinking: 'I'll eat less to keep slim'. The problem is: how much less. If you're one of the energy wasters you can be fairly self-indulgent before you begin to see the fat beginning to accumulate. If, on the other hand, you are an ill-fated 'conserver', you may have to be really ruthless with your diet to keep your weight down, and this may mean switching to a high fibre diet with lots of brown bread, brown rice and pulses, legumes, cereals and beans or simply training your digestive system (and your appetite) to accept less of what you are already eating." (Stritch, 1983 : 74)

Dieticians, nutritionists and general practitioners all echo the importance of maintaining a healthy diet irrespective of whether one has diabetes or not. However, a diabetic can gain considerably from a nutritionally sound diet. The following are three of the most significant benefits:

1. "Firstly, it helps you to achieve and maintain good control of your blood glucose level.
2. Secondly, it helps you to regulate your body weight.
3. Thirdly, it helps to prevent or delay onset of any long-term problems linked with diabetes."

(Roberts *et al*, 1994 : 13)

Roberts *et al*, suggest that there are four golden rules for diabetics, which would ensure that they stay healthy now and in the future:

* "**Understand your diabetes and how to manage it**. Ask questions. Don't be shy or worry that you seem 'stupid' or being a nuisance. No matter how 'silly' your question, ask it. And keep on asking until you are entirely satisfied that you understand your diabetes and you know what to do to manage it.

* **Keep your blood glucose level under control**. The best way of doing this is to eat sensibly, exercise regularly and take your medication correctly.
* **If you are overweight, make losing weight a goal**. If you are slim, stay slim. Basically, you need to make sure that you eat fewer kilo joules (calories) than your body burns up.
* **Be as physically active as possible**, keeping in mind your age, general health and your ability to exercise."

(Roberts *et al*, 1994 : 13 - 14)

Literature and statistics indicate that the: "Chinese in mainland China and the Japanese have some of the lowest diabetic prevalent rates in the world, with 0.67% and 1% respectively. But Chinese who have settled outside the mainland have dramatically higher rates of 4.7% in Singapore and Malaysia, 4.9% in Indonesia, and 5.78% in Taiwan. Similarly, Japanese emigrants and their offspring in the United States also experienced comparable sharp increases, so much so that the Japanese in Hawaii showed a 12.3%, and Los Angeles 15.9% incidence. Based on a study by the Indian Council of Medical Research, the occurrence rate in India is 1.73%, but Indians who migrated to other parts of Asia have reported considerable jumps in prevalence to 4.2% in Malaysia and 6.1% in Singapore." (Rasmussen, 1995 : 12)

Literature also records that: "For some reasons, there seems to be more Asians becoming diabetics when they migrate from their motherland. Apparently, as results of studies unfolded, the change from their traditional diet, rich in starch and vegetables, to a more 'Western' diet, containing more animal protein, fat and sugar, is to blame. Although a Westernized Asian diet may not be the cause of diabetes *per se*, it may expose diabetes in genetically predisposed individuals."

(Rasmussen, 1995 : 12)

According to the Diabetes Association of South Africa, South African Indians, have the highest incidence of diabetes of all groups nation wide. Statistics indicate that one in every three Indians in South Africa suffers from diabetes. This was also noted in a book How to Live with Diabetes that was published in the middle sixties. "The Indians living and working in Natal, South Africa, have the highest diabetes rate in the world - Forty-two percent of all adults." (Dolger & Seeman, 1967 : 25)

Professor Ramachandiran Cooppan (a former local doctor) who is now based at the Joslin Diabetes Centre in Boston and at the Harvard Medical School in the United States, spends much of his time travelling the world as part of a 'global war' against the disease (Daily News, December 22). Cooppan believes the high levels of diabetes among Indians can be attributed to genetic flaws and a bad lifestyle.

Cooppan states: "At one time diabetes affected people in their fifties; now we find it in children. Most of the people affected are now in their thirties and this is cause for grave concern. The type of diabetes affecting local people is known as 'Type II', and it was also the type that affected most suffers around the world. Regarding lifestyle, Indians had fat 'in the wrong places'. Most sufferers had fat around the stomach." (Daily News, December 22)

1.3. Research Participants

The research participants identified for participation in this study were South African Indians who reside in the suburb of Reservoir Hills, Durban. There appears to be little social anthropological research (in particular a medical anthropological research study of any kind) that has been conducted in the Reservoir Hills area. Reservoir Hills was entrenched as an Indian Group Area on June 6, 1958.

Schlemmer, who carried out a study on the resettlement of Indian communities states: "at the time of the promulgation of the Group Areas Act the ecology of Durban already revealed a pattern of racial separation in housing settlement. The racial composition in ecological zones related closely to altitude, slope direction of slope and land values. Therefore, the position is that roughly one-third of the Indian population in 1951 was settled on the alluvial flats stretching from the Umlaas to the Umgeni Rivers" (Schlemmer, 1967 : 13).

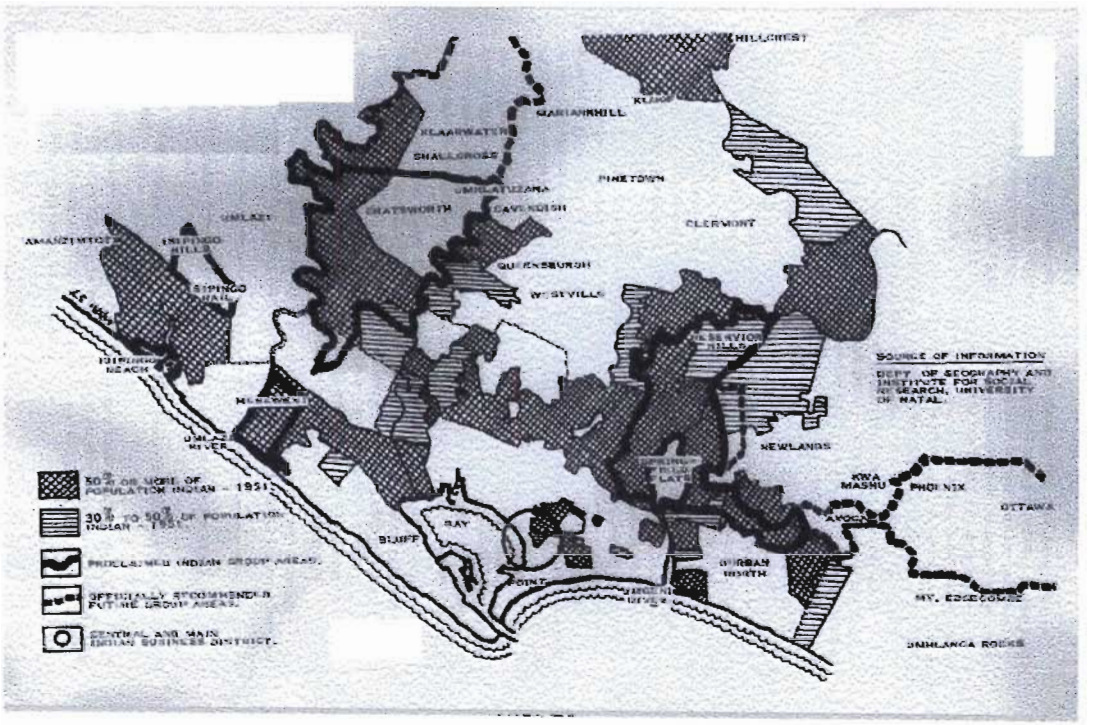
Reservoir Hills lies approximately sixteen kilometres north-west of the city of Durban. The residential area is laid out on a slope toward the Umgeni River. An outstanding landmark of Reservoir hills is the large purification and filtration works. This is where Durban's principal water-supply from the Nagle Dam on the Umgeni is treated. Research by Schlemmer (1967) indicates that the works are built on land which the owners donated to the city council (hence the name Reservoir Hills) and which was incorporated in the city in 1945.

According to Michael Smout, a professor of geography who carried out a study in Reservoir Hills: "At the time of its proclamation the population potential of Reservoir Hills was envisaged at twenty five thousand" (Smout, 1984 : 4). The suburb consists of predominantly middle and upper income households. Statistics obtained from the Durban metro indicate according to a 1996 poll, the population in Reservoir Hills stands at around twenty two thousand.

The following figure is a sketch map of greater Durban showing Indians as a proportion of the total population in zones in 1951, with the official group areas for Indians superimposed. The reason for choosing this particular map is that it clearly delineates those residential areas that were earmarked for Indian occupation. To my knowledge, no better recent map exists.

Figure 1: A sketch map of greater Durban, that shows Indians as a proportion of the total population in zones in 1951, with the official group areas for Indians superimposed.

Figure 1



(Schlemmer, 1967 : 14)

CHAPTER TWO

RESEARCH METHODOLOGY

2.1. Overview

According to the anthropologist Bernard, whose particular study focus is the fundamental concepts of research, "one of the very first things to do in any research project is to decide on the *unit of analysis*. In an ethnographic case study, there is exactly one unit of analysis - The community or village or tribe" (Bernard, 1994 : 35 - 36). For this study the community of Reservoir Hills was selected as the research site.

A sample of twenty-five residents from Reservoir Hills was selected for interviewing; twenty women and five men. Research of Type II Diabetes Mellitus indicates that women appear to be more susceptible to this disease. For example, Omar *et. al* (1996), carried out an epidemiological study at a primary health care centre where one thousand and ninety eight consecutive Indian Type II diabetes mellitus patients (two hundred and forty-two males, eight hundred and fifty-eight females) were interviewed. This study records that when male and female probands were analysed separately, a controlling maternal history was evident in both sexes. These physicians further found upon analysis of diabetic offspring of the probands, that the disease was far more common in their mothers (eighty-seven percent) than in their fathers (thirteen percent). Based on research that points to women's higher susceptibility to the disease, I decided to interview only five men for this research study.

There is a twofold reason for selecting Reservoir Hills as the research site. Firstly, I am a resident of this community. Secondly, since this is a qualitative study, my being an inhabitant would allow for convenient and more favourable participant observation. The objective in selecting a qualitative research approach was that it would allow for the study of the social world of the respondents, seeking to describe and analyse their culture and behaviour from their world view.

Electing to utilize a dictaphone for the research study proved to be particularly beneficial and had a positive impact on the interviews. Firstly, it was a means by which reliable and valid data was obtained. Secondly, the research participants had my constant attention and this strengthened the rapport between us. The third and a very important point was that this type of focused attention on the research participants conferred respect and helped to make them feel important. This resulted in valuable information being drawn from them.

To ensure exacting information of the research participants, all interviews were later transcribed onto the computer. This proved to be a lengthy and time-consuming process. Of significance, was the manner in which the research participants responded to the interview being recorded. The majority of the research participants if not all, appeared to be eager to have the interview recorded. An attempt on my part was made to appear as professional as possible. I would at each interview introduce myself as a post graduate student and explain the nature of my study. This required a high degree of caution and sensitivity. Due to high levels of crime that prevail in Reservoir Hills, the women were particularly wary of allowing a stranger to come into their homes. The interviews were either conducted in the living-room or the dinning room of the research participants.

Considered to be a significant theorist in the field of anthropology, Jerry D. Moore states: "Two distinct ways of analysing socio-cultural phenomena are the etic and emic approaches. Etic perspectives are from an observer's point of view whilst emic perspectives convey a participant's point of view. The test of the adequacy of etic accounts is simply their ability to generate scientifically productive theories about the causes of socio - cultural differences and similarities. The test of the adequacy of emic analyses is their ability to generate statements the native accepts as real, meaningful, or appropriate. These distinctions lead to specific categories of human actions and thoughts." (Moore, 1997 : 17 - 18)

My aim was to take an emic approach in doing this research. I decided to adopt a semi-structured interviewing style and attempted to comprehend how individuals experience their lives and how they make sense of what is happening to them. An endeavour was therefore made to direct the questions at the participant's experiences, feelings, beliefs and convictions about the research in question.

An interview guide was used where all research participants were asked the same set of questions. However the formulation, which included the terminology, was adjusted according to the background and educational level of the research participants. Opting to use a semi-structured interviewing style proved to be a versatile way of gathering data. The use of the interview guide assisted my research greatly.

Another key consideration was managing the volume of relevant information that was obtained when adopting a semi-structured interviewing style. While the concept behind a semi-structured interview is not to exert extreme control over the informant, there is nevertheless the tendency by respondents to discuss matters that are completely irrelevant to the research study. This proved to be my experience as well. Hence there exists a need for the interviewer to be proficient and apt in order to remain in control of the interview, and I tried my best to do so.

Yet, it soon became apparent that the open-ended quality of my semi-structured interviews generated in much valuable related information. For instance, in an interview with research participant M, the participant revealed that at one stage in her life she was a chef at a government hospital preparing the meals for diabetic patients. In addition, her daughter was a qualified nurse and was constantly warning her against her unhealthy eating habits and lack of exercise. Despite her experiences, research participant M does not take her medication regularly, does not adhere to the foods that she should be eating, nor does she pay any attention to the manner in which the foods should be prepared. The following statement by participant M indicates the seriousness of her condition: "These headaches in the night, the way my head pains, I think I'm getting a haemorrhage". However, research participant M still does not find cause to comply with the health advice given to her.

My first task was to identify potential research participants. For this, I contacted the Diabetes Association situated in central Durban. Here I managed to obtain the names of several physicians and an endocrinologist. Although it was not easy to make contact with them via the telephone, I did manage to speak to one of the specialists who in turn suggested that I make contact with a professor working specifically with diabetes at the Nelson Mandela Medical School. This step was taken and further recommendations and new directions were subsequently given. It was suggested that I ask my project promoter to write a letter to the superintendent of King Edward VIII Hospital in order that they may assist in identifying a cluster of people who are presently afflicted with diabetes. This letter was faxed to the superintendent and to date I have not as yet received any word from that quarter.

I realised that a greater initiative would have to come from me. Therefore I decided to approach the local general practitioners in Reservoir Hills. The first doctor that I sought out refused point blank to assist me with identifying diabetic patients, citing the breach of doctor/patient confidentiality as the reason. While I fully understood and respected the explanation, I was nevertheless somewhat perturbed since I did assure the doctor in question that the names of the patients would not be disclosed[1]. This was in vain.

Unfortunately I had a similar response with the second doctor that I approached in Reservoir Hills. This practitioner was a little more helpful in suggesting that I go to a Diabetic Clinic in Overport,[2] a suggestion that I rejected. The third general practitioner that I went to kindly agreed to assist me and said that the diabetic patients would firstly have to be consulted on whether they were agreeable to such a request. I gave my contact details and was told that I would be informed in due course.

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[1] It must be noted that in all my approaches to the various general practitioners, I assured them of absolute confidentiality both for themselves and the patients.

[2] A notoriously dangerous residential area that lies approximately 10km to the east of Reservoir Hills.

In the meantime I decided to approach yet another general practitioner in Reservoir Hills, realising that I could not simply rely on one doctor, because at this initial stage trying to secure twenty five research participants did appear to be a somewhat daunting task. We agreed that I would contact the practitioner after a period of time. This I did, only to be told by the doctor that during that time the practitioner had forgotten all about my request for assistance in identifying diabetic research participants. I then telephoned the doctor[3] who had earlier agreed to help. After a little persuasion, emphasizing that time was of the essence, the doctor asked me to contact the receptionist later in the afternoon. This I did and I got the contact details of my first four research participants.

I made initial contact with all the research participants by telephone. The telephone cost factor was a substantial one. In the case of one research participant that I tried to procure for an interview, I must have made a dozen or more telephone calls to her and at the end of my ethnographic research I had never secured an interview. Furthermore, there were numerous other refusals by diabetic patients to be interviewed.

The first potential research participant[4] readily agreed to speak to me after I explained the reason for my call and the nature of my study. It was a positive beginning both in terms of the way the interview progressed and the fact that I was not rejected by the research participant when I first called. There were, however, a number of amusing and not so amusing incidents that transpired as the research progressed. For instance, when I contacted research participant B, she asked me if she was going to be on video. Then research participant C thought that she needed to go away with me for a while.

[3] This doctor will be referred to as Doctor A.

[4] I must stress that all potential research participants that were contacted were guaranteed complete confidentiality.

There is also a need to mention that not many research participants were familiar with the discipline of Anthropology. When I mentioned that my interest lay in the sub-discipline of Medical Anthropology and the social constructions of health and illness, they naturally assumed that I was in the medical field. There was a continuous need to explain my research interest and the link to the sub-field of Diabetes. Of the first four names that I was given, I managed to secure three successful interviews.

Before proceeding it should be established how I secured access to the other twenty-two research participants. For this I utilised the method of networking in my research study. Therefore when I concluded an interview I always asked the research participants if they knew of anyone that was diabetic. Research participant C suggested research participant D. Research participants E, H, P and R, I gained through a helpful friend with whom I also made contact via networking. This friendship proved to be invaluable to this research study.

Research participant F was the final diabetic patient that I acquired from the general practitioner who helped procure my first three research participants. My next move was to approach the other doctor[5] who had agreed to help me. This he did and I subsequently procured fourteen research participants through this doctor: participants G, I, J, K, L, M, Q, S, T, U, V, W, X and Y. Research participants N and O were introduced to me by research participant M.

The base line information that was obtained from research participants served as an important indicator in the sense that it assisted in the approach of the interview. For instance, research participant S married rather late in life and had no children of her own. This kind of base line information that was received at the outset of the interview aided greatly in that I was sensitive to such issues concerning the research participant during the course of the interview.

[5] This doctor would be referred to as Doctor B.

Another example is that of research participant C. Two of her children had died under extremely tragic circumstances. Her son was only nineteen when he unfortunately lost his life as a result of falling into the deep end of a swimming pool at a pool party that he was attending. Research participant C's daughter died at the age of twenty one. For a week she suffered from loss of breath and sadly died suddenly. The post-mortem revealed that she in fact had pneumonia.

A question that was posed to all research participants concerned the level of consciousness that they created in their children regarding their dietary practices, food beliefs and lifestyle. The manner in which this question was put forward to research participant C, involved extreme caution and care. Taking into consideration, Information such as the above, allows for a smooth and successful completion of an interview. Base line data was acquired from all twenty five research participants. Tables 1 to 5 (20 - 24), is a presentation of basic demographic data of the research participants.

Table 1: Illustrating age, sex, marital status, date of birth, place of birth, nationality, race group, religious group, occupation, number of children and grandchildren and the level of education of research participants A to E.

TABLE 1					
R/P[6]	**A**	**B**	**C**	**D**	**E**
AGE	60	39[7]	56	52	60
SEX	Female	Female	Female	Female	Female
MARITAL STATUS	Married	Married	Married	Married	Married
DATE OF BIRTH	1940: 03:01	1960: 11:21	1944: 07:25	1948: 08:03	1938: 08:01
PLACE OF BIRTH	Tongaat	Reservoir Hills	North-dene	Went-worth	Riverside
NATIONALITY	S.African	S.African	S.African	S.African	S.African
RACE GROUP	Indian	Indian	Indian	Indian	Indian
RELIGIOUS GROUP	Tamil	Tamil	Hindi	Hindi	Tamil
OCCUPATION	H/Wife	H/Wife[8]	H/Wife	H/Wife	H/Wife[9]
NUMBER OF CHILDREN	3 girls 2 boys	1 girl 2 boys	1 girl[10] 2 boys[11]	3 boys	2 girls 2 boys
GRAND-CHILDREN	7 girls 5 boys	.....	1 girl	.....	1 girl 3 boys
LEVEL OF EDUCATION	Grade 6	Grade 12	Grade 5	Grade 8	Grade 8

[6] The R/P is in abbreviated form for research participant.
[7] Research participant B, is the maternal niece of research participant A. This piece of information emerged during the semi-structured interview.
[8] Research participant B, also manages a business in addition to being a housewife.
[9] Research participant E, makes various pickles in order to supplement her income.
[10] Research participant C's daughter is deceased.
[11] One of research participant C's sons is also deceased.

Table 2: Illustrating age, sex, marital status, date of birth, nationality, race group, religious group, occupation, number of children and grandchildren and level of education of research participants F to J.

TABLE 2					
R/P	**F**	**G**	**H**	**I**	**J**
AGE	56	61	68	38	41[12]
SEX	Female	Female	Male	Female	Male
MARITAL STATUS	Married	Married	Married	Married	Married
DATE OF BIRTH	1943: 05:15	1939: 09:08	1932: 10:12	1964: 04:24	1959: 01:12
PLACE OF BIRTH	Clare Estate	Central Durban	Jacobs Clairwood	Jacobs Clairwood	Dundee
NATIONALITY	S.African	S.African	S.African	S.African	S.African
RACE GROUP	Indian	Indian	Indian	Indian	Indian
RELIGIOUS GROUP	Hindi	Gujerati	Tamil	Tamil	Tamil
OCCUPATION	H/Wife	H/Wife	Retired	H/Wife	Boarded[13]
NUMBER OF CHILDREN	2 girls 1 boy	1 girl 2 boys	1 girl 3 boys	1 girl[14] 2 boys	1 girl 2 boys
GRAND-CHILDREN	.....	2 girls 1 boy	5 girls 2 boys	.....	.....
LEVEL OF EDUCATION	Grade 10	Grade 7	Grade 12	Grade 6	Grade 12

[12] Research participant J, and I, are husband and wife.
[13] Research participant J, although boarded is unemployed too.
[14] Research participant I suspects that her daughter might be diabetic as well as she exhibits the symptoms of diabetes.

Table 3: Illustrating age, sex, marital status, date of birth, place of birth, nationality, race group, religious group, occupation, number of children and grandchildren and level of education of research participants K to O.

TABLE 3					
R/P	**K**	**L**	**M**	**N**	**O**
AGE	45	75	50	72	68
SEX	Female	Male	Female	Male	Female
MARITAL STATUS	Married	Married	Married	Married	Married
DATE OF BIRTH	1955: 07:19	1925: 10:26	1950: 09:27	1928: 10:08	1932: 02:10
PLACE OF BIRTH	Cliffdale	Briardene	Cliffdale	Glencoe Junction	Spring-field
NATIONALITY	S.African	S.African	S.African	S.African	S.African
RACE GROUP	Indian	Indian	Indian	Indian	Indian
RELIGIOUS GROUP	Hindi	Tamil	Hindi	Hindi	Hindi
OCCUPATION	Clerk[15]	Retired[16]	H/Wife	Retired[17]	H/Wife
NUMBER OF CHILDREN	1 girl 1 boy	1 girl 2 boys	1 girl[18] 2 boys	1 girl 1 boy	1 girl 1 boy
GRAND-CHILDREN	.....	5 girls 3 boys	1 boy	.....	.....
LEVEL OF EDUCATION	Grade 11	Grade 8	Grade 8	M. A[19]	Grade 10

[15] Research participant K, occupies a position as a credit controller.
[16] Research participant L, is a retired businessman.
[17] Research participant N, is a retired psychologist.
[18] Interestingly, research participant M's, daughter is a qualified nursing sister.
[19] Research participant N has a masters in psychology.

Table 4: Illustrating age, sex, marital status, date of birth, place of birth, nationality, race group, religious group, occupation, number of children and grandchildren and level of education of research participants P to T.

TABLE 4					
R/P	**P**	**Q**	**R**	**S**	**T**
AGE	76	80[20]	62	56	66
SEX	Female	Female	Female	Female	Female
MARITAL STATUS	Widow	Widow	Married	Widow	Married
DATE OF BIRTH	1925: 02:19	1920: 02:05	1939: 06:21	1943: 07:22	1933: 12:29
PLACE OF BIRTH	Malvern	Pieterma-ritzburg	West-ville	Marian-Hill	Durban Central
NATIONALITY	S.African	S.African	S.African	S.African	S.African
RACE GROUP	Indian	Indian	Indian	Indian	Indian
RELIGIOUS GROUP	Hindi	Tamil	Telegu	Tamil	Muslim[21]
OCCUPATION	H/Wife	Retired[22]	H/Wife	H/Wife	H/Wife
NUMBER OF CHILDREN	7 girls 3 boys	1 girl 2 boys	1 girl 2 boys	.....	3 girls 3 boys
GRAND-CHILDREN	8 girls 7 boys	2 girls 2 boys	2 girls 1 boy	.....[23]	8 girls 6 boys
LEVEL OF EDUCATION	Grade 5	Grade 10	Grade 8	Grade 8	Grade 7

[20] Research participant Q, was due to leave shortly on her own to Toronto Canada. This would be the fourth such trip that she would be embarking upon.
[21] Research participant T was the only Muslim that I interviewed.
[22] Research participant Q is a retired schoolteacher.
[23] Research participant S got married when she was forty eight. She does however have stepchildren as her late husband was previously married.

Table 5: Illustrating age, sex, marital status, date of birth, place of birth, nationality, race group, religious group, occupation, number of children and grandchildren and level of education of research participants U to Y.

TABLE 5					
R/P	**U**	**V**	**W**	**X**	**Y**
AGE	53	53	49	39	73
SEX	Female	Female	Female	Female	Male
MARITAL STATUS	Widow	Married	Married	Married	Widower[24]
DATE OF BIRTH	1947: 01:28	1946: 12:21	1951: 03:17	1961: 06:30	1927: 08:27
PLACE OF BIRTH	Durban Central	Clare Estate	May-Ville	Ken-Ville	Shall-Cross
NATIONALITY	S.African	S.African	S.African	S.African	S.African
RACE GROUP	Indian	Indian	Indian	Indian	Indian
RELIGIOUS GROUP	Gujarati	Hindi	Hindi	Christian[25]	Tamil
OCCUPATION	H/Wife[26]	H/Wife[27]	H/Wife[28]	H/Wife	Owner[29]
NUMBER OF CHILDREN	1 girl 2 boys[30]	2 girls 1 boy	5 girls 2 boys[31]	2 girls 1 boy	3 girls 2 boys
GRAND-CHILDREN	.....	2 girls	1 boy	.....	9 girls
LEVEL OF EDUCATION	Grade 6	Grade 8	Grade 8	Grade 12	Grade 12

[24] Research participant Y remarried after he lost his first wife. His second wife also died.
[25] Research participant X was the only Christian that I interviewed.
[26] Research participant U makes savouries in order to supplement the family income.
[27] Research participant V also works part time in a Tattersalls.
[28] Research participant W also makes various savouries to support herself because she is separated from her husband.
[29] Research participant Y together with his younger son, owns a nursery.
[30] Research participant U had rubella when she was pregnant with her second son. The child was born deaf and he is blind in the one eye
[31] Both of research participant W's sons are deceased. The one was stillborn and the other son died three weeks before his fifth birthday.

It is important to specify that the only criteria for the selection of the research participants was that they had to be diabetic and Type II. All twenty-five respondents were interviewed as I obtained their contact details and permission. The decision to interview twenty women and only five men was intentional and the reason for this is, as explained earlier, that women in effect appear to be more susceptible to the disease. The question therefore is: Who gets diabetes? Literature suggests that anyone can get diabetes. However an adult, particularly an adult female is more inclined to get it than a child.

2.2. Understanding the Social Epidemiology of Diabetes

According to Dolger (M. D. Chief, Diabetes Clinic, Mt. Sinai Hospital, New York) and Seeman who wrote a book for diabetics and for the relatives and friends of diabetics, the most likely candidates for diabetes are:

* "A person of a diabetic family is more likely to get it than a person of a non-diabetic family.
* An overweight person is more likely to get it than a person of normal weight.
* A person between the ages of 45 and 70 is more likely to get it than a person in any other age group.
* An unmarried man is more likely to get it than a married man.
* A woman is more likely to get it than a man.
* A married woman is more likely to get it than an unmarried woman.
* A mother is more likely to get it than a non-mother.
* A mother of more children is more likely to get it than a mother of fewer children.
* A mother of larger infants is more likely to get it than a mother of smaller infants.

On the basis of all this, the most likely candidates for diabetes are women between the ages of 45 and 70, who come from diabetic families and are overweight."
(Dolger & Seeman, 1967 : 27 - 28)

Dolger and Seeman go further to state that although diabetes spares neither of the sexes, it does hold specific problems for the female. "For one thing, diabetes seems to have a particular affinity for women. The precise reasons for this are not fully known, although it seems virtually certain that metabolic and endocrine factors

relating to childbearing and menopause are involved. The fact that diabetes prefers women is not the only characteristic making it a special problem for the wife and mother. Women must take greater care in managing the disease than men. This is true for physiological reasons as well as for reasons arising from the everyday demands imposed upon the woman, who must make a home and raise a family"
(Dolger & Seeman, 1967 : 160). It was in light of such research findings that I chose to focus this research more especially on women.

If we examine Dolger and Seeman's rationale for persons that are most susceptible to diabetes against the information acquired from the twenty five research participants, the following emerges:
Is it true that: *A person of a diabetic family is more likely to get it than a person of a non - diabetic family*. This research study appears to confirm this finding.

Research Participant A: Mother and elder sister have diabetes.
Research Participant B: Mother is diabetic
Research Participant C: Mother was diabetic
Research Participant F: Mother, three sisters and a brother died as a result of diabetes
Research Participant I: Mother is diabetic.
Research Participant J: Both parents were diabetic and his sisters also have the disease.
Research Participant K: Both a brother and sister are diabetic.
Research Participant M: Father was diabetic.
Research Participant O: Father was diabetic as is a brother and most of her six sisters.
Research Participant R: Mother was diabetic.
Research Participant S: A brother was diabetic and a sister is too.
Research Participant T: Mother and brother were diabetic.
Research Participant U: Father was diabetic and mother also has the disease.
Research Participant V: Mother was diabetic and a couple of her brothers also have diabetes.

Research Participant W: Mother was diabetic and so is a brother.

Research Participant X: Both parents were diabetic and several sisters also have the disease.

Based on the information attained from the research participants, a positive response rate of 64% would support Dolger and Seeman's above claim. 36% of the research participants stated that neither their parents nor their siblings were diabetic.

Is it true that: *An overweight person is more likely to get it than a person of normal weight*. This research study would also tend to confirm this.

Research Participant A: Considers herself as being overweight.

Research Participant B: Blames her extra weight on the diabetic tablets which she says, "makes her eat more".

Research Participant D: Also says, "as diabetics we do feel hungry most of the time" and in addition attributes the extra weight to a liver problem.

Research Participant E: States "happiness too makes you fat and some sicknesses too blow you up".

Research Participant I: Has increased her dress size by twelve sizes.

Research Participant J: Also considers himself to be greatly overweight.

Research Participant M: Confesses that having a hysterectomy is the reason for her extra weight.

Research Participant R: Blames her excess weight on lack of exercise and states the following: "Today nobody walks, they want a car even to go to the corner café so where the exercise? No exercise!".

Research Participant S: States that since she got married she gained her weight.

Research Participant T: Declares that she was "rounded from the time I got married I wasn't slim, I wasn't very slim".

Research Participant U: Asserts that her mass increased after her cancer treatment.

Research Participant V: Contends that it is obvious that she would like to lose more weight.

Research Participant W: Blames the weight on the birth of her third child.

Research Participant X: Associates the extra weight with wealth.

On the basis of this information a proportionate positive response rate of 56% can be noted. 44% of the research participants did not have a problem with obesity. Also amongst the latter percentage of the research participants, many had experienced personal problems and losses which resulted in a loss in weight.

In light of the fact that obese persons are more likely to be diabetic, the following question was posed to the research participants: Did they believe that obesity can be associated with being wealthy? This is how they responded:

Research Participant A:

A: My sister is not so fat like me, she was weak all the time!

Research Participant B:

A: Most women as soon as they marry and have children, they let themselves 'go'. I did! I neglected myself after I had my kids.

Research Participant C:

A: Could be, can't say.

Research Participant D:

A: You know putting on weight can be two different things. It's either you eat rich food and diabetics you know feel hungry most of the time. Now it depends on what you eat too, you can blow up and maybe if you got a certain sickness, you can blow up too. Like I had a kidney problem, it was a kidney infection, I used to blow up. But now I'm trying as far as possible to keep healthy because you don't know in which way you going with this 'thing'. Maybe you'll be a bedridden person. I don't want to be like that. I want to be a healthy person!

Research Participant E:

A: Some sicknesses too blow you up!

Research Participant F:

A: No! I think it's eating all types of food. That's what I feel.

Research Participant G:

A: I'm thin because we can't eat all those oily things and fatty foods.

Research Participant H:

A: But I tell you, under the food line, although they tell you, I can't live with eating those things what they ask me to eat. That's my honest opinion! Even my wife sometimes forces me, don't have this here, but I want it!

Research Participant I:

A: I haven't got a full time maid or something, I do my own work. I do my own washing, ironing, everything!

Research Participant J:

A: Because of several complications hit me, I was medically boarded. But we have about 5kg of sugar for the month!

Research Participant K:

A: No! When I put on weight I'm very uncomfortable, very uncomfortable.

Research Participant L:

A: No!

Research Participant M:

A: Before we used to burn the sugar out because we used to work. We had a hard life! Now I must get this will power to go on a diet.

Research Participant N:

A: I weighed more before I became diabetic and now my weight has come down tremendously.

Research Participant O:

A: Since I got diabetes, I'm losing a lot of weight.

Research Participant P:

A: My weight dropped since I got sugar.

Research Participant Q:

A: Yes I think so!

Research Participant R:

A: I think it's true people want to go out and eat today. That's one thing I don't like, eating in the restaurant. They don't want to cook. Today's girls don't want to cook. They just want to go out and eat the meals out and that's what happens because they eat all the junk food and what also happens is that you put on weight.

Research Participant S:

A: I don't think so, I don't! Some say eating causes it and some say worry causes it. To me, I don't think so, I take both.

Research Participant T:

A: I think so because you are more free with everything. You think you can afford this and you can that.

Research Participant U:

A: No I don't think so!

Research Participant V:

A: That's true! You got all the luxuries with money. Like for us, now we were so poor that what we wanted we couldn't have got it and in my family, we all were very slim but we were very, very healthy. Other families that used to live with us, they had everything, but they got sick.

Research Participant W:

A: Where I got money? When I had money I was slim.

Research Participant X:

A: I would think so because I know every time I go to the shop I have to come home with packets and the thing is half of what I buy, I would look at it and say, that's for the children. But you know these children, they'll just have a nibble and leave it and at the end I found because I suppose I'm alone during the day and I'm bored because I have this lady here that does the work, I just do a bit of touching up here and there, I find that I tend to eat more, I just sit with this and that!

Research Participant Y:

A: Depends on the type of environment you live in. If you got a good job and you got a good life, you got a good family to live with and you not broke, then I think this adds up to give you a little weight.

The research participant's replies to this particular question varied. Seventy two percent of the research participants did not volunteer a direct answer. Instead, they gave a multitude of reasons why they have the present weight and what brought it about. It was only research participants L, S and U that replied in the negative and research participants Q, T, V and X replies were positive to the question.

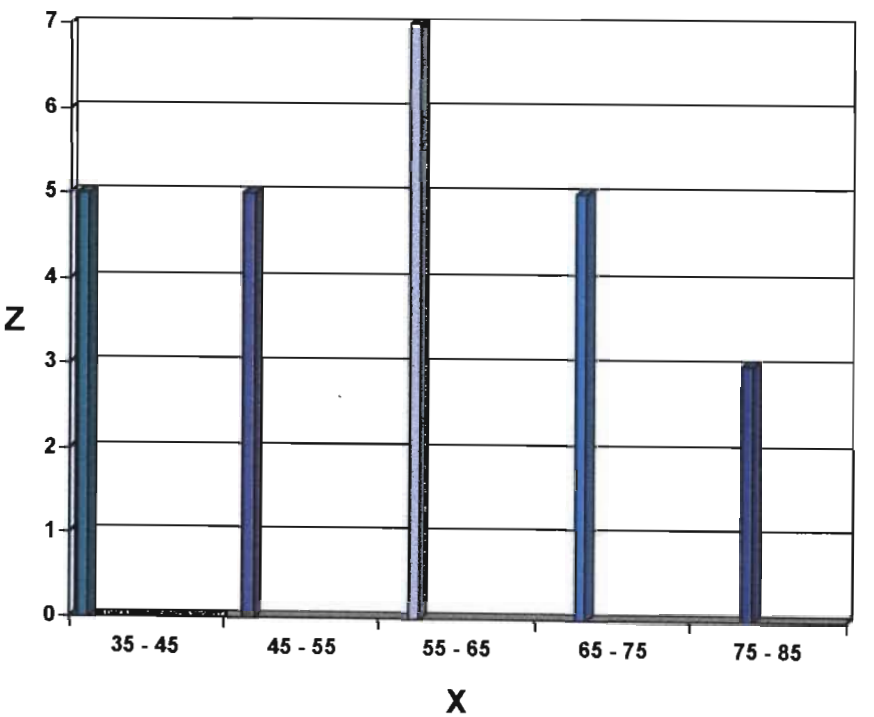
According to health psychologist Ogden, "obesity has been associated with cardiovascular disease, diabetes, joint trauma, cancer, hypertension and mortality. The effects of obesity are related to where the excess weight is carried; weight stored in the upper body, particularly in the abdomen, is more detrimental to health than weight carried on the lower body" (Ogden, 1996 : 113) . Ogden further states that "increases in the prevalence of obesity coincide with decreases in daily energy expenditure due to improvements in transport systems, and a shift from an agricultural society to an industrial and increasingly information - based society. It has therefore been suggested that obesity may be caused by inactivity." (Ogden, 1996 : 118)

Diabetes has been known to be called a disease of old age. However, Dolger and Seeman (1967), contend that as far as age is concerned one is susceptible to diabetes throughout one's lifetime. That susceptibility grows progressively until we reach the age of 40 and then there is a swift growth in susceptibility.

In response to: *a person between the ages of 45 and 70 is more likely to get it than a person in any other age group*. If we refer to Tables 1 to 5 (6 - 10), the ages of the research participants are illustrated. The following chart however is a graphical illustration of the ages of the research participants.

Figure 2: *A graphical illustration of the ages of the research participants.*

FIGURE 2



z axis: number of research participants

x axis: age groups of research participants

The findings of this research study are inclined toward the above hypothesis where 64% of the research participants fall within the ages of 45 and 70 and 36% of them lie outside this age group. Dolger and Seeman (1967), go further to assert that at the age of 30, the woman becomes more susceptible until, between the ages of 45 and 65, she is twice as likely as a man to get the disease. In addition, a noticeable increase in susceptibility takes place as the woman approaches the menopause.

The final premises of Dolger and Seeman that will be drawn on are the following:

a) a married woman is more likely to get it than an unmarried woman.

b) a mother is more likely to get it than a non - mother.

Although Tables 1 to 5 (6 - 10), illustrate the marital status and the number of children of the women research participants, the following graphic illustration is a comprehensive representation of this.

Figure 3: A graphical illustration of women research participants married with children, those that are widows with children and those that are widows without children.

FIGURE 3

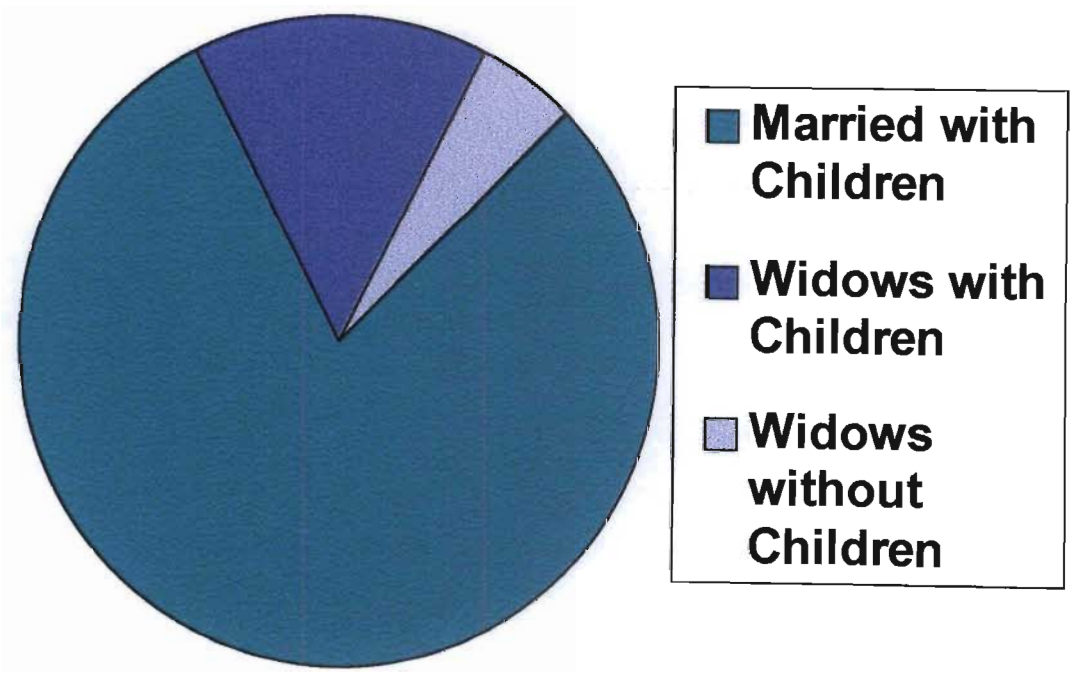


Figure 3 therefore demonstrates 80% of the women research participants are married with children, 15% are widows with children and 5% are widows without children. Research indicates that one of the most unusual aspects of the disease is the apparent tie to marriage and motherhood. Studies also reveal that the highest rate of death from diabetes is among married women and this includes widows and divorcees. The death incidence among married women is approximately twice that among single women.

Dolger and Seeman (1967), pose the following question: "Why should women be more susceptible to diabetes than men, and married women more than single women?" According to the authors, motherhood seems to be the reason. Also, women with more children and increased pregnancies enhance the likelihood that they will become diabetic. Cited in Dolger and Seeman, "in 1949, three Scottish doctors, H. N. Munro, J. C. Eaton, and A. Glen, completed a thorough survey on the subject in a Glasgow Diabetes Clinic. Obesity and heredity are ordinarily considered major factors in diabetes susceptibility. The increased susceptibility of married women has been attributed to the fact that they are frequently overweight during and after pregnancy. To check this theory, the Scottish doctors studied a number of women of comparable obesity and found that the tendency toward diabetes varied directly with the number of children each woman had borne. The highest incidence was among the women with the biggest families." (Dolger& Seeman, 1967 : 23 - 24)

Regarding the influence of heredity, the Scottish doctors further found that: "Women with six or more children were likely to get the disease even where there was no history of diabetes in the family. These studies were conducted carefully to make a clear division between obesity and heredity on one hand, and frequency of motherhood on the other. The results showed that childbearing, by itself, must be considered an important factor in the development of diabetes among women. Thus, the reason for the sharp rise in diabetes among women over 40 seems mainly due to the stress of repeated pregnancy plus the dynamic upheaval of the menopause" (Dolger & Seeman, 1967 : 23-24).

Studies also suggest that as the diabetic woman enters middle age she is more sensitive to bladder, kidney, and other urinary infections. Also, diabetes seems to increase a woman's susceptibility to heart ailments. There are claims that generally the healthy woman is three times less likely than a man to suffer from heart disease. Diabetes sweeps out this benefit and places the diabetic woman in a precarious position.

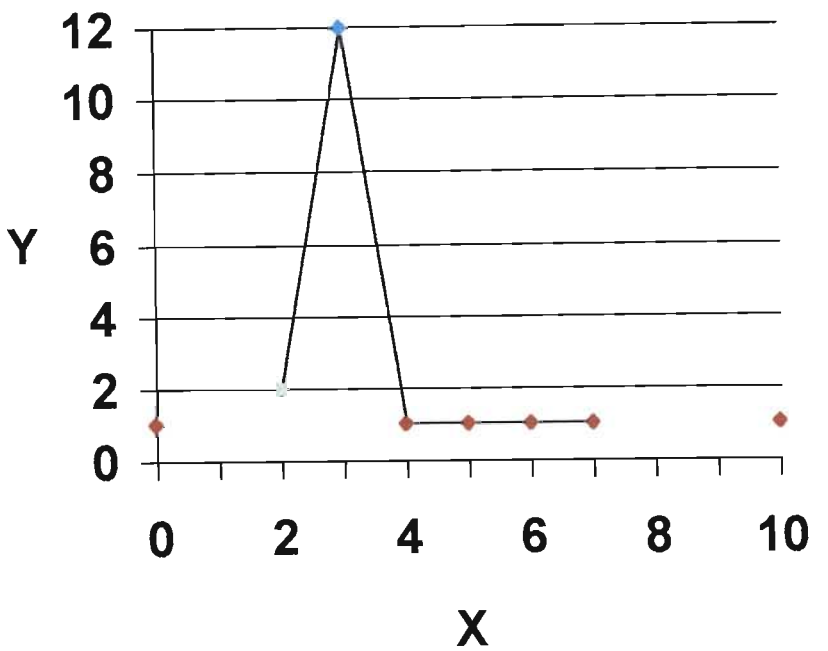
Dolger and Seeman (1967) assert that the demands of family life that are placed upon the wife, particularly if she is a mother, are yet another factor to be taken into consideration. Crises within the household are always arising, and this complicates the management of her diabetes. For instance, a child falling sick and requiring immediate medical attention. Possibly the child could be injured at outdoor play and the mother would need to fetch her or him as she is about to begin a required meal. The husband could call up about a last-minute dinner guest and she would need to rush out and do special emergency shopping. Similar ones take place on a daily basis and disturb the pattern of a housewife's life.

A number of the women respondents referred to such and other incidents occurring daily in their lives. Research participant U, was widowed at a young age and early stage of her marriage. The following are her powerful words regarding her life: "My children are small. I want to educate them. Once they are educated and they can fend for themselves, I will come smiling to you (meaning God), but till then, don't touch me! If something can happen, who will care for my children? If my children go on the wrong path or anything? I pray to God every day that today I am well and I got the strength and the courage. When I go to the hospital, my children just look at me".

The following chart outlines collectively the number of children of the women research participants.

Figure 4: A graphical illustration of the total number of children of each research participant.

FIGURE 4



y axis: number of research participants

x axis: number of children

Interestingly, five of these women research participants are from a non-diabetic family. Three of them form a part of the 60% of the women research participants that have three children, one is a part of the 5% that have four children and there is the one that is also a part of another 5% that has ten children. The other women research participants with five, two, six, seven and no children constitute a part of the 30%.

A number of the women research participants experienced additional medical complications. For instance, research participant A was experiencing problems with her eyesight. Upon examination it was discovered that there were blood clots at the back of the right eye. Laser treatment was used but unfortunately the left eye is now being affected. The specialist/surgeon cited diabetes as the reason for the blood clots!

Research participant B talks about experiencing chest pains and a constant burning sensation in the throat. Research participant C has high blood pressure, wheezes, is asthmatic and rheumatic. Research participant D had an abscess in the liver, a burst appendix and has had her womb removed. Research participant E has angina.

Research participant F has vitiligo, a skin problem which results in a loss of pigmentation. Research participant G has completely lost the hair on her head. She now has to use a wig permanently. Research participant I has high blood pressure. Research participant K had four miscarriages and experiences frequent vaginal infections, which she says are directly related to her high blood sugar levels. Research participant M had a hysterectomy, a major back operation, has syphilis sclerosis, developed severe thrush and sores in the mouth which till this day have not healed .

Research participant O had a stroke and was told by the doctor that it was as a result of high blood sugar levels. Research participant Q underwent a heart operation and a pacemaker was inserted. She also has high blood pressure. Research participant R had three to four miscarriages and had to have laser treatment for her eyes. Research participant S underwent an ulcer operation. Research participant T says she got tetanus as a result of her diabetes.

Research participant U had both breasts removed as a result of cancer and has high blood pressure. Research participant W had a miscarriage, a mild stroke and has eczema. Research participant X also had a vaginal infection a couple of times. When I spoke to research participant X, she reported that a simple scratch on her toe became infected and upon testing her sugar found the levels to be high. Research participants P and V were the only two women who had no other medical complaints apart from the diabetes.

All five male research participants also encountered further medical problems. Research participant H had a heart and neck operation. Research participant J has epilepsy, high blood pressure, sinusitis, asthma, angina and arthritis. Research participant L has high blood pressure. Research participant N has Parkinson's Disease and also had a cataract operation. Research participant Y has high blood pressure, arthritis and had a stroke.

If all of the research participants additional medical complications are taken into account, the following figures in Table 6 illustrate the association between diabetes and other medical conditions.

Table 6: Number of additional medical complications of all the research participants and the total percentage.

TABLE 6	
NUMBER OF ADDITIONAL MEDICAL COMPLICATIONS	**TOTAL PERCENTAGE**
One	44%
Two	24%
Three	12%
Four	4%
Five	4%
Six	4%
None	8%

Before proceeding, it is important to note the difference between an anthropological and epidemiological study of an illness. Generally, both terms are unfamiliar to the lay person, and this emerged convincingly during the course of this research process. They would appear to be known to persons who practice the respective disciplines and adopt such approaches when conducting research.

Hahn, who practices both disciplines poses the following question: "How do we justify our claims to knowledge about events of sickness and healing in society? And how do we achieve and verify new knowledge? Epidemiology is one approach to such knowledge - widely respected, though less well understood; anthropology is another - unfamiliar as an approach to sickness and healing. Epidemiology is seen as an objective science focused on the assessment of clearly specified associations among precisely defined variables through measurement, counting, and statistical analysis. In contrast, anthropology is thought of as a subjective discipline devoted to understanding the inner worlds of others by means of close, empathic encounters." (Hahn, 1995: 99)

Hahn further claims that, "anthropologists observe and record what the people they study do and say, whereas, although epidemiologists gather information from humans in societal settings, they examine settings not for their uniqueness but, to the contrary, for their representativeness and indication of universal processes." (Hahn, 1995 : 104 - 105)

According to Hahn, "epidemiologists are interested in the reproducibility of their work because research methods are supposed to work regardless of who follows them, and because repeated observation of a phenomenon adds credibility. They develop 'instruments' and seek data that are 'reliable'. Instruments, such as questionnaires, are the standard procedural means by which information on subjects and their environments is collected." (Hahn, 1995: 104 - 105)

Hahn is therefore of the opinion, "that the discipline of anthropology seeks analyses rich in context, showing how many of the local details hang together to form a unique picture. Epidemiology in contrast, seeks analyses linking universal facts, free from context. The discipline of anthropology is fat and soft, that of epidemiology lean and hard - 'thick' and 'thin' in the metaphor of Geertz." (Hahn, 1995 : 111)

The Norwegian anthropologist Fredrik Barth makes the following salient point: "Our contribution as social anthropologists must lie in providing such primary materials for understanding the processes; it lies in our powers of observation out there where change is happening today, and not in producing secondary data by deduction and extrapolation. If this means that we must recast our very description of social systems in order to accommodate these data about the events of change, that makes our task more difficult but also more interesting." (Barth, 1967 : 661)

Difficult does not even begin to describe the circumstances around this research study. The following newspaper headlines give an indication of what I had to endure during the period of carrying out this research study. "Prisoners in Reservoir Hills" (The Rising Sun[32]; September 12- 18), "New plan to combat crime in Res' Hills" (Gazette[33]; September 27), "Tennis player hijacked in Reservoir Hills" (The Rising Sun; September 5 - 11), "Crime victims relate their horror ordeals at meeting" (Gazette; October 19), "Family wounded in attack" (Daily News[34]; September 27). This is only a fragment of such newspaper reports that I succeeded in retaining.

Recent crime statistics in the Reservoir Hills suburb reveal the following: 187 housebreakings, 102 hijackings, 270 break-in theft of motor vehicles which includes 95 thefts of motor vehicles and 175 thefts out of motor vehicles, 104 assaults, 40 GBH[35], 7 murders, 23 attempted murders, 3 attempted rapes, 12 known cases of rape, 13 culpable homicides and 179 other crimes.

All of the twenty-five interviews involved a commute by means of a motor vehicle. A number of the research participants themselves and members of their families were victims of crime of one sort or another. Particularly sad was the incident related to me by research participant U. Having only just purchased a new automobile, her son who has a hearing challenge, was hijacked on their property. He was thrown onto the

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[32] This is a weekly community based newspaper that covers news items occurring in residential areas that include Reservoir Hills, Overport, Asherville, Clare Estate and Newlands.

[33] This is also a community based newspaper and essentially has the same publication format and coverage as the Rising Sun.

[34] The Daily News is a daily evening paper that covers news that includes incidents occurring throughout the province of Kwa Zulu Natal.

[35] Assaults with intent to do grievous bodily harm.

ground with a gun held to his head, and the vehicle was taken. Fortunately he was not physically harmed, but the psychological trauma that this family and numerous other families encounter is devastating.

The impact of this daily stress on the health of the research participants emerged strongly. All of the research participants spoke about the fear of having to venture outside their homes and even within the confines of their own property. The following accounts of several of the research participants capture this predicament[36]:

Research Participant D: Before we used to walk, but now it's so dangerous they want to attack you. One lady was poked in the arm while walking and going to work. A husband sitting in the car waiting for his wife was taken away with the car. You must keep your doors and all locked while driving because they can be hiding anywhere. If they know this is your daily route they will keep an eye on you for some time before they attack you. That is how they get you! Another neighbour who used to leave her daughter in school everyday, one day they got her and took such a beautiful car away. One morning the neighbours awoke and found the garage light on. They broke into the garage and took the car away. You see, I'll tell you something, maybe those days we were free to walk about, today we are scared, you are scared!

Research Participant F: We used to be so regular, we used to go to the grounds, it used to be so lovely! We used to actually jog. The whole family used to go. We gave that up, it was not safe, that put us off completely and it was so convenient! Its not an excuse but this is the fact.

[36] The following commentaries by the various research participants are in their very own words and have not been altered or changed in any way.

Research Participant G: We have to lock up! Next door a car hijacking happened. The neighbour came from work and I don't know where these fellows came from. She was about to open the electronic gate and they told her 'to come out'. She got such a shock!

Research Participant R: My husband[37] and I used to walk in the evenings. After all this crime and the way they carrying on it's so frightening even to go in your own yard. See, I got no jewels on! I don't wear my jewellery because its so dangerous. You don't know when and who is going to be around to attack you. That's how life is! So what can we do?

Research Participant S: Well things are bad around here, people are complaining! Stealing a lot, like clothing, getting into the houses and this and that.

Research Participant T: I[38] used to walk around the house, everything! I used to go into my garden. No more now! I'm too afraid with the crime factor to come out in this verandah now.

Research Participant U: My son was shot at and hijacked so after four I don't like to go out!

Research Participant V: Twice in one month we had a burglary at our house! Through the locked garage doors they stole my son's radio.

Research Participant W: I'm[39] too frightened to walk! They nearly break into our house the other day. We heard this rattling sound, they broke the front gate! We got this chain there every night which we put and we sleep. My daughter's Toyota was also stolen right from here in the night. The day before yesterday my neighbour with her bag on her shoulder was coming out from her house with her grandson. This guy came and pulled the knife on her. Two months ago another neighbour was opening her door, she was attacked. Lucky they never

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[37] Who is incidentally also a diabetic.
[38] Research participant T's, husband is a diabetic as well.
[39] Research participant W, lives alone with her daughter in a very large house.

shoot her!

Research Participant X: I used to walk but you can't, its too dangerous!

Research Participant Y: My place was burglarized five times! It's not safe to walk. It's not very safe. It's not safe!

Unfortunately the above sentiment was one that was expressed repeatedly in the majority of the interviews with the research participants. Although a number of research participants did describe alternative means of exercising, including exercise machines, their commentaries seemed to suggest that the high incidence of criminality prevailing in the suburb has impacted negatively on their health, particularly on their diabetic condition where frequent exercise is strongly recommended for the assisted control of this disease.

In addition, though all the meetings with the research participants took place in their homes except for the interview with research participant Y which was held in the office of his nursery, my safety and that of my motor vehicle were a constant point of concern, especially when interviews were conducted with research participants who had experienced crimes committed on their property. Fortunately, all the research interviews were concluded without incident.

CHAPTER THREE

DEFINING THE RESEARCH PROBLEM

3.1. Responses and Beliefs of the Research Participants

It was essential for me to understand the meanings that the research participants attached to this disease condition called diabetes. I therefore began collecting data which involved asking simple questions around the treatment routines, family health histories, blood sugar levels, the duration of their diabetes, their beliefs concerning why they are diabetic and whether they made any attempt to empower themselves regarding knowledge of this disease.

There appeared to be a lack of cognizance among the research participants regarding their medication, and this emerged in several interviews. It must however be mentioned that research participant T has been on the same medication for the last twenty-six years and this is what she says: "Doctors can't believe when I go for treatment that I'm taking the same medication from '74. They say its very old-fashioned and it's finished off the market but I say I still get it". The following are the remarks of several research participants in response to the question about what medication they were taking:

Research Participant A: I can't remember![40]

Research Participant D: It's a long tablet and one big round one.

Research Participant I: That long white one.

Research Participant L: I can't remember those days.[41]

Research Participant P: The name is on the bottle.

Research Participant R: I do not know what it was called, the capsules were blue and white, that was old capsules for sugar.

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[40] Research participant A, is a diabetic for twenty years.

[41] Research participant L, is a diabetic for the last thirty years.

Research Participant U: The white ones, I never checked the name, I just take it, I don't read the name!

Research Participant V: I always get confused!

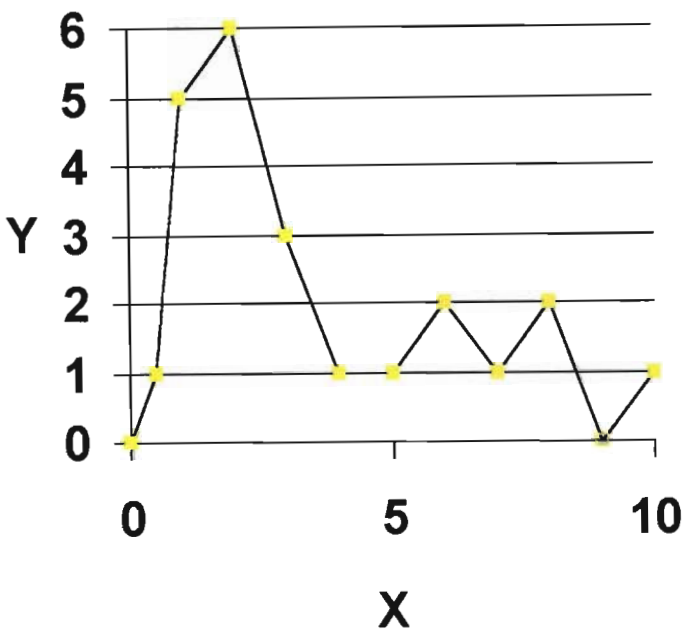
As previously discussed, a number of research participants have additional medical ailments. This results in the need for several types of medications to be taken. It was rather alarming to discover that a few research participants were not adhering to the prescribed medication. While some chose not to take their medication at all, there were others that took more than the allocated amount. Research Participant H is on record as saying that at one time he was taking twenty-seven tablets a day. There were two research participants that are on insulin.

Research Participant A was on a tablet form of medication but due to an outbreak of rash on her skin she now takes insulin in doses of twenty units in the morning and ten units in the evening. She receives her medication from a government clinic. Research Participant R is on insulin which was prescribed after her spine operation. She takes the insulin four times a day. Ten units for breakfast, twelve units for lunch, ten units for dinner and sixteen units before going to bed. She receives medical attention from a private physician.

The following diagram is a graphical illustration of the total number of tablets the research participants take daily.

Figure 5: Indicates the total number of tablets that the research participants take on a daily basis.

FIGURE 5



y axis: number of research participants

x axis: number of tablets

It is significant to note the fact that although the above figures in the chart indicate the total number of tablets taken by each research participant daily, it does not necessarily include the medication for their other ailments. The figures do however accurately indicate the number of tablets that the various research participants take as asserted by them. In many instances, the numbers reflect only the tablets taken for diabetes.

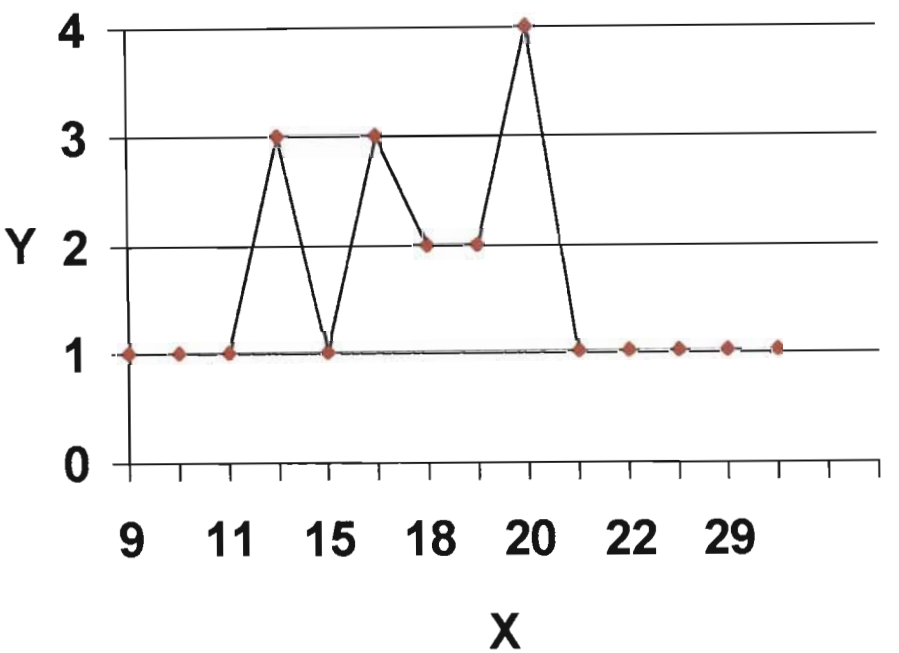
According to Figure 5, one research participant takes half a tablet, five research participants take one tablet, six research participants take two tablets, three research participants take three tablets, one research participant takes four tablets, one research participant takes five tablets, two research participants take six tablets, one research participant takes seven tablets, two research participants take eight tablets and one research participant takes ten tablets. Research participant W was put on insulin while she was pregnant. The reason for this was her uncontrollable sugar levels. According to research participant W, her sugar levels were around twenty to twenty-two.

A very significant finding to emerge from this research study was the extreme blood sugar levels of a number of the respondents. But more distressing was the fact that many research participants did not concern themselves with their high blood sugar levels and continued to engage in *practices* that exacerbated their disease diabetes.

The following chart illustrates the highest sugar level that each research participant experienced.

Figure 6: Is a representation of the highest sugar level that each research participant experienced.

FIGURE 6



y axis: number of research participants

x axis: highest level of sugar

The only research participants that did not furnish their blood sugar levels were A and N. Thirty-five percent of the research participants' sugar levels were in the region of the twenties. Fifty-seven percent of them fell between the levels of ten and nineteen. Research participant P was the only one with a sugar level below ten, whereas research participant S had an exceedingly high level of thirty point two.

Research participant P has been a vegetarian for the past thirty years. She expressed great disdain at having being diagnosed as a diabetic: "No sugar I had, I do not know how the sugar got me." Research participant S was no different: "What can I say, I was not diabetic, only after my marriage. What changed? What pressure that caused that I had to go like this? I was thin but now I put on weight. At times I can't walk, I can't do anything I'm helpless."

An important point of consideration is that some family members of the research participants were also severely affected by diabetes and in many instances are now deceased. Research participant A and C lost their mothers as a result of diabetes. A family that was particularly devastated by this disease was that of Research participant F. Her mother died as a result of diabetes. They were a family of five brothers and four sisters. Only two remain including herself and a brother. The four brothers and three sisters were all diabetic. All sisters died as a result of kidney failure which was linked directly with diabetes. One of the sisters became completely at age thirty-nine blind. This was once again coupled with the diabetes.

Research participant J lost both his parents as a result of diabetes. His father, who was fifty-nine years old, suffered renal failure and his mother, aged fifty-six had a heart attack. Research participant K has a brother who is a diabetic. He had a toe amputated and this was due to his uncontrolled diabetes. The father of research participant O, who was heavily diabetic, died as a result in his fifties. Research participant T also lost her mother as a result of diabetes.

The father of research participant U died due to being a diabetic. She described how in the latter stages he had an outbreak of sores on his legs which were unbearably painful because he always felt the urge to scratch them. The mother of research participant W was also a diabetic and suffered three consecutive strokes and died as a result of diabetes. The father of research participant X died when he was fifty-three, due directly to being diabetic. He had a toe amputated and he was blind.

The period of time that the research participants are diabetic varies.

Table 7: Is an illustration of the number of research participants together with the total months and years that they have been diabetics.

TABLE 7	
NUMBER OF RESPONDENTS	**TOTAL NUMBER OF MONTHS OR YEARS**
1	4 months
1	6 months
1	1 year
4	2 years
2	4 years
1	5 years
1	7 years
1	9 years
1	10 years
1	13 years
1	15 years
1	18 years
1	20 years
2	22 years
3	26 years
1	29 years
1	30 years
1	32 years

Forty-eight percent of the research participants have been diabetic for a period of less than a decade, and fifty-two percent of them for more than a decade. The dominant time period according to the table is two years, followed by twenty-six years. Research participant L has been a diabetic for three decades and research participant G for just over three decades.

It is significant to note some of the self-reported reasons given by the research participants for their diabetic condition. The following are their responses to the question of why they believed they have diabetes:

Research Participant A: I thought because my mother had it, it goes in the family you see.

Research Participant B: Why I would say I neglected myself, because eating anytime of the day and having the incorrect foods and overeating as well.

Research Participant C: That's what I wonder! I won't talk a lie, in my young time I used to eat a lot of sweets, chocolates and things like that you know. But I say it can't be that! Let it come if it wants to come.

Research Participant D: I don't really know! You worry and all these things. But the thing is as far as food and all is concerned I eat just as everybody, normal curry and rice and all these things we ate all along.

Research Participant E: I don't know! Why did I get this sickness, I don't know? I don't know how I got it and why I got it.

Research Participant F: I did ask myself that question. I don't know whether I should say maybe because of my age. It could be I feel it's a heredity thing. I mean my family had it, every member of my family starting off with my mum. I feel I also inherited it because it runs in the family. I don't know? I cannot see myself saying that something else has caused it and of course together with eating habits as well. It could be something that I've been eating too much of but I don't know anything that I've ate too much of. The situation gets even worse when you have a lot of carbohydrates, too much of carbohydrates, a lot of carbohydrates. When you add to that carbohydrates that our body has, these are the things I feel causes these things.

Research Participant G: I feel it's because of the sweets and maybe the hair treatment that I'm a diabetic today.

Research Participant H: Well diabetes wasn't really in my family, pressure, blood pressure was. Actually my fathers sisters and brothers all died of high blood pressure and strokes but I didn't really bother about it! Maybe my carelessness because the foods and all you know we've been eating. That is it! We did everything in excess not in limits you know.

Research Participant I: The food!

Research Participant J: On the news on the radio, they said 66% of diabetics are Indians. Because of our food I think! Our food is too oily. Do spices also affect? Because the pancreas is involved. I think you know what I mean. But look at my brother. We never left home, we used to eat the same food, we from the same parents, he's almost a year younger than me and he's not diabetic. At the moment I feel terrible I tell you. At night I can't sleep. My eyes are starting to itch a lot and well I got several complications which is not helping.

Research Participant K: I used to eat all sorts of foods when I wasn't married and also when I got married. My mother-in-law was diabetic and no one could beat her in a diet. She used to be exact for every single thing and the poor lady died. So you know I believe in one thing, if you want to eat something, you must eat it!

Research Participant L: Must be the food that I'm eating!

Research Participant M: I don't know! Probably I inherited it from my father.

Research Participant N: Well I take it that it just happened. There wasn't any definite cause. No mental trauma or something like that!

Research Participant O: Well I was thinking it was in our family. That's what I think! My brother was heavily diabetic, my father and all my sisters got it.

Research Participant P: I should eat so much of sweet meats but I had no sugar, I don't know how I got sugar!

Research Participant Q: I curse myself! I say, why did I eat so much of sweets why didn't I keep rigidly to my diet and why did I go overboard while on holiday.

Research Participant R: My mother was a diabetic and my granny was. Maybe it's the genetic thing you know. But I do worry because in my family my cousins all who are my age or little older, none of them are diabetic. I don't know why!

Research participant S: I just wonder why I'm diabetic? Sometimes I think why? All these years when I was single I had no sugar!

Research Participant T: Well when I went for my check-up they asked me who had diabetes in my family? I said, my mum had, my grandmother had, my mum's mum. I don't know whether my father's mother and father had. I can't remember. Then they told me, its in the genes that's why I got it! That's what I think. But I think it was partly my fault as well. I don't blame entirely my genes. It was the food because we were carrying on as if nothing was going to affect us. I think its partly the food!

Research Participant U: I thought to myself if my mother and my father got it, might just be in the genes, so like that!

Research Participant V: I think it's got to do with heredity, my parents had it!

Research Participant W: I'll be honest with you, I feel anything that happens in anybody's life is all fate! What God writes, you'll go through that.

Research Participant X: I thought it was a heredity thing!

Research Participant Y: I was surprised why I got it after all these years. I didn't ask myself why because I thought sicknesses come with age. Maybe it's a follow-up after the stroke.

By means of a table, the reasons why the research participants believe they have diabetes is presented.

Table 8: Indicates the reasons given by the research participants of why they believe they have diabetes and what they attributed having this disease to and the total percentage.

TABLE 8	
BELIEFS OF RESEARCH PARTICIPANTS OF WHY THEY HAVE DIABETES	**TOTAL PERCENTAGE**
Food	24%
Heredity	16%
Uncertain	16%
Genes	12%
Genes and food	8%
Over-consumption of sweets	8%
Overeating and foods eaten	4%
Old age	4%
Natural occurrence in one's life	4%
Fate of God	4%

Food was considered as a principal cause of diabetes by twenty-four percent of the research participants. Sixteen percent of the research participants attributed their diabetes to heredity[42]. Another sixteen percent were uncertain as to why they actually have diabetes. Twelve percent linked having the disease to the genetic factor. Eight percent ascribed having diabetes to excessive consumption of sweets, and a further eight percent to both the genes and food. Four percent considered overeating and the foods eaten as a cause. An additional four percent regarded old age as the culprit, while an added four percent thought of it as a natural occurrence in the process of

[42] In a telephone conversation with a leading physician practising in Durban and who has a research interest in the disease diabetes, I asked him if there was a difference between heredity and genetics. His reply was an emphatic no! This was also confirmed according to the definitions of heredity and genetics in The New International Webster's Concise Dictionary.

one's life. A final four percent claimed that it was due to fate and God!

The following question to the research participants was on what attempt they had made to find out more about this disease called diabetes. The explanations and replies received were mixed with excuses, and to an extent, some startling revelations. For instance, the following question to research participant A, was posed:

Q: Did you ever try to get some books or more information to find out more about diabetes?

A: My eyesight is not so good!

Research participant B, responded in the following way:

Q: Did you make any attempt to find out more about diabetes?

A: When I see an article I really go for it and read it, Readers Digest Books had some information on it.

Q: After reading the article how did you feel?

A: It gives me that sort of go-ahead for about two weeks or a month, then I go back to the old styles again. No exercise and my eating habits change again. I've got no will power, my will power is low!

Research participant C's answer to:

Q: Did you ever try to find out more about diabetes?

A: No, not really, I always attend the doctor!

Research participant D's, answer to:

Q: Did you make the time at all to read more about diabetes and find out why you have this disease?

A: I did!

Q: And?

A: You know when I was reading about it then only did I come to know what is right and wrong. You know there was somebody who gave me a book about what sugar can do to you, to your organs and all these things. Then normally people think that you can eat anything they want and before they go to the clinic they take

their tablet or starve for that little while. Don't take all the sweet things! You are bluffing yourself, you not bluffing them, you only bluffing yourself. So I said, no, this is not right because I'm killing myself. Maybe it was through diabetes that I was keep on getting that infection. I learnt when I read that! They say that sugar sort of damages and I now have boiled water most of the time. When I make muffins I use digestive bran and not too much of sweet things. We also have high fibre foods.

Research participant E's, response to:

Q: Did you attempt to find out more about diabetes?

A: No! But when I go to the hospital I see the charts or whatever and I read them.

Q: After reading the information, are you affected by it?

A: That thing makes no difference to me!

Q: But do you not feel that you should be monitoring more closely the foods you eat and exercising more?

A: The truth, I didn't think about it. The truth I'm telling! But by you explaining now, I feel a little fear.

Research participant F's, reply to:

Q: Did you do any reading to find out more about diabetes?

A: I did! I mean when I see an article knowing that my family was a diabetic family it concerns me, it does. Oh yes, I used to read and not realizing that I'm going to end up with that as well. But it did make me think I mean at this age I'm diabetic. But then again I said, no, I don't think anybody gets away as one gets older to get some sort of illness. This is how I thought about it. I looked at it that way because I didn't have an option. How else am I going to look at it you know?

Research participant G's, answer to:

Q: Did you endeavour to find out more about diabetes?

A: Yes, I used to read before but now I don't because I know what is what! I know what happens to a diabetic. Some of the things I know, like you know what to eat, what to do when you tired you must sleep or if you had a lot of sweet things you will catch up that your sugar is high. Maybe through this or maybe a lot of tension, the sugar also goes away high. When you pass a lot of urine, that's the time too you know that the sugar must be high.

Research participant H's, response to:

Q: Did you try to find out more about diabetes?

A: Yes, yes, yes! I read. There are lots of things I've read.

Q: And?

A: The main thing they say, is the food that you eat plus you need a lot of exercise to burn up your sugar or whatever it is. But as I told you, under the food line although they tell you, I can't live with it, with eating those things what they ask me to eat. That's my honest opinion. Even my wife sometimes forces me and says, don't have this here. But I want it!

Research participant I's, reply to:

Q: Did you make any attempt to find out more about diabetes?

A: No!

Research participant J's, answer to:

Q: Did you try to learn more about diabetes?

A: No, but my mother used to cook food like it used to swim in oil and that's why we've been spoilt as I say, no discipline and we still carry on.

Research participant K's, response to:

Q: Did you attempt to find out more about diabetes?

A: No!

Research participant L's, reply to:

Q: Thirty years is a long time period to be a diabetic, did you try to learn more about this disease?

A: I read a lot, but no, I did not try to find out more about diabetes!

Research participant M's, answer to:

Q: Did you try to learn more about diabetes?

A: I know what we shouldn't be eating. I used to cook for diabetics. We used to cook everything but mostly steamed. Everything is steamed and we shouldn't use butter and if I use, just the base, just coat the base. Like now when I fry my chicken or roast my chicken in the oven, I don't use no oil, no butter, no nothing! I just spice it because it has little oil from normal chicken so it cooks on its own. I do the same for baked fish and so forth.

Research participant N's, response to:

Q: Did you make any attempt to find out more about diabetes?

A: Well I was fired very much intellectually to find some way of alleviating the diabetes so I read a lot on the subject.

Q: And?

A: Just to enlighten myself and talk to people who had diabetes and give them little hints on what they could think of.

Research participant O's, reply to:

Q: Did you try to find out more about diabetes?

A: Yes, we do a lot of reading and the doctors tell us and we read.

Research participant P's, answer to:

Q: Did you try to learn more about diabetes?

A: In West Sun Home[43] some people you know should come and talk about diabetes.

Q: What did they say?

A: They said, can eat rice, can eat apple, fruit, don't eat sweet things but they told, don't take sugar.

Q: How often did they speak to you all?

A: Once in a month!

Research participant Q's, response to:

Q: Did you make an attempt to learn more about diabetes?

A: In fact my son brought a booklet and said, "Ma read that up". It's the same thing they told, avoid oil, don't be frustrated, don't think about it too much and drink a lot of water. They say, drink a lot of water and diet is the main thing.

Research participant R's, reply to:

Q: Did you try to find out more about diabetes?

A: I read so many books and things and all about diabetics following the diet. I did read all that. I do get worried why I'm diabetic. All they say, life goes on if you look after yourself. I read of children, so sad they all are insulin dependent. I don't why it's so common today?

Research participant S's, answer to:

Q: Did you do any reading on diabetes or try to learn more about it?

A: No, but I get pamphlets like when I go to the doctors, it's in the surgery.

Q: And did you read it?

A: Yes!

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[43] Is a home for the aged that lies to the south of Durban and research participant P, lived there for a while because of family problems.

Research participant T's, response to:

Q: Did you make any attempt to find out more about diabetes?

A: Yes, whatever I can get hold of on health or diabetes or vitamins or whatever, I read!

Research participant U's, reply to:

Q: Did you try to learn anything more about diabetes?

A: No!

Q: Absolutely nothing?

A: No! But I'll be honest with you, I gave up hope now. I finish tell my children that I'm not going to live very long. I told them, its most probably one year or two years, I told them!

Research participant V's, answer to:

Q: Did you make an endeavour to find out more about diabetes?

A: My son informs me of all those things, he knows more.

Research participant W's, response to:

Q: Did you try to read to find out more about diabetes?

A: Yes I read a lot!

Q: From where do you acquire your readings?

A: They send us every month brochures.

Q: Who?

A: The Diabetic Association.

Q: They do?

A: Yes!

Q: And you read the information?

A: Yes I read a lot!

Q: How did you become a member?

A: Because of chronic medication.

Research participant X's, reply to:

Q: Did you ever attempt to learn more about diabetes?

A: Besides the encyclopaedias and thing, nothing else!

Research participant Y's, answer to:

Q: Did you try to find out more about diabetes?

A: Well, my assumption was intake of sugar and over Radio Lotus[44] sometimes I hear people talking about certain subjects like diabetes and some doctor was commissioned once to talk about diabetes and he said, "look you can have natural fruit but don't overdo it because it's got sugar. So I'm very, very careful of that. I eat a banana for the day and I'll have half a orange you know. But I assume that intake of extra sugar brings in diabetes. Also stress, I have a lot of family problems!

When the above responses of the research participants are taken into consideration, thirty-six percent made no attempt to learn more about their disease after diagnosis. Sixty-four percent of the research participants did however strive to enlighten themselves about their diabetic condition. It must be mentioned that a number of research participants purchased a machine that would allow them to monitor their sugar levels on a more frequent basis. This was done in an effort to alleviate some of medical costs which was yet another factor that was brought to the fore during the course of this research study.

The issues of medical costs coupled with the need for medical attention were points that were constantly raised by the research participants. Of the total number of research participants, sixty percent seek medical attention from a general practitioner on a regular basis. Twenty-eight percent go to a clinic attached to various government hospitals as well as a clinic that is located in the city centre. Twelve percent receive medical care solely from a specialist physician. There are however research participants within the sixty percent grouping that see both a general practitioner and a specialist physician.

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[44] A radio station that caters predominantly for the Indian community in South Africa.

A number of research participants that are currently receiving medical attention from the general practitioner have no medical aid or cover for their medical costs. The following is an example of their frustrations regarding the spiralling cost of medical care:

Research Participant M: I'm not on medical aid and it's costly. Whenever you have to go you have to pay money and I go for my tablets and have my sugar tested.

Research Participant T: Because my husband was a free lance, he was not on medical aid. My son is a consultant with an insurance company so he made me buy a policy. I had those savings and my father gave me some money too. All that is gone! Now I'm left with only R9000. Every year it's about R7000 to R8000 with my medication. I pay for it! I went to a government clinic for about two years. Firstly they gave me medication but they didn't give me the medication I was taking. They gave me all generics and I still took them but it wasn't working out. It was not effective as the original and then they slowly started cutting down. From five they brought it to four! Then they said, they can't afford they can only give us three and then from there they only gave two. Then you have to wait the whole day. Then we stopped going, it was not worth it. My husband had all his savings, gone too! It's a problem.

Research Participant V: It's so difficult, no medical aid, nothing!

Research Participant Y: My bill is between R400 and R500 a month! So I must visit him two or three times a month. I pay out of my pocket, cash! I'm not a pensioner and I haven't got any exotic sources of income. I got to live with my wits.

While money and medicines were areas where there seemed to be a lot of concern for people living with diabetes, these issues were not as contentious and emotion - laden as were the issues of lifestyle, dietary habits and beliefs about culture and disease. Through asking questions on these topics, I was able to gain rich insights into the daily lives of the research participants and how their ways of life were perceived (or not perceived) to be playing a part in their illness condition.

CHAPTER FOUR

LIFESTYLE

4.1. Overview

In 1987 a study was undertaken by Wiedman whereby he demonstrated how the altered lifestyle of the Oklahoma Cherokee had impacted on their health. The shift of the Oklahoma Cherokee to an industrial lifestyle had apparently had dire health consequences. According to Wiedman, this change in lifestyle saw the Cherokee no longer walking great distances, but using motorised transport instead. Also, the use of new appliances decreased many of the toilsome household chores. This less strenuous lifestyle of the Cherokee coupled with the change in their nutrition, was believed to be a major contributing factor in the increase of Diabetes Mellitus amongst this community.

Wiedman states that, "historical photographs of Cherokee individuals and families from the study reveal that in the early part of this century most Cherokee were lean. Now, however, the Cherokee are quite obese, especially in the upper torso, a consequence of the caloric excess relative to energy expenditure that came with the shift to the industrial lifestyle. Thus body fat was stored, obesity ensued and diabetic symptoms began to appear." (Wiedman, 1987 : 59)

In the study of another American Indian group that Lang undertook, the following commentaries related to the lifestyle of the Dakota (Sioux) emerged: "Diabetes is an affliction that has come to them because their whole lifestyle is out of balance"; "Diabetes is not necessarily treatable by traditional means because it is a 'new' condition that came with non - Indian lifeways", and, "We once ate the right foods and lived the right way as *Wakantanka* intended us to do. People used to live to a very old age. Today we have these diseases like cancer and heart disease and now we all seem to be coming down with diabetes." (Lang, 1989 : 318 - 319)

Dowse *et al*, (including an epidemiologist, chemical pathologist, nurse and a physician) carried out a study among the Wanigela people of Papua New Guinea. According to Dowse *et al*, "the Wanigela people are one of the most diabetes - susceptible populations in the world, with a prevalence in the urban settlement of Koki about twelve times that of Australians of European origin. Differences in prevalence between rural and urban Wanigelas and other Papuans, such as those of Kalo village, suggest that the Wanigelas have a high frequency of a diabetogenic genotype which is expressed after adverse changes in lifestyle" (Dowse *et al*, 1994 : 768). The findings of this study of Dowse *et al*, indicate that the urbanised Wanigela people of Koki settlement in Papua New Guinea have the world's third highest recorded prevalence of NIDDM, after American Pima Indians and Micronesian Nauruans.

These case studies cited demonstrate that an extreme change and shift in lifestyle does appear to have an adverse affect on the health of the community, particularly in relation to the incidence of Diabetes Mellitus. Research literature also indicates that in 1962, the glucose tolerance of seven hundred and five adult Eskimos living in western Alaska was measured (Mouratoff & Scott, 1973 : 1345). A small fraction of those tested were intolerant, and not a single person was found with clinical diabetes mellitus. No conclusions were arrived at on the reasons for the rarity of diabetes in Eskimos. It was inferred however, that a high degree of physical fitness due to a physically active life might have been be an important factor helping to protect this population group against diabetes. Nontheless, it would be of interest to carry out a similar study today, some forty years later, with the same Eskimos.

In view of the impact that the lifestyle of a person can have on this disease, the research participants in this study were asked several questions that revolved around the kind of lifestyle that they led. One particularly important question that was posed to the research participants was, whether they thought they led too sedentary an existence. Their replies were:

Research Participant A: I feel okay at home! I prefer it at home.

Research Participant B: True! True! I could make that time if I really push for it. I must get up more earlier. If I could get up at five then I can get up at four in the morning and do it.

Research Participant C: In those days we saw farm life. No water, we had a tank. Rain comes then only we have water otherwise we must carry the clothes on the head, soak it at home and go to the river and wash. If this river haven't got we must go there or the other side. But no sickness I had!

Research Participant D: If you got nothing to do you sit at home. Working people work, now we got housework, we are at home.

Research Participant E: I get very tired, I look after my daughter's son!

Research Participant F: Yes I think we need to go out more, to be out in the open. To go for walks, exercises and things like that. I think it's a lot to do with our lifestyle. Its definitely our lifestyle! We sit a little too much. I think we put everything else first then we think of ourselves, which I think is wrong.

Research Participant G: Most of the time I take it calm now. I don't rush. Sometimes I have to do something quick, then my head you know goes away funny, like soft.

Research Participant H: My wife makes a noise with me every time, she tells me to take a walk, but she doesn't know my feelings, I get a terrific pain in my legs and they can't do anything about it, it's a blockage.

Research Participant I: Yes, too much!

Research Participant J: You know to be honest with you, with the pain I go through!

Research Participant K: If you look at our forefathers, number one, they had a longer life span than us. Number two, what they ate, it wasn't what we eating today, junk food and things like that, it was always fresh. So they were much healthier than us. Life is too stressful!

Research Participant L: No, I do gardening and once a week I go and play golf!

Research Participant M: Yes you can say that again! I sometimes tell my husband, I get so bored because he got a maid for me.

Research Participant N: I think so! I don't have any facts on hand, no statistics, so I can just make a general observation.

Research Participant O: I don't know because I'm a person who doesn't like to sit around. Although I got a maid, I'll be with her. I'll be helping around and I don't do a lot of sleeping and sitting in the daytime.

Research Participant P: I sit the whole day!

Research Participant Q: Yes! Physically, what are we doing? Just a bit of cooking, that's all, nothing else! We don't play sports and we don't go jogging or anything like that. Like some of the women I know in their eighties are jogging. They belong to clubs and all that.

Research Participant R: Yes I think we don't do much exercise. Like those days, how we used to walk to school, no cars! Today nobody walks, they want a car even to go to the corner café.

Research Participant S: I don't know individuals, like me, for today I was on the floor shining and washing and cleaning the house. I think I'm doing my exercise, not a hundred percent but I also need some advice.

Research Participant T: I think so! I'm talking about the elder people and not the younger people. Today's younger generation is much more active.

Research Participant U: Yes we don't do enough exercises. There isn't too much exercise. But okay, I'm on my two legs from the morning, I got no time to sit. The only time when I am going to sit is ten past five because I'm watching television now right up to half past six. I'm sitting now! That is my only time I'm sitting. Other than that I am on my feet all the time.

Research Participant V: That's true!

Research Participant W: I don't know!

Research Participant X: Yes I do, I do!

Research Participant Y: I think so! Time has come now, some executives, to change a globe they get a man to do the job. There was a time that I used to get the ladder, put the ladder on, change the globe. Today, lifestyle is such that you get somebody else to do it. You might as well pay for it.

Fifty six percent of the research participants agree that they lead a too sedentary lifestyle. The remainder of the research participants cited body pains, not wanting to lead a rushed lifestyle, a preference for staying at home, and being home, as reasons for a sedentary existence. There was however a research participant who stated that he engaged in gardening and played golf. In addition, another research participant declared that "she sits the whole day" whilst another claimed to be active in shining the floors, washing and cleaning the house.

4.2. The Impact of Tradition

Although a greater percentage of the research participants of this research study agreed that South African Indians generally lead too sedentary a lifestyle, it is also important in this context to examine the background behind their lifestyle. To fully comprehend the contemporary lifestyle of the South African Indian, it is necessary to have an understanding of how South African Indians historically conducted their lives historically since their arrival in South Africa commencing in the 1860's.

According to Jain who carried out a study on Indian communities living outside of India, "the social situation of the Indian communities overseas is complex and varied; the only constant feature among them is their initial emigration from India and the contemporary settlement in the countries of their adoption along with other ethnic groups. The fact that they belong to the integrated political systems of the countries of their adoption makes for unity, but ethnically, culturally and also to a larger or smaller extent, socially, there is diversity" (Jain, 1993 : 4). In a country like South Africa, certainly there is a great deal of diversity with different racial groups and various religious sects and linguistic groupings that fall within those racial groups.

The following table, is an attempt by Jain to present the broad demographic picture of Indians abroad.

Table 9: Overseas South Asians by Major Area and by Country : 1987

TABLE 9			
Europe		**Middle East**	
UK	1, 260, 000	United Arab Emirates	382, 302
Netherlands	102, 800	Oman	190, 000
France	42, 000	Kuwait	180, 000
Germany (FRG)	32, 335	Yemen (PDR)	103, 230
Spain	10, 000	Iraq	85, 000
Portugal	7, 300	Saudi Arabia	79, 987
Sweden	7, 046	Qatar	51, 500
Austria	3, 131	Bahrein	48, 050
Norway	2, 900	Yemen	14, 000
Switzerland	2, 863	Lebanon	15, 000
Denmark	2, 552	Iran	6, 300
Other	9, 107	Jordan	4, 506
		Other	319
Total	1, 482, 034	**Total**	1, 141, 194

Africa		**Caribbean and Latin America**	
South Africa	900, 000	Trinidad	430, 000
Mauritius	700, 712	Guyana	300, 350
Kenya	70, 000	Surinam	140, 000
Reunion	65, 000	Jamaica	33, 600
Tanzania	40, 000	Guadeloupe	23, 000
Libya	35, 500	Martinique	10, 000
Malagasy	21, 250	St. Vincent	6, 000
Zambia	20, 900	Panama	4, 000
Mozambique	20, 850	Other	4, 440
Zimbabwe	16, 000	**Total**	957, 330
Nigeria	14, 000		
Seychelles	5, 200		
Malawi	5, 000		
Liberia	3, 066		
Algeria	3, 003		
Ethiopia	3, 000	**North America**	
Zaire	2, 711	USA	500, 000
Other	13, 260	Canada	228, 500
Total	1, 939, 722	**Total**	728, 500

Asia		**Pacific**	
Malaysia	1, 170, 000	Fiji	300, 000
Burma	330, 000	Australia	99, 200
Singapore	169, 100	New Zealand	15, 000
Bhutan	70, 037	Other	569
Afghanistan	45, 600	**Total**	414, 769
Indonesia	30, 000		
Hong Kong	20, 180		
Philippines	12, 100		
Thailand	6, 802		
Brunei	5, 500		
Japan	2, 685		
Other	752		
Total	1, 862, 654	**Grand Total**	8, 526, 203

(Jain, 1993 : 2 - 3)

The global figures of Indian populations in Table 9 indicate that the largest concentration of Indians is to be found in the United Kingdom, followed by Malaysia and then South Africa with the third largest population of Indians. Interestingly, according to a 2000/2001 survey carried out by the South African Institute of Race Relations, the population of South African Indians now stands at 1, 092522. Literature affirms that the first entry of Indians into South Africa was on the 16th November 1860 (Pachai, 1979). This foremost group of immigrants was made up of around three hundred and forty people and included men, women and children. Their purpose was to serve as indentured labourers on the sugar estates, tea plantations, railways and in domestic households.

According to author Pachai: "The labourers were brought out on five-year indentures, offering terms of service which were mainly observed in the breach since a combination of five factors operated against their observance:

* An employee had first to obtain a pass from his employer to leave the estate to lodge complaints of ill - treatment or other violations.
* Even if an employee got as far as a magistrate there was the problem of communication since the magistrates spoke no Indian languages and the labourers spoke only Hindi, Tamil or Telegu.
* Further, the magistrates were guilty of serious negligence in not visiting the estates to oversee the conditions of life and labour as required by law.
* The Coolie immigration Agent, later called the Protector of Indian Immigrants, was impotent as the guardian of labourers' interests in view of a multitude of factors ranging from indifference to incapacity.
* Finally, the host government failed to live up to its fundamental responsibility to provide the protection required."

(Pachai, 1979 : 3 - 4)

Pachai further states: "As early as 1861, or just about a year after the first immigrants arrived in November, 1860, the first recorded passive resistance campaign by Indian plantation labourers was waged at Umhlanga, a few miles from Durban. This lasted several months during which the resisters endured three terms of imprisonment and engaged the services of an attorney to petition the Governor to transfer them to another employer. A commission of inquiry found both sides guilty; the government, however, punished only the resisters and condoned the other party, thus setting the model which has endured ever since." (Pachai, 1979 : 7 - 8)

Reports suggest that the first two Indian traders went into business in Natal in 1870, a decade after the docking of the Indian immigrants. The advance of time saw that number increase steadily to the point of hostility based on trade rivalry arising from European traders. Records also indicate that peasant farmers who took to market gardening after concluding their indentures laboured on lands formed by sand deposits and silt that were earlier 'left unoccupied and perfectly unproductive,' and

nevertheless succeeded in producing a harvest and meeting this substantial rent due to their landlord.

However, literature indicates that with the progress of time and urban expansion and industrial zoning, the employment of the Indian in the agricultural area declined. In the sugar industry, Indians now moved from the fields to the mills. Records also indicate that the Indians employed in manufacturing included process workers, supervisors, skilled or semi-skilled workers, artisans and apprentices.

With regard to the Indian women, cultural factors have tended to place constraints on the extent to which they could participate in an economic role outside of the home and family. Typically and traditionally, the women's place is in the home. However, due to the growth in urbanization as well as adopting a more Western way of life, this notion has to a large degree fallen away.

Nonetheless, traditional ideals of femininity associated with domesticity persist. According to Freund, who carried out a study on South African Indian women, labour was not conventionally a part of the familiar definition of the lives of Indian women. Popular representations in South Africa of the Indian woman projected by Indians themselves generally emphasize delicacy and dependency. This kind of Indian model idealises and generalises from the bourgeoisie, which has existed since the earliest Indian settlement in Natal. Prestige resides in an idealised household where the woman's role is domestic and secluded (Freund, 1991 : 1).

While some historians (and contemporary women) may take issue with Freund's views on Indian women, there is some truth in them. No doubt the active involvement of Indian women in South African politics is recorded from at least the 1940's onwards and included a number of them playing central roles in the organization of resistance movements and recruitment, and consequently serving prison sentences. The empowerment of the South African Indian woman is a notion that is gaining momentum, albeit gradually.

There is a large percentage of Indian women who are caught in unfavourable family situations, such as having abusive husbands or having to tolerate an alcoholic husband, and who consider themselves to be incapable of surviving or succeeding on their own. Many are aware of their acute dependency on their husbands and also on his extended partrilineal family. Some psychologists have labelled this state 'learned helplessness,' which is a learned belief that one has no control over the environment.

However, there are also many women whose lives challenge the image of the 'delicate' and 'dependent' Indian woman. While there are Indian women who find themselves incapable of independence, they are just as many who have risen above the adversities and conflicts imposed on them both from within the family structure and from society at large. Evidence of this emerged from this research study, where many women research participants found themselves in positions that required that they take control of their lives for their own survival as well as for their children. These women stood in sharp contrast to those women research participants who were quite content 'to be taken care of'.

The above outline of the brief history of the South African Indian elucidates their shift from an essentially agricultural life to a primarily industrial urban one in the course of little more than a century. Reports indicate that the proportion of Indians found today in manufacturing and commerce is indeed relatively higher than that of any other race group in South Africa. These two domains serve as strong employment arenas for Indians. In addition, with the entry of the Indian woman into the labour market, the figures for Indians in manufacturing and commerce particularly rose, and continues to rise remarkably.

4.3. Local Disease Explanatory Models

In 1960 Kuper carried out an anthropological study of the Indian people in Natal. Of particular significance to this current research into the sociocultural construction of diabetes are Kuper's views on how culture shapes a community's disease profile. She states: "In every society the individual derives his concepts of health from the groups to which he belongs, and while in South Africa it may be true to state that only disease knows no colour bar, it is also true that cultural differences may give the same diseases a wide range of treatment and interpretation, and certain diseases may even be caused-and-cured-by culturally ideological factors in this multi-racial country." (Kuper, 1960 : 236)

Information that was obtained from the research participants in this study with regard to their therapeutic choices seem to be largely unrelated to their Indian culture *per se*. All research participants either sought help from a modern biomedical clinic or a general practitioner. The medication for their diabetes included allopathic tablets and insulin. The majority of the research participants blamed the foods that they eat as the primary causal factor for their diabetes.

However there are a number of other common ailments that are indeed treated by the Indian community using home remedies. The following is a list of some of the most widespread of these disorders and their treatment; as recorded by Kuper in 1960.

a. "Worms, a common affliction of children in Durban, are widely believed to be caused by eating bad food or too many sweets, and the child is given large doses of castor oil, or crushed syringa leaves with water, or a vermifuge bought from a chemist - all medicines to be administered when the moon is new or full, never when it is on the wane.
b. Headache is a 'hot' illness, sometimes treated by massaging the top of the head and forehead with a 'cold' oil - example, castor oil or coconut oil.

c. Coughs, colds and 'fevers' are treated with a wide range of remedies including, a white onion crushed and the juice mixed with honey; ground ginger; patent cough mixtures; special leaves, example, the *tulsi*[45] crushed in water.

d. Dysentery is attributed to 'heat' in the stomach and it must therefore be treated with 'cold' foods - example, grilled green bananas, mango ground with salt, castor oil, and special drinks, example, sour milk, flour mixed with water and a little sugar, wattle bark boiled in water (or ground and eaten), pomegranate skins ground with salt or boiled in water.

e. Styes: the Hindi belief is that styes result from a person breaking a wasp's nest, or seeing or touching something 'unclean'. Some people are especially skilled in treating styes - they rub a gold ring on the stye seven times repeating after each application 'wasp - sore be destroyed'. Another well-known treatment is to take seven mango leaves and touch the spot seven times with the milky end. The leaves are then left to dry and as they dry so will the sore.

f. Boils are divided into 'blind boils' and 'blood boils'. The blood boil, which is especially painful, is believed to be acquired only by the rich. Treatment is directed to making the boil open on its own and various poultices are used.

g. A stiff neck is said to be cured by someone giving a sharp tug to the hair growing from the exact crown of the head which sharp upward action 'breaks the stiff neck off'. Similar treatment is applied if the uvula (small tongue) is considered to be elongated in illness."

(Kuper, 1960 : 249 - 251)

The treatment of ailments with home remedies has to an extent an association with elders that live within that household. There is a notable tendency amongst the Indian community to still practise patrilocal forms of post-marital residence. This results in grown children, particularly the sons, living with their parents. As a consequence, in many instances, ailments such as those mentioned are treated by the paternal grandparents. Kuper (1960), describes the Indian family type as being distinct from that of other racial groups in South Africa in that there seems to be a great strength in

[45] A great devotee in the form of a plant, who is very dear to Lord Krishna the Supreme Personality of Godhead.

joint family ties.

According to sociologist Meer: "Though Durban Indians are wholly integrated into the highly cosmopolitan urban economy, many of their attitudes and patterns of social life continue to be characteristically rural, and to that extent traditional. This is most conspicuous in their religious ceremonials and in the network of relations which prevail in the family. The family pattern described here is representative of the entire Indian community, holding true for the component religious and language groups" (Meer, 1969 : 64). Kinship ties among the Indian community are very rarely severed. Even when a Indian male lives away from his parents, he will if possible stay with kin or friends. Traditionally and still today, most Indians do not condone Indian females living on their own, and such action is often viewed as a sign of loose morals. Indian widows are also encouraged to live with family and relatives. However, the impact of Westernization and urbanisation has weakened the Indian joint family system. As a result, there is a gradual shift towards greater independence and freedom within the Indian community in general.

An attempt was made in this research to determine the extent to which research participants tried to educate others, particularly their children, about such lifestyle and dietary practices that may act contribute towards the onset of diabetes. The following is a sample of some replies to this question:

Research Participant A:

A: No I do not warn them but we do talk about it. They say they do not want to be like me, 'diabetic'.

Research Participant B:

A: Yes I do tell them! I keep telling them that they shouldn't eat this or that or even when it comes to fries, we don't buy a lot of chips and chocolates. We do give them, but it is limited, not like what we used to eat in those days.

Research Participant C:

A: We don't cook oily food, my daughter-in-law cooks so nicely. We eat cakes now and then, not always.

Research Participant D:

A: I make mealie meal *roti* for my husband and children because they don't like *parathas*[46] because you got to put all that *ghee*. They don't even eat *puri*[47] or *bhajias*[48] because it has to be made in oil. They are very fussy so I don't make those things. They love their salads! My son always tells me to control my sugar too.

Research Participant E:

A: My son buys me low-fat milk. Most of the time I have sterilized milk.

Research Participant F:

A: Yes I do! I would quite often tell them, you know what, don't have too much of this and don't have too much of that. It's a big joke for them now because there's nothing wrong with them you see. I said, listen, I'm not hoping for this, no parent will hope for their children to get sick but be conscious and be aware of what you eat. They are aware of the family history of diabetes and to tell you the truth, my two girls don't take sugar at all in their tea. Like my daughter now, being a dental therapist, she knows quite a bit about health and the types of food she should eat.

Research Participant G:

A: I tell you this young fellow of mine, he likes a lot of sweet things. I say to him, you must be careful because when I was pregnant with you I was diabetic. When he was born too, I was diabetic. My daughter, she doesn't take no sugar in her tea. Maybe she was thinking too, because my mummy is diabetic, I just might as well cut down on my sugar.

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[46] Parathas are simply another name for roti or chapati which was defined earlier.
[47] A small deep-fried flat bread made from white flour, whole-wheat flour, or a mixture of both.
[48] Deep-fried chilli bites or spiced flour or lentil fritters in all their varieties.

Research Participant H:

A: They know, they know! They still healthy so what? But, they know that when I go to hospital it's because of my sugar. But fortunately for them at the present moment, they all are well.

Research Participant I:

A: Like my children don't like rice so much. They like bread.

Research Participant J:

A: I have lots of problems with my children, not only one child but all are the same. That is why I feel I have all these sicknesses.

Research Participant K:

A: If I make boiled foods for myself, they enjoy it and have it with me.

Research Participant L:

A: I tell you, my granddaughter is fourteen and she's worrying to become a vegetarian. There is so much of meat at home and it becomes a pain to have one vegetarian and so we leave her to make her own.

Research Participant M:

A: My son if you see him, he's as thin as a rake and he's got cholesterol. It was so high that the doctor was shocked that he was walking. He likes his butter! I can't stop him from having his butter. But I put him on a very, very strict diet. I used to give him all the steamed things and brown bread. I never gave him anything else for about six months and so I brought it right down. It's okay now!

Research Participant N:

A: When my son can drive me, we go swimming!

Research Participant O:

A: They are conscious, they are very conscious of what they eat.

Research Participant P:

A: I'm a vegetarian now for thirty years! We[49] don't eat rice everyday, sometimes we eat.

Research Participant Q:

A: We don't use a lot of oil and then we use only this olive oil. My son is a vegetarian and he's very particular. I don't want him to suffer from cholesterol because it's part of the family health history so you see we don't have fries. My daughter never liked sweets, she prefers fruits.

Research Participant R:

A: My children are conscious of what they eat. My one son was a vegetarian. They avoid eating so many things especially the grandchildren. My son and daughter goes to the gym.

Research Participant S:

A: Childless.

Research Participant T:

A: My children are much conscious of what they eat. I always warn them and through us they have become more conscious about these things.

Research Participant U:

A: No my children are not conscious of what they eat. They eat everything and anything. But now only the small fellow is now conscious because his clothes are getting tight. He told me that I must buy mixed vegetables. He's going to have mixed vegetables and macaroni and that I must also buy gem squash.

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[49] The "we" that research participant P, is referring to is her widowed daughter, with whom she now lives.

Research Participant V:

A: Yes, I've made them very conscious. At the moment I'm not cooking with oil. My son is very health conscious so he put us on diet. Not really a diet but more of an awareness of what we eat. So, he does it and we follow it up!

Research Participant W:

A: My daughter put on a lot of weight and she's now going to the gym.

Research Participant X:

A: I'm at them about their eating habits because of knowing how to eat properly. But they do not prefer to eat vegetables. Not that they like their meat because my daughter does not eat red meat at all. She eats chicken fillets and she prefers it skinless. My son has eczema so I have to be careful with him.

Research Participant Y:

A: Well they have a lot of vegetables prepared the western style. Also macaroni and cheese and baked stuff.

Two research participants stated without reservation that they make no attempt to caution their children concerning the importance of maintaining a healthy lifestyle and a greater consciousness regarding the diet and food beliefs. Six of the research participants firmly stated that they did in fact build a mindfulness in the children with regard to their diet, lifestyle and food beliefs. Research participant S, was the only research participant without children. The remainder of the research participants, constituting sixty-four percent, either suggested that their children were self-conscious about what they ate, or gave an explanation that was pertinent or not necessarily related to the question that was put forward to them.

4.4. Health and Exercise

Brooks, a European-trained educator and nutritionist, states: "Our ancestors, if they were alive today, would surely be amused to see grown men and women running round and round on a track, pedalling stationary bicycles, or doing calisthenics and deep breathing in front of television sets" (Brooks, 1990 : XIII). Brooks is of the belief that our ancestors who were probably hunters and gatherers certainly did not consciously 'exercise,' and were possibly not aware of the word as we use it today. Our ancestors did not join health clubs, take vitamin pills or go on prescribed diets. Nor did they do sit-ups, lift weights, or run around in circles on a track. They did not need to engage in those practices. Their survival included being constantly on the move-crawling under branches, climbing over rocks, lifting, pulling, bending, walking miles and miles each day. Essentially they were absorbed in just living their lives. Brooks further asserts that while it is *convenient* to blame aches and pains on the ageing process and treat physical disabilities and liabilities as being due to genetic predisposition, should the question of our sedentary existence not be brought to the fore? Brooks raises the following significant point: "Most of us have simply gotten lazy; riding in cars instead of walking, using machines instead of our bodies, sitting long hours behind desks and steering wheels and in front of television sets. The exercise involved in gathering food is often no more than the exercise we get pushing a shopping cart down the aisle of the grocery store. Heating our homes, which once required the cutting of wood, is now accomplished by moving a tiny lever on the thermostat." (Brooks, 1990 : 2)

Brooks suggests that for the body to perform rhythmically, it requires the stimulation of two distinctly different kinds of movement - endurance and stretching. Endurance movements are required to build stamina and to increase one's oxygen intake and the capacity to use that oxygen. Therefore, movements such as walking, running, bicycling and swimming for extended distances, help fortify the heart and respiratory system.

Brooks states that stretching movements assist in keeping the body supple and limber, being able to bend, twist, squat, and move with ease. These movements also prevent stiffness as well as muscular discomfort and aid in keeping the spine flexible and healthy. Brooks proposes the following three stretching techniques which he labels as the 'magic three' and further suggests that the exercise should be done twice daily and takes only up to five to six minutes:

1. "Yawning

Yawning may well be the most natural of all exercises. The impulse to yawn should never be suppressed. A yawn is essentially an internal stretch of the lungs, accompanied by a stretching of the jaw, the throat, and all the muscles of the face. This spontaneous stretching relieves strain in the eyes, brows, cheeks, and lips. As a result, we are more relaxed and mental tension is relieved. This is important because tension causes stiffness, pain, and impaired movement. When we yawn, sluggish blood is squeezed out of the tissue and is replaced by fresh blood resulting from the internal stretching of the lungs. In short, yawning makes us feel better, more supple, and more energized.

2. The Butterfly

a. Stand with good posture. Clasp your hands behind your neck, lacing your fingers.
b. Inhale slowly through your nose, at the same time pulling your elbows back as far as you can, like the wings of a butterfly opening to the morning sun.
c. Now bend slowly forward, exhaling through your nose, bending your elbows, and bringing your chin to your chest. You are a butterfly with folded wings.
d. Begin inhaling again, pulling your elbows open and back until your butterfly wings are fully spread.
e. Repeat twelve times, breathing slowly through your nose, expanding and contracting your chest with each inhalation and exhalation.

This stretching technique brings fresh blood to the heart and lungs, gets out kinks and cricks from sleep, blows away emotional cobwebs, and breathes new life into tired bodies and minds.

3. Rocking and Rolling

a. Lie on your back on a soft, well-cushioned mat. Raise your knees to your chest and rock gently back and forth. Breathe through your nose. Rock ten to twelve times.

b. With your knees to your chest, start gently rolling side to side. Use your momentum to help push you off the mat and back toward the opposite side. Rock ten to twelve times.

c. For best results, rock and roll twice a day."

(Brooks, 1990 : 5 - 7)

Carroll (a general practitioner and medical writer) and Smith (deputy editor of the British Medical Journal and medical correspondent for The Times) are great advocates of the benefits and inclusion of exercise in one's life. They expound that: "Having an exercise routine as a regular feature of your normal day-to-day lifestyle is probably the most positive step you can take to keep yourself fitter and healthier over the years ahead. Your heart, lungs, circulation, muscles, bones, joints, and even your state of mind will all benefit from undertaking frequent physical activity. Exercise brings about both short and long-term benefits, it improves the overall efficiency of your body, and helps to fight off disease" (Carroll & Smith, 1992 : 112). Carroll and Smith assert that *Exercise is for Everyone*. Whether or not one is young or old, male or female, in good health or suffering from some chronic medical ailment, Carroll and Smith declare that one's health would profit from some form of regular exercise. They explain that although the physical and psychological benefits of exercise are widely known, there are still are large proportion of people whose health, fitness, and peace of mind are being threatened simply because they do not engage in regular exercise.

Carroll and Smith believe that lazy, inactive children are more than likely to grow up into lazy, inactive adults who are as a result both overweight and unhealthy. Consequently, it is essential that children learn to associate physical activity with having fun. A child who is occupied in regular exercise benefits in several ways. Carroll and Smith state that children require exercise to develop strong, healthy bones and muscles, to maximize the effectiveness of their heart and lungs, and to improve their flexibility, co-ordination, balance and speed.

Of particular interest was the point that Carroll and Smith make about exercise reducing the natural stiffening associated with the ageing of muscles and joints, since a large number of the research participants do fall into the elderly bracket. In addition, they believe that there is sufficient credible evidence to suggest that frequent exercise is the *best preventive medicine available*. They reiterate that one may keep one's body in good physical condition by engaging in some form of frequent exercise which in turn would assist in maintaining the normal functioning of joints, bones, muscles, tendons, and ligaments well into old age.

These authors propose that the best way to include exercise as part of your every-day lifestyle is to select activities that would fit readily into one's daily routine. The following are several examples of how do just that:

* "Rather than driving or taking the bus to the local shops, walk or cycle there.
* If you use public transport, get off the bus a couple stops from your house and walk the rest of the way home.
* If you have a dog, increasing the length of your daily walks is a good way of providing more exercise for both of you.
* Climbing the stairs, rather than taking the lift, is an excellent exercise because it works your heart, lungs, and muscles."

(Carroll and Smith, 1992 : 135)

Carroll and Smith believe that one should avoid exercise when one has the following symptoms: Chesty cough, sore throat, fever, swollen glands, cold sore, painful urination or genital discharge. For persons with diabetes, they assert that any sport should be perfectly safe. However, they do suggest that the diabetic inform the persons that they are exercising with of their condition in the event that the diabetic suffers a sudden 'hypo' (a drop in the blood sugar level). In addition, they propose that the diabetic should increase his or her intake of carbohydrates before exercising and should therefore carry a supply of sugar or sweets.

Eat Better Live Better, was a book that was published in consultation with a number of South African general practitioners, specialist lecturers in the health field and senior dieticians and was written specifically for South Africans. The central theme of the book is that health does not come out of a doctor's prescription for a bottle of pills. Rather, it comes from sensible living and eating habits. The general echo of the consultants is that the doctor's concern is disease and that our concern should be health. The various South African experts that were consulted for this book, also draw upon the life of our ancestors. Where they used to walk to work, we either drive or ride the bus. They laboured in the garden and we now drive weekly to the supermarket. They danced and played sports for entertainment and we watch television. The experts also claim that due to a number of modern conveniences, we are deprived of natural opportunities to use our bodies. This includes the following:

* "We prefer vacuum cleaners to brooms and mops.
* The use of lifts and escalators in preference to stairs.
* Using golf carts to legs.
* A host of electric gadgets that save time and reduce physical effort.
* Gas, electric and paraffin heating has eliminated the need to chop wood or shovel coal.
* We need not even exert ourselves by getting up to switch the channels on the television set - that we can simply do by the use of a remote control.

As a result, the South African experts contend that we do not burn up sufficient kilo joules."

(O' Hagan Ed., 1987 : 290)

The following is an outline of the benefits of exercise as suggested by the various experts consulted for the book Eat Better Live Better:

* "Studies show that exercisers pay half as much in medical bills each year as non-exercisers do and have only one - third the number of sick days off work.
* Exercise enables your cardiorespiratory system to function more efficiently as your lungs take in more air and deliver more oxygen to the tissues, and as your heart pumps more blood with each contraction and delivers more oxygen to your muscles.

* Regular aerobic training lowers blood pressure, reducing the chances of having a stroke.
* Exercise increases muscle strength.
* If you are under stress or if you suffer from insomnia, exercise can help bring relief.
* Many researchers are sure that regular exercise slows most symptoms of ageing, such as fat accumulation, weakened muscles, and a reduction in balance, flexibility, agility and reaction time.
* Doctors now prescribe exercise as a way for combating certain types of depression.
* Exercise will certainly make you look and feel better - an irresistible appeal to your vanity and a compelling argument in favour of exercise."

(O' Hagan Ed., 1987 : 290)

Many of the above points were cited by both Brooks and Carroll and Smith. They were nevertheless included once more to demonstrate the importance of exercise in one's lifestyle. An interesting assertion by the experts consulted for Eat Better Live Better, was that physiologist's report that:

* "Vacuuming or mopping the floor uses up approximately the same number of kilo joules per hour as gymnastics or playing croquet.
* Pushing a lawn mower or cleaning windows is about equal in effort to playing volleyball or badminton.
* Light carpentry, housepainting, gardening or leaf-raking gives one the same benefits as tennis.
* The more strenuous wood-chopping is about the same as swimming .
* Stair-climbing is among the most vigorous of home activities, as its equivalent ranges from jogging to running.
* Even the seemingly effortless walk downstairs may be compared to leisurely skating."

(O' Hagan Ed., 1987 : 320)

A further significant point made by the expert contributors to Eat Better Live Better, is in regard to our children. They claim that studies indicate that the majority of South African youngsters lack sufficient flexibility, muscular strength and cardiorespiratory endurance. A proportion of blame can be placed on television and video games which are drawing an ever-increasing number of South African children away from the playground and the sports fields. The experts advocate that children should be given good opportunities to play games and sports as well as to be included in sharing house and garden work. My personal experience is that the crime-filled environment that exists generally in South African society today, has resulted in parents becoming hyper-conscious and paranoid about the dangers that lurk outside the safe walls of the homes. As a result South African children are allowed very limited opportunities to exercise or explore.

The following are suggestions for keeping the children fit and active by the experts consulted for Eat Better Live Better:

* "Only ten to fifteen minutes a day of rope-skipping, trampolining, raking or sweeping provides adequate aerobic fitness. As much as possible, parents ought to participate, not merely supervise.
* Weekends are the best time for family fitness activities. Playing with a ball or frisbee, taking short hikes and doing simple calisthenics are all within easy reach.
* Small children like grown-up tasks. Parents should assign and supervise some household chores to children as their hidden exercises.

The experts also assert that lethargic children grow up to be flabby adults, but active ones carry over to their maturity the quick reflexes, balance, co-ordination and grace acquired in the early years. It is never too soon to exercise!"
(O' Hagan Ed., 1987 : 321)

Bortz II, one of America's most respected and acclaimed authorities on ageing poses the following question: Does Exercise Extend Life? Bortz states that, "the answer to such a question is far from simple. When Charles Goodrick, of the National Institute on Ageing, took a group of laboratory rats and allowed them *at libitum* exercise, they outlived their sedentary mates by fifteen percent. Ralph Paffenbarger, another Stanford colleague and outstanding ultramarathoner, is the principal

researcher in an ongoing study of 16, 936 Harvard alumni men, aged thirty-seven to seventy-six, which is examining the effects of exercise on longevity in humans. In the March 6, 1986, issue of the *Journal of the American Medical Association* he reported that those graduates who spent over two thousand calories per week in active activity could be expected to live two point one five years longer than those without this exertion. Thus, it appears that for every hour spent exercising, two to three hours of life were gained. The benefits were most apparent after the age of seventy" (Bortz II, 1992 : 221).

Bortz makes a fundamental point in: "Medical science is a wonderful social tool for good, but it is ineffective when the damage has already been done. Health starts at home" (Bortz II, 1992 : 81).

According to new medical research results reported in the Copenhagen newspaper-Berlingske Tidendean (May 21, 2001)[50], it is stated that: "Research shows, exercise can replace insulin for elderly diabetics. Most older people with so-called Type II Diabetes could stop taking insulin if they would do brisk exercise for thirty minutes just three times a week. Results from tests conducted on diabetics at the Copenhagen central hospital Rigshospitalet's Centre for Muscle Research showed that physical exercise can boost the body's ability to utilise insulin by thirty per cent. This is equal to the effect most elderly diabetics get from their insulin medication today."

The newspaper reported that: "Researchers had a group of non-diabetic men and a group of men with Type II, all more than sixty years of age, exercise on bicycles six times a week for three months. After the three months the doctors measured how much sugar the test subjects muscles could utilise as a measure for how well their insulin worked. Associate Professor Dr. Flemming Dela of the Muscle Research Centre said the tests demonstrated that the exercising diabetics had just as high a rate of insulin utilisation as the healthy non-exercising persons. This means that the insulin works just as well for both groups."

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[50] I heard this piece of information on a local radio station news bulletin. Upon request via the telephone, the head of the news department kindly faxed me the entire content of the article.

Dela was further quoted as saying that "physical exercise is not a cure for people with diabetes but it can eliminate almost all their symptoms. At the same time it can put off the point at which they have to begin taking insulin or perhaps completely avoid insulin treatment. Insulin is a hormone produced by pancreas, controlling sugar in the body and used against diabetes."

Dela said that to achieve the desired effect diabetics need only exercise to the point where they begin to work up a sweat, but that the activity has to be maintained since it wears off after five days with sufficient exercise. Dela added that most diabetics realise that they have to watch their diet, while remaining unaware of the importance of exercise.

CHAPTER FIVE

FOOD HABITS AND BELIEFS

5.1. Overview

Dennis Burkitt, author of a book entitled Diseases of Affluence, states the following: "Whereas inadequate nutrition was to a large extent to blame for high mortality rates from infective diseases in the past, it is faulty and often excessive nutrition that appears to be responsible for many of the diseases characteristic of modern western culture commonly and collectively referred to as Western diseases" (Burkitt, 1982 : 2). Moreover, the western diseases that are believed to be closely related to diet include: "major maladies as coronary heart disease (CHD) now the commonest cause of death in affluent western societies; diverticular disease of the colon (DD) present, though usually symptomless, in about one - third of the population over the age of 60; large bowel cancer, the next commonest cause of cancer death after lung tumours related to smoking; gallstones, the commonest cause for abdominal surgery; appendicitis, varicose veins, obesity, diabetes, and hiatus hernia. All these diseases have been related to the diets which are characteristic of economically more developed countries. These have a low content of starch and fibre and a high content of fat and sugar." (Burkitt, 1982 : 2)

Questions put to research participants about their dietary practices solicited many interesting responses. It was clear that the food choices were made within a deeply embedded system of beliefs regarding food and culture. In response to a question on what the participants ate as children, the following answers were given:

Research Participant A:

A: We used to cook rice, mealie rice, bread, anything we used to eat. Whatever they prepared we used to eat.

Q: Were any foods cooked regularly?

A: Mealie rice, *dhal*[51] and green vegetables.

Q: Did you'll not eat any meat?

A: Yes, but once a week.

Q: What meat was it?

A: Mutton, chicken, fish, whatever they got they used to cook. We used to eat rice only once a week. You didn't get that time a lot of rice. We used to have *roti*[52] but only once a week. For breakfast we used to have butter bread, bread jam and tea.

Research Participant B:

A: A lot of junk food! We used to go out a lot and I never used to worry what I'm eating, anything and rice everyday!

Q: Every single day?

A: Yes every single day! My mother used to cook rice because it was a big family and they couldn't afford basically you could say. We were really poor! It was rice and curries but it never used to be so much of bread. Every single day it was rice.

Q: What curries did you'll usually eat?

A: Potato, *dhal* or once a week it will be mutton or chicken but once a week.

Q: What did you'll eat on the other days?

A: Vegetables and now and then meat in between. Weekends it used to be meat. We had fish as well but not so often.

Q: And for breakfast?

A: Breakfast? My dad used to buy pork and Sundays we used to have the best breakfast! For the rest of the days we used to just have fried eggs with bread or just cheese sandwiches. That's schooldays or whatever leftover curries from the evening we used to eat for breakfast.

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[51] Husked and spilt lentils used to make savories, sweets and soups; the soup made from such lentils.
[52] Unleavened Indian type bread, also known as chapatis.

Q: You'll used to eat pork?

A: Those days the old people used to eat it but as the years were going by we really cut it out. My father was very sickly and you know the belief was that when you eat pork like if anybody did black magic it used to wipe it out. That was the old peoples belief! But as were growing up we stopped pork and bacon.

Research Participant C:

A: That time we were very poor, what we used to get we used to eat.

Q: But was there a meal that was eaten often?

A: Like our Indian foods, like rice, fries like potatoes and handmade bread.

Q: *Roti*?

A: Yes! Like that one was our food.

Q: What was the roti eaten with?

A: Any curry, vegetable, like weekends fish and mealie meal *roti* was nice. Rice we were growing in the garden. We used to work in the garden and plant the rice. My father and mother also grew vegetables and used to send it to the market but like rice we shouldn't send to the market.

Research Participant D:

A: We had the normal food. Indian curry! Curry and rice and sometimes jam bread and all these things. We used to get food. That I won't speak lies. Meat and all. Chicken, vegetables everything. She[53] used to give us?

Q: Did you get your three meals for the day?

A: Well, sometimes when we were punished, we don't get our supper too you know.

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[53] She, refers to the research participant's paternal aunt who took care of her when her father died and mother disappeared.

Research Participant E:

A: We used to have fresh vegetables from the garden. My mother was doing farming. We used to cut from the garden and cook the same time and eat. We used to eat all fresh vegetables and we used to buy a lot of meat because that time it was very cheap.

Q: What about chicken?

A: I don't remember chicken so much.

Q: Fish?

A: Yes fish we used to eat a lot. Lot of fish, lot of fresh vegetables from the garden. I can tell you every vegetable we had. My grandfather was a farmer so my mother became a farmer.

Research Participant F:

A: It was to a large extent balanced. I used to love sweets. Lots of sweets and I hardly used to eat food. I used to always squeal to eat and whatever I ate, if it was you know a *roti*, half of that. I never ate rice.

Research Participant G:

A: We had everything but mostly we used to cook vegetables. But once a week we used to have chicken and all that only on the weekends. In between maybe sometimes mutton curry.

Research Participant H:

A: Well you know at that time it's rice and bread every day.

Q: Every day?

A: Yes it's either hand-made bread or it's rice. Rice was our staple food and with curry as well. My mother used to cook all types. We never just used to live on meat or chicken.

Q: It was a combination?

A: Combination yes! Maybe meat or chicken once a week but the balance all you know vegetables.

Q: Was it fresh vegetables?

A: Yes those days we used to get it from the garden. Those days they used to have farms not artificially grown!

Q: What did you'll have for breakfast?

A: We used to have cereals but mostly mealie meal porridge, that was our favourite and maybe oats. But we couldn't go for you know the very expensive type of cereals.

Research Participant I:

A: I should eat everything!

Q: Was there any foods that you ate frequently?

A: Rice, curry, fish, chicken and I like vegetables too.

Q: How often did you eat rice?

A: Everyday!

Q: Was that for both lunch and dinner?

A: Yes!

Q: And for breakfast?

A: Bread!

Q: Was it white or brown bread?

A: White!

Research Participant J:

A: A lot of rice definitely and oily food as well!

Research Participant K:

A: Times were so difficult at that time. Home-made bread, we ate rice but not so much, we ate more hand-made bread.

Q: What did you eat with it?

A: We ate curries but very little meat.

Q: So it was mostly vegetables?

A: Yes!

Q: Was it fresh vegetables?

A: Yes!

Q: From the garden?

A: All types of vegetables from the garden.

Research Participant L:

A: Mostly curries and just ordinary Indian food.

Q: Was there any foods that you ate a lot of?

A: *Dhal*! That was a meal that we used to eat everyday. We were very poor you know, nine children and my mother and father. We couldn't afford, my father used to earn two ponds a month. We used to have good vegetables but there must be *dhal*.

Q: Every day?

A: Every day!

Q: What did you'll eat it with?

A: Rice and partly bread, but mostly rice.

Q: And for breakfast?

A: We used to have mealie meal porridge!

Research Participant M:

A: Everything! We ate everything. We grew our own chicken, we had sheep, we had cattle, we had goats but we never ate cattle and all that, just sheep. We grew up very healthy. Believe me I never ever got sick one day. I didn't know what a doctor was in my twenty years of life! But when I got married, life changed too much. We had a very healthy life, all of us, the whole eight of us were very healthy and I think we had too much of exercise, no time to waste!

Q: What did you'll have for breakfast?

A: We used to have very healthy breakfasts. Like mummy used to always believe in *roti* because bread was very hard to get as no shops were close by. We used to make our normal *roti*. We didn't have cereals because those days there weren't. But, mealie meal porridge was a must and we had our fresh milk from the cow.

Q: How often did you'll eat rice?

A: Rice was not that favourite in my family. We had mealie rice. Rice wasn't a favourite. Like salads and all we didn't believe in making salads because we had so

much carrots and lettuce and the whole day we were chewing cabbage and carrots. Whenever we go to the farm, you like something, we just pick it out and we wash it and eat it. It was a very, very healthy life!

Research Participant N:

A: I think my mother was very particular with oil. We ate all foods, boiled, cooked and so forth.

Research Participant O:

A: Well, we were a well-off family! We used to eat everything. Our family was well off you know, so we used to have rich foods.

Q: So you had rich foods often?

A: Yes we used to but not too oily but we used to eat well.

Q: Was there any food that was eaten frequently?

A: I'm not aware but sweet things and all we were very fond of. We had the factory you know, manufacturing sweets! So maybe we used to eat that but not to say we used to live on it.

Q: But did you'll have excessive amounts?

A: Yes, we used to eat!

Research Participant P:

A: We used to have hand made *roti*. We shouldn't buy bread that time. We used to eat *roti*. My mother used to make *roti*.

Q: And rice?

A: Yes we used to eat a lot of rice everyday!

Q: White or brown rice?

A: Brown rice!

Q: What did you'll have with the rice?

A: *Dhal* or curry!

Q: Was it vegetable or chicken...?

A: We used to eat flesh before, mutton and chicken.

Q: How often did you'll have mutton and chicken?

A: We used to eat two times a week and rice we used to have for lunch and supper. We used to eat *roti* for breakfast and sometimes, once a week or two times a week we used to have mealie meal porridge.

Research participant Q:

A: I used to eat everything and anything. Lots of vegetables. Meat we only used to eat weekends. Meat and chicken. We used to have a lot of tortoise and sheep's head. Pietermaritzburg[54] was noted for that! I don't know why that was a craze. Mutton was only once a week. Vegetables was from our garden. My mum concentrated on gardening after she left work and used to send the vegetables to the market.

Research Participant R:

A: Here and there we used to have rice, not to say no bread and normal food. But we never really ate dried beans and things like that. My granny will always say this, children's stomachs will get upset, mustn't give them a lot of dried beans and things and of course meat wasn't like today, really it was mostly vegetables that we used to eat. Only weekends I suppose we will have the meat and only one or two days in the week. Mostly vegetables!

Research Participant S:

A: We ate all kinds of foods! Meat and vegetables, everything.

Q: Was there any foods that you'll ate a lot of?

A: No! We were more like on the vegetable side because our parents were farmers.

Q: Both of them?

A: Yes!

Q: Where did they farm?

A: All over, where they could get land and then we had our own place too. All kinds of vegetables.

Q: What did you'll usually have for breakfast?

A: Oh breakfast was also a variety but more of bread. We went for white bread.

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[54] A town that has a large Indian population and lies to the West of Durban with a distance of 77km.

Research Participant T:

A: The normal Indian food!

Q: But were there any foods that you'll ate more frequently?

A: I think a little of everything. But the normal meals we used to have like breakfast in the morning but when you go to school you don't have breakfast and thing you have your cereal porridge. Like you know in the afternoon we used to have curry and rice. It used to come to the school you know. Those days they used to send the food to the school. Then we used to have our food in the afternoon and curry and bread in the evening.

Q: And rice?

A: Nearly everyday!

Q: So you ate a combination of both meat and vegetables?

A: Yes!

Research Participant U:

A: Okay, most of what we should cook at home is a lot of chicken and a lot of meat because where we should stay, it was like a farm. The only vegetables what you can get is cabbage, cauliflower, green beans and peas. You don't get any herbs, Indian groceries and occasionally you get *dhal*. My father loved his meat and we had to cook it for him every day. Whether it's fasting or not fasting, we had to cook it for him. Everyday! Even if you fry fish, we make *dhal* or there must be some boiled egg chutney.

Q: Seven days a week?

A: Yes!

Q: What did breakfast consist of?

A: Okay, my father should get a five star breakfast. Everyday his breakfast is toast or cheese or scramble egg or boiled egg sandwich or polony. He wants his breakfast and he eats his lunch also. He'll eat like this and he wants his good food.

Q: How often did you'll eat rice?

A: Okay, rice if we cook, twice in the week or something like that. Every Sunday is rice. My father loved his *roti*. There was *roti* everyday! You know, those times

we used to make with only pure butter *ghee*[55]. We should boil our own.

Research Participant V:

A: We were from a very poor family so we didn't get the luxuries to eat. Those days it was just staple mealie rice, *dhal* and the things that we know. No canned things just cooked things, like herbs from the garden.

Q: What about meat and chicken?

A: We used to eat meat once a week. Chicken most probably once a week also.

Q: And breakfast?

A: Bread and butter!

Research Participant W:

A: Both meat and vegetables.

Q: Were there foods that you'll ate a lot of?

A: No!

Q: How often did you'll eat rice?

A: We used to eat rice everyday!

Q: And *roti*?

A: Yes *roti* too was everyday!

Q: Together with the rice?

A: We used to have very rich foods that time, you know how it was. *Roti* and all that, what we knew later what was going to happen, you know what I mean!

Q: Was the food oily?

A: Yes!

Q: It was?

A: Yes!

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[55] This is clarified butter.

Research Participant X:

A: I can't remember that but you know what, my father liked meat! I know my mother cooked rice everyday.

Q: Did you'll have vegetables?

A: Yes! But the cooking of the vegetables, you know how Indians cook, we kill it!

Research Participant Y:

A: Rice and curry!

Q: Everyday?

A: Everyday!

Q: What curries?

A: I know on Wednesdays we used to eat fish. Those days it used to be middle cut and tomatoes.

Q: Canned fish?

A: Canned! Other days, twice a week we used to eat meat, mutton and chicken and things like that but otherwise vegetables.

Q: Was the vegetables from the garden?

A: Fresh vegetables from the garden.

Q: Can you remember if the food was especially oily or salty?

A: Well things were cheap and the food was oily!

Q: It was?

A: It used to be oily!

Every research participant stated that curry and rice was routinely consumed. Whilst some ate rice occasionally, due to meagre conditions that prevailed in the household, other research participants ingested rice on a daily basis. Only an average number of research participants confirmed eating fresh vegetables direct from the garden which was maintained either by one parent or both. Then there were research participants that revealed having oily and rich foods as well as lots of sweets. Many confessed simply to consuming *normal Indian foods*.

The obvious question then is: What constitutes *normal Indian food?* Generally, to many if not most people, Indian food simply means just curry. The responses received from the research participants to the question of what they remembered eating as children, verifies to the common notion of Indian food just being curry, with the only variation being in the main ingredient. Zuleikha Mayat, a renowned South African author of Indian recipe books, asserts that: "for Durban at least, it would be true to say that the curry and rice is a National Dish" (Mayat, 1978 : 14).

Indian cuisine has been known to be described as a story of geography and of religion. The link to geography lies in the fact that the primary culinary divisions are between north Indian cuisine and south Indian cuisine. The tie between religion and cooking is that customarily,[56] Hindus are forbidden by religion to eat beef and pork, and for the Moslems only pork is refused. Amongst the Hindus, they are many who are strict vegetarians. Research participant D, P and Q stated that they were vegetarians.

Indian culture is marked by the celebration of festivals, family weddings and births. These occasions are punctuated by the preparation of special dishes and an abundance of sweets which are usually extraordinarily rich in taste. Research participant T, discloses such an experience: "Our eating habits are in our genes. No matter, you can break your head, I don't think it will ever change in another thousand years. It won't change, it will go on!"

Research participant T, goes on to describe a festival which is celebrated by Moslems called *Id - ul - Fitr* (known also as *Eid*). This festival is the celebration of the culmination of the *Ramadhan* fast. Throughout the fasting period, Moslems eat only before sunrise and after sundown. Between dawn and sunset, they are forbidden to eat, drink, smoke or indulge in sinful thoughts. This festival is considered to be the most joyous of all.

[56] Research participant B, who is a Tamil speaking Hindu, confessed to eating pork.

The effects of these celebrations on dietary patterns is encapsulated in a statement by research participant T: "You see, my sugar is under control, but at Eid time, or even Christmas time or something, or if there is a function in the house, my sugar level goes high. All those goodies are made and there and everybody is eating it. You join them and you eat a bit of this and a bit of that and a bit goes to one big lot that affects your body. It happens! Like the whole year, my sugar is under control, it's below ten. But the moment I know Eid is coming, although I keep all my fast and I manage, but after Eid, I check my sugar, it is twelve, thirteen or fourteen. Because you see, you say, only this week and after that I won't touch it. That's nature! That is why I say its in our genes."

Since Mayat is a South African, it is appropriate in terms of relevancy to this research study to examine the ingredients of the recipes in her cookery book. For example, a recipe for Cornish Chicken or Pigeon *Biryani*[57]
(serves eight people) requires the following ingredients:
"4 pigeons or cornish chickens
1 doz baby carrots
1 doz baby potatoes
2 cups rice
1 cup oil
a range of spices too numerous to mention and,
a further...
4 tbsp ghee"
(Mayat, 1987 : 28).

[57] A dish cooked with rice, accompanied by meat/fish etc...,cooked in one pot but each ingeniously kept separate in layers.

Another illustrative recipe is for Pasinda-e-Khaas. The ingredients for this dish are as follows:

"1kg mutton (leg or shoulder)

½ cup oil

and the vast number of spices"

(Mayat, 1987 : 89).

The final recipe that emphasises the point about excessive oil content is for Chana Dhal (gram lentils) curry. This dish could be prepared with cuts of either mutton or chicken:

"1tsp ginger/garlic

and a further host of spices, plus

¼ cup ghee/oil"

(Mayat, 1987 ; 111).

5.2. The Significance of Diet

While it is important to note that generally the basic curry would require around two tablespoons of oil, there is also a great tendency amongst the Indian community to use larger quantities, as shown in the above three recipes. In some instances additional oil is even used. These are the words of research participant E: "I like extra oil, I do not salt but put extra oil." Research participant E, also experienced a high sugar level of twenty-nine, and although on medication, has great difficulty in controlling her blood sugar levels.

A common adage is, 'We are what we eat'. However, medical doctors Bennett *et al* state: "It would be more accurate to say, 'we eat what we are.' That is, we use the food we eat to express all kinds of things about ourselves. Fears about food and strong commitments to certain types of diet often reflect social beliefs or psychological issues, which are translated into the symbolism of food and nutrition."

(Bennett *et al*, 1987 : 56)

According to these doctors who all lecture in medicine at the famed Harvard Medical School, "nutrition is undeniably important to health. For the better part of a century, nutritionists devoted a great deal of attention to the questions underlying these general rules:

* What are the necessary inputs for a body?
* What is the least that can be consumed without hazard?
* How much can be eaten safely?

The answers are now known quite precisely, and fortunately, they can be rather easily summarised."

(Bennett *et al*, 1987 : 56 - 57)

Bennett *et al*, believe that, "a diet that is varied enough to include vegetables, fruits, grains, a source of calcium (usually from dairy products in our culture), and protein in modest amounts suffices to keep most people in good health without requiring them to think in much detail about what they are eating. Most traditional diets, if available in adequate quantities, accomplish this goal very successfully. On the other hand, some traditional notions - for example, that we need to need animal muscles in order to develop big muscles of our own - have been thoroughly undermined; it's perfectly possible to make big muscles from the protein contained in vegetables." (Bennett *et al*, 1987 : 57)

Several research participants, however, remonstrated against eating vegetables. The following are the words of research participant E: "I eat vegetables only on Mondays and Fridays. My son doesn't like any vegetables besides potatoes in the mutton curry. He doesn't like any other vegetable" (incidentally, this research participant alluded to the son having a heart problem). Research participant G, had this to say: "My son and husband must have their meat. They complain that with vegetables, they have a lot of 'gas'. My two granddaughters and son-in-law also love their meat, they can't stay without that."

Of interest was a study carried out by Draper in the late 1970's on the diet of the Aboriginal Eskimo. Draper reiterates what Bennett and colleagues state: "As a formula for nutritional health, modern nutritionists recommend a mixed diet of fruit, vegetables, cereals, meat, and dairy products. The assumption underlying this recommendation is that no single food or food group can be depended upon to provide all the essential nutrients required for health and well-being. Yet, for centuries, Eskimos residing at latitudes above the Arctic Circle maintained a vigorous life style on a diet consisting almost entirely of meat and fish. This paradox has long held a fascination for nutritionists." (Draper, 1977 : 309)

Wiedman did a case study in medical anthropology among the Oklahoma Cherokee. The author declares that "at the time of historical contact in the 16th century, the Cherokee were situated in the Southern Appalachian mountains. They hunted mammals, especially deer, which provided the major portion of their required dietary fat and animal protein. The cultivation of corn, beans, and squash, plus the collecting of wild species of plants, provided the carbohydrates needed for proper nutrition. The Cherokee began to utilize domesticated plants around 500 A.D."
(Wiedman, 1987 : 50)

The passage of time, according to Wiedman, saw the Cherokee agricultural infrastructure being transformed into one based on an industrial technology and a cash economy. The Cherokee also increased their intake of fats when they changed from boiling and broiling on woodburning stoves and in open fireplaces to deep frying on gas and electric stoves. Also, as canned foods became more prevalent, the home canning and bottling of vegetables and fruits decreased as did the time and energy expended in gardening (Wiedman, 1987 : 58).

Wiedman states: "In a relatively short period of time the Cherokee experienced a major technoeconomic change which included a nutritional shift from natural, self - produced foods, to industrially refined, high calorie food products. Nutritionally, the primary change was in the decreased consumption of corn and the increased consumption of refined corn meal, wheat flour and other refined products which have a high caloric value. Soon after this shift in nutrition, in the Cherokee Ozarks, the

first Native American death due to Diabetes Mellitus was recorded in 1942." (Wiedman, 1987 : 58)

Lang, who is an Associate Professor of Anthropology, carried out a study among the Dakota (Sioux) community in North Dakota, who are affected with diabetes. According to Lang, during the past fifty years, the amount of wild and home-grown foods in the Dakota diet has greatly diminished, and a significantly greater proportion of store-bought foods, supplements the government commodity foodstuffs, not designed to provide a balanced diet (Lang, 1989 : 311).

Lang found that among the Dakota (Sioux), traditional foods and medicinal plants and wild game represent purity, healthfulness, and strength - symbols of a pre - reservation (and pre-European) life and culture. Though today many traditional foods are generally in short supply, and had been consumed regularly by only a few people during their childhood as major components of the diet, the Dakota continue to hold these foods in very high regard, and all spoke at length of their healthful properties in contrast to foods they find themselves eating today." (Lang, 1989 : 310) The following are the words of research participants that Lang interviewed: "It is the foods we eat now that make us sick. We used to eat fresh food, wild game and all the plants that used to grow around here". "It is all this canned food that gives us diabetes." (Lang, 1989 : 305)

Brown, an assistant professor in the Department of Health, Physical Education and Nutrition at Northern Arizona University and Brenton, a member of the Department of Anthropology at the University of Massachusetts, carried out a study which involved a dietary survey of Hopi Native American elementary students. According to Brown & Brenton: "Native Americans appear to be more vulnerable to health conditions related to over-nutrition than the general US population, especially diabetes, obesity, heart disease, hypertension, liver cirrhosis, and dental caries. Before the 1940s, diabetes was either rare in all tribes or was simply not reported. But now it is the second most common diagnosis for Native Americans admitted to the hospital." (Brown & Brenton, 1994 : 517)

Brown and Brenton (1994), state that due to a complicated set of economic, cultural and environmental circumstances, the indigenous foods of the Hopi have been replaced with a diet constituted mainly of modern refined foods. The traditional diet of the Hopi people, who were initially an agrarian society, was chiefly vegetarian, consisting primarily of corn, beans, and squash. This was also due to animal life not being ample in the desert.

Brown and Brenton declare that the use of traditional foods by Native Americans has been declining over the years. In the late 1800s, the Hopi commonly prepared more than sixty different maize dishes. Today, the Hopi diet is primarily beef, mutton, eggs, store - bought bread, potatoes, some canned vegetables, fruits and fruit juices, lard and other fats, coffee, tea, milk, sweetened drink mixes, soda, commercial pastries, and sweet and salty snacks (Brown & Brenton, 1994 : 521).

Brown & Brenton found in this study that they conducted, that fruit and vegetable consumption by the Hopi children was very meagre. Other researchers, according to Brown and Brenton, have found an overall preponderance of refined cereals, animal fats, and sucrose-rich foods, all of which were not used previously in the Native American diet. Foods that are traditional to pre-industrial native groups are generally regarded as more healthful than refined food products
(Brown & Brenton, 1994 : 521).

In the light of the above information, responses amongst research participants to the question, "Who taught you to cook?" proved interesting. All male research participants disclosed having no culinary skills. The following are the answers given by the women research participants:

Research Participant A: Nobody taught me to cook! When I got married and came, my mother-in-law should cook, so I should see how she was cooking.

Research Participant B: My mum! I learnt on my own too, and more after I got married. I never used to cook so often because my granny used to live with me and my mum.

Research Participant C: Learnt myself! Like they used to cook, we used to see.

Research Participant D: I learnt to cook at the Home[58].

Research Participant E: We used to see how my mother cooked. We used to sit next to her so we could see how she cooked, so we learnt.

Research Participant F: Well being at home with my sisters-in-law[59], I was observant. I used to always watch the way they cooked. I used to love baking. I picked that up on my own.

Research Participant G: My mother, my aunt, we all you know grew up together. Two aunts and my mother, we used to take turns. Like one of my father's sisters, she was almost my age, two years elder than me, so we used to take turns. One day my mother, the next day my aunt and you know, the other the other aunt and then this aunt and then my turn. We used to cook and she used to show us how to you know cook this curry. What to add! That's how we learnt.

Research Participant I: My mother!

Research Participant K: My mother!

Research Participant M: My mum and my sisters elder than me. She taught us and then we gradually grew up learning it till I mastered it!

Research Participant O: My mother!

Research Participant P: I learnt from my mother!

Research Participant Q: I just picked up on my own!

Research Participant R: I learnt from my mother. I used to see her cook and I learnt.

Research Participant S: Nobody! By seeing.

Research Participant T: It automatically comes when you at home you know, being with my mum in the kitchen.

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[58] Research participant D, was placed in a Home for orphans because of her destitute situation.

[59] Research participant F's, mother died when she was very young, she was raised by her sisters and sisters-in-law.

Research Participant U: My mother!

Research Participant V: My mother!

Research Participant W: You know I started cooking when I was seven years old. We were a very big family, like my mothers four sisters-in-law, my mother and my aunts. I used to be inquisitive and watch when they cooked. So they used to tell me to put the onions first and I couldn't reach the stove, I should stand on the stool and braise and all. You know how short[60] I am!

Research Participant X: I just picked it up from my mother!

Fifty-five percent of the women research participants learnt to cook solely from their mothers, fifteen percent from both their mothers and aunts as well as elder sisters and a further fifteen percent learnt on their own. Mastering the art of cooking from a mother-in-law accounted for five percent of the total percentage, while a further five percent of the participants acquired knowledge at the children's Home. Another five percent was attributed to both sisters and sisters-in-law. A logical and revealing question that arises from this data is: Did the research participants continue to cook in the manner that they were guided and instructed in, or did their style of cooking change?

This was in fact a question posed to the women research participants in the current study. They were asked: Did their beliefs regarding the preparation of food and food in general, correspond with those of mother or mentors or did they develop different notions, and if they did, who was informing them. In addition, if they claimed to have changed their practices in eating and cooking habits, they were asked whether this behavioural modification had alleviated their diabetic condition. The following are their explanations:

[60] Research participant W, must be around five foot two or three.

Research Participant A:

A: I boil my food! I don't eat rice any more, I only eat brown bread and most of the time I eat vegetables. I don't eat red meat at all now for three years, but I eat fish and chicken.

Q: What made you stop eating red meat?

A: Lots of people told me it was not good for diabetes.

Q: Who told you?

A: My husband's family.

Q: Do you think this change in diet has helped you?

A: It helped me!

Research Participant B:

A: It's more on my style. I prepare on my style. Sometimes certain things I am baking or pushing it in the oven or just making fries. I don't make much of curries. It's more of boiled stuff.

Q: Do you think you are now more conscious of what you eat?

A: I am in a way because when I go to the doctor I don't want him to say, my sugar or pressure is high. Also, when I became a diabetic nine years ago, I use less oil and I make sure we have more fruits and vegetables rather than meat.

Research Participant C:

A: I have my own style of cooking. The foods we eat now has changed too. We don't use much *ghee* after we got the complications like sickness. We have red meat once in a while and most of the time we eat chicken and fish. We also just make the ordinary *roti*.

Research Participant D:

A: Well you see now it's this modern thing! We pick up from the radio. I'm a complete vegetarian. In salad we don't use salt at all just a little lemon juice to season it. We don't make a lot of curry.

Q: So will you say you are now more conscious of what you eat?

A: Yes! As you grow older you can't be eating that extra sugary things, extra salt,

extra oil and all these things.

Research Participant E:

A: Some things are from my mummy and some are my own. I like extra oil but not extra salt. It's my own thoughts.

Q: Have you changed what you eat?

A: No!

Research Participant F:

A: I became conscious of the way I cook because my husband's dad was a heart patient. Now, not a lot of butter and not a lot of oil. I must be careful about that because let's face facts, I think our trouble begins in our bodies. We cause it from day one! From the time we take that food and put it into our mouths, from the time our children are born, we take the sugar and put it into their mouths and they get used to sweet things and salty things. You start, and it sort of accumulates and accumulates until you come to this age. I'm very conscious of these things. I suppose I had to be doing and thinking this way, knowing how the members of my family went. That made me more conscious! We have cut down on meat as well.

Research Participant G:

A: I changed the way I now cook!

Q: Can you tell me in what way have you changed in your cooking?

A: Like I do not use a lot of oil and in my baking I use less sugar. if they ask for one cup, I only use three quarters of a cup. I've been doing this since I came to know that I'm diabetic.

Research Participant I:

A: No, I do not cook like my mum!

Q: Is it different?

A: Yes! I use little oil.

Research Participant K:

A: I think the way I cook today has changed. My mum used to cook mild food but used a lot of salt in the food. Now when I know my sugar is high, I go on boils.

Q: But are you conscious of what you eat?

A: Yes! We stopped having red meat often, we now have it twice in the month. We have chicken and fish. But I must tell you, you get tired of eating boiled foods.

Research Participant M:

A: Its natural that we shouldn't overcook our food but oil is our downfall. My handicap is oil till this day. Last night I got a scolding from my daughter. It's just that I don't know. I try my best! I try my best but I can't. I feel my food is not looking nice! But I'm trying to cut down.

Research Participant O:

A: I cook like my mother did, but less oil now!

Q: Why is that?

A: Since been diabetic!

Q: Did you change your diet?

A: I did but with me sometimes even the diet doesn't help me! I don't know why?

Research Participant P:

A: My cooking has changed. I put little oil in the food. I'm a vegetarian for thirty years.

Q: Do you think it has helped your diabetic condition?

A: Yes! When I was in the Home, they kept us on diet. They should give us rice twice a week, on a Wednesday and Saturday. Brown bread we should eat everyday. My sugar should be four, five or six!

Research Participant Q:

A: We don't use a lot of oil and then we use this olive oil. I'm a vegetarian, my son is a vegetarian and he's very particular. I don't want him to suffer from cholesterol because it's family history you see, so I don't have no fries.

Research Participant R:

A: I think I changed the way I cook. I don't use too much oil and things any more.

Q: Was that because you realised you were diabetic?

A: Yes, true!

Research Participant S:

A: I use little oil when I cook. Now I eat brown bread. I'm so tired of brown bread. Sometimes I have just a handful of rice. I have black tea now, no more milk tea. I have fruit salad with a little bit of lemon juice on it.

Research Participant T:

A: No my cooking has changed!

Q: In what way?

A: I became more aware of using the fats and things that would like harm so you moderate.

Q: Was that because you were diabetic?

A: Yes because I was diabetic.

Research Participant U:

A: I cook the same as my mother. I cook with very less oil all along. All along it's less oil. If I make herbs, you'll never find my oil floating. If I cook anything, you'll never find my oil floating.

Research Participant V:

A: My cooking has changed!

Q: In what way?

A: Many ways! Instead of using a lot of oil, we have been boiling.

Research Participant W:

A: No, no I changed a lot!

Q: You have changed the way you cook?

A: Yes!

Q: Why did you change your style of cooking?

A: In fact you know like after my second baby I started putting on weight and those days who was health conscious? Nobody! When you cooking anything you using so much of butter *ghee* and all this. But now we are very health conscious. I went on a diet and slowly, slowly I use so little oil. Now if you go and look in my fridge, my daughter always buys this light margarine and all diet stuff you know.

Research Participant X:

A: No actually I went to Weigh-Less so that's when I had to change my cooking.

Q: When was this?

A: Oh I've been to Weigh-Less a long time! I've been in and out.

Q: Have you kept to the recommended diet consistently?

A: No, no, no! I would do it at the time you know, cook my own food and things, but the moment I drop weight, I'm back on normal food.

Q: So you only changed your style of cooking because you were going to Weigh-Less.

A: Yes!

Three of the research participants are complete vegetarians. A number of them state that they are have reduced quantities of oil and red meat in particular. Research participant E, was the only one who declared not having changed her cooking style, and in addition asserted her preference for oily food. Research participant F, was particularly passionate in expressing her opinion regarding diet in general and the foods we eat.

Research participant O, claimed that although she had changed her diet, it did not help. Others did, however, relate that a change in diet had improved their diabetic condition. A number of research participants stated that they changed the way they ate and prepared their food only when they discovered that they were diabetic. Then there were research participants who complained about having to constantly eat boiled food and brown bread . Research participant M, made a salient statement when she spoke of the high consumption of oil being a damaging factor in the dietary practices of the Indian population.

CHAPTER SIX

DISCUSSION AND RECOMMENDATIONS

As this research study progressed, it became evident through the data obtained from the research participants that the help of a professional dietician might prove useful in the control of their diabetes. I subsequently made contact with a Diabetic Clinic attached to a private hospital in the Durban area. The sister in charge of the clinic was particularly helpful concerning information on the importance of diet for the diabetic. At the end of each interview I sometimes suggested to the research participant that diabetic clinics and professional dieticians were available if they wanted, advice on their diabetic condition, the types of foods to eat or avoid, and cuisine that might assist in alleviating their diabetic condition.

The idea of seeking the help of a dietician was a new one for many women. Some responded with: "I'm getting all the necessary help and I think my reading has furnished me with the desired information. His or her services could be used by someone else more effectively," or: "I would like some advice about what I should and should not be eating," or: "Yes I think so, I will keep tabs on myself."

There are a number of books by dieticians involved in research and clinical work with people with diabetes, available for diabetics regarding their diet, indicating what they should eat and including a variety of suitable recipes. For example, Roberts *et al*, make the following important point: "The diet advocated for diabetes is not a special diet, it is a healthy diet recommended for everyone." (Roberts *et al*, 1994 : 8)

Roberts *et al*, recommend that diabetics should observe the following:

* "Avoid being overweight. It is more difficult to control your diabetes if you are overweight.
* Eat regular meals and include a wide variety of foods in your diet.
* Try to eat more high-fibre, carbohydrate foods, such as wholemeal bread, jacket potatoes, beans and lentils. This will help to control your diabetes.

* Reduce your intake of sugar and sweet foods, such as desserts, cakes, chocolate and sugary drinks.
* Reduce your intake of fried and fatty foods, such as full-cream milk, cheese, butter and margarine. These foods are very high in calories.
* Avoid special diabetic products, such as diabetic sweets, chocolate and biscuits. These are not necessary, may contain the same amount of fat, and, therefore, will not be significantly lower in kilo joules (calories).
* Use salt in moderation for good general health.
* Drink alcohol in moderation."

(Roberts *et al*, 1994 : 8)

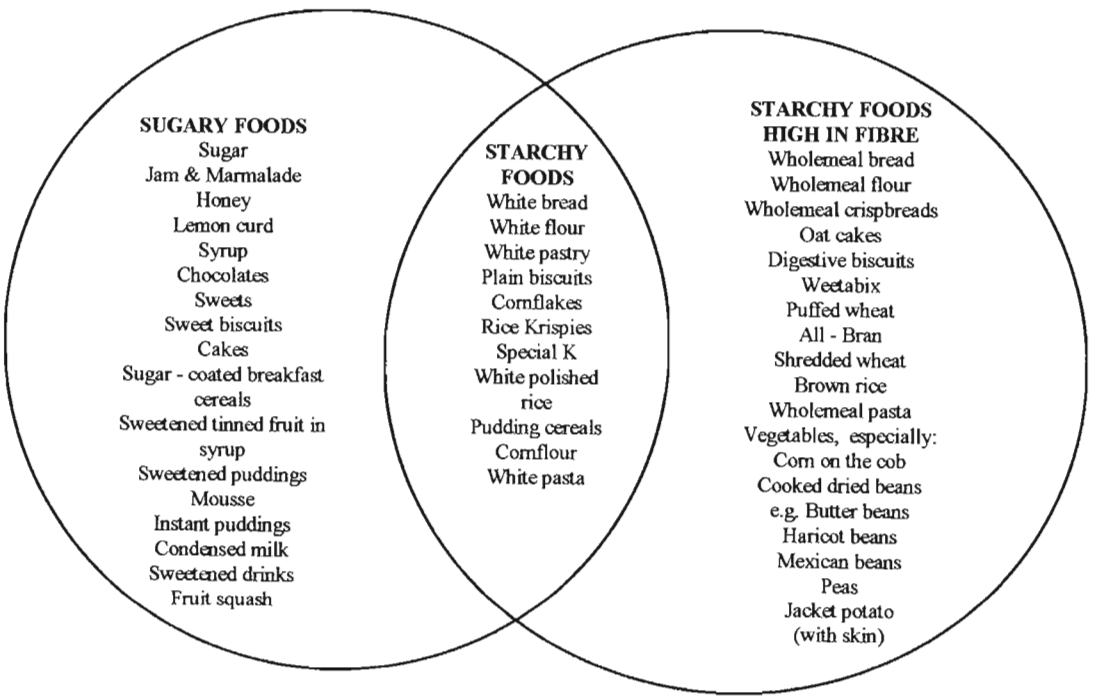
Mann (1982), a university lecturer in Social and Community Medicine at Oxford University, focuses much of his research on the comparison of new high-fibre diets with the old-fashioned, low-carbohydrate, high-fat diabetic diets. Research results indicate that dietary fibre plays a significant role in the treatment of diabetes, and the reason for this is that it is related to blood sugar control. Mann asserts that when sugars are digested on their own by diabetics, it becomes difficult for them to cope with the consequential swift rise in their blood sugar. Therefore, if a diabetic diet holds huge amounts of sugar, it is impossible to accomplish good diabetic control.

Mann's research results point to starches releasing energy at a slower pace than sugars. The reason for this is that they contain strings of sugar molecules which are bound together and which must be broken down in the bowel before being absorbed. The result is that they reach the bloodstream gradually and this means that the available insulin is able to cope better. Fibre content in foods decreases the absorption of sugar even further, and a diet which is high in fibre and starch foods would provide the optimum conditions for effective control of diabetes.

In Oxford, Mann developed a diet for diabetics in which starchy carbohydrates provide about fifty to sixty percent of the total daily calorie intake. The carbohydrate was obtained from cereals, vegetables, beans and fruit. The diet was therefore high in dietary fibre. Mann and colleagues found that the blood sugar levels of the diabetics are optimum throughout the day on this diet, and this included both Type I and Type II diabetes. The following chart is a suggested categorisation of foods by Mann.

Figure 7: A graphical illustration of foods ranging from those that are bad, better and best for the diabetic.

FIGURE 7



(Mann, 1982 : 11)

For diabetics who have mild diabetes and are on or close to their ideal weight, (see Table 10), Mann enumerates foods that can be eaten regularly or in moderation, and those foods that should be avoided.

Table 10: Foods that can be eaten regularly, in moderation or should be avoided completely by diabetics with mild diabetes.

TABLE 10		
FOODS TO EAT REGULARLY	**FOODS TO BE TAKEN IN MODERATION**	**FOODS TO AVOID**
Skimmed milk	Lean meat	**High sugar**
High fibre	Fish	Some types of alcohol
Wholemeal bread	White pasta	Sugar/glucose
Wholemeal biscuits	Eggs	Jam, marmalade & honey
e.g. crispbreads	Evaporated milk	Syrup & treacle
digestives	Plain ice-cream	Mincemeat
Wholegrain breakfast	Yoghurt	Lemon curd
cereals	Margarine & butter	Chocolates & sweets
e.g. All - Bran	Cornflour	Cakes
Weetabix	Pastry (all types)	Sweet pastries & biscuits
Shredded Wheat	White bread	Sugar coated breakfast
Porridge	Plain biscuits	cereals
Brown rice	e.g. cream crackers	Canned & other ready-
Wholemeal pasta	rich tea biscuits	made or instant desserts
Wholemeal flour	Unsweetened breakfast	Sweetened desserts
All vegetables	cereals e.g.	Mousse
especially	Cornflakes	Sweetened fruit squash
peas, lentils	Rice Krispies	Sweetened drinks
baked beans	Special K	**High fat**
dried beans e.g.	Polished white rice	Fried Food
red kidney beans	Pudding cereals	Lard
sweetcorn	e.g. tapioca	Suet
potatoes (eaten	Unsweetened fruit juices	Cream & cream cheese
with their skin)	Malted milk drinks	Cream soups & sauces
Fruit, (with skin) fresh	Drinking chocolate	Dripping
or stewed without	Some types of alcohol	Oils
sugar	Dried fruit	Fat on meat & poultry
Sugar - free	Coconut	Mayonnaise & French
Vegetable & clear soups	Nuts	dressing
Tea or coffee		Salad cream
Sugar - free drinks		Processed fish & meat/pate
Oxo, marmite, bovril		Condensed milk
Sugar - free sweeteners		

(Mann, 1982 : 19)

Rasmussen, a therapeutic nutritionist and dietician, has produced a rather interesting book on the diet for the Asian diabetic. Rasmussen states: "Asian dishes can be transformed into robust, tasty and attractive meals that are suitable for a diabetic and his entire family. As a matter of fact, unlike most Western foods, many traditional Asian dishes are already low in calories and fat, high in starch and fibre to begin with, and very little needs be changed to fit them into a balanced diet." (Rasmussen, 1995 : 71)

Rasmussen suggests the following tips for the reduction of fat intake:

* "Choose more low-fat dairy products, legumes, poultry and fish and eat less red meats which contain more invisible fat. Remove poultry skin and trim all fats from meats.
* Use cooking methods that remove fat. These cooking methods are baking, grilling, steaming, roasting, stewing, poaching, boiling and microwave cooking. Pour off any excess fat produced during cooking.
* To remove fat from soups and stews, cool them in the refrigerator and then remove the solidified fat.
* Avoid deep fat frying; the calories of battered, fried chicken are three times that of grilled or boiled chicken.
* Do not smother your food with gravies, sauces and meat drippings, as they are loaded with fat and oil. Use only low-fat ingredients for gravies and sauces. For example, when making curries, use thin coconut milk or substitute with milk or yoghurt.
* Stir-fry meats in a non-stick wok or pan using minimal oil. Sometimes, instead of stir-frying vegetables in oil, steam or boil them first before flavouring with a little garlic or onion oil.
* To reduce the intake of saturated fat, use unsaturated vegetable oils such as soya oil and corn oil. Avoid palm oil, coconut oil, butter, ghee and lard for cooking. Replace butter with soft tub margarine.
* Cut down on butter, salad dressings and other oily condiments."

(Rasmussen, 1995 : 72 - 73)

Rasmussen also proposes that in order for one to acquire sufficient fibre, one should eat at least two servings of fibre-rich foods at every meal. This may include one of whole grain and one of fruit or vegetable. The following are some of Rasmussen's ideas on how to increase fibre intake:

* "Use legumes such as peas, beans, soyabeans and lentils regularly to fill up meat dishes or to replace meats.
* Eat fruits and vegetables raw whenever possible and choose those with edible seeds and skins. If possible, take two - three servings of vegetables and two - three fresh fruits daily.
* Substitute wholewheat flour for white in baking and choose wholewheat bread and brown rice instead of the polished variety - they contain three times as much dietary fibre.
* Incorporate whole grains such as buckwheat, cornmeal, oats, barley, bulgur and wheatgerm in recipes whenever possible. Use whole grain cereals such as oatmeal, bran flakes and shredded wheat for breakfast two to three times per week.
* Have bean soups, fresh fruits, wholemeal crackers and biscuits for snacks." (Rasmussen, 1995 : 73)

Rasmussen asserts that a balanced diet therefore is a diet that includes sufficient calories (a measure of food energy) from a balanced intake of carbohydrate, protein, fat and adequate vitamins as well as minerals. According to Rasmussen, although vitamins and minerals supply no energy, they are however essential for the support of life and the maintenance of health. Our bodies require around fifty different nutrients for energy, growth and maintenance.

The following table is a 'Switch List', which is a list of foods that are frequently eaten. Rasmussen proposes that this 'Switch List' should be used as a guide when one makes food choices. The result according to the author, would be that one would be amazed at the number of calories one can avoid by simply making a switch.

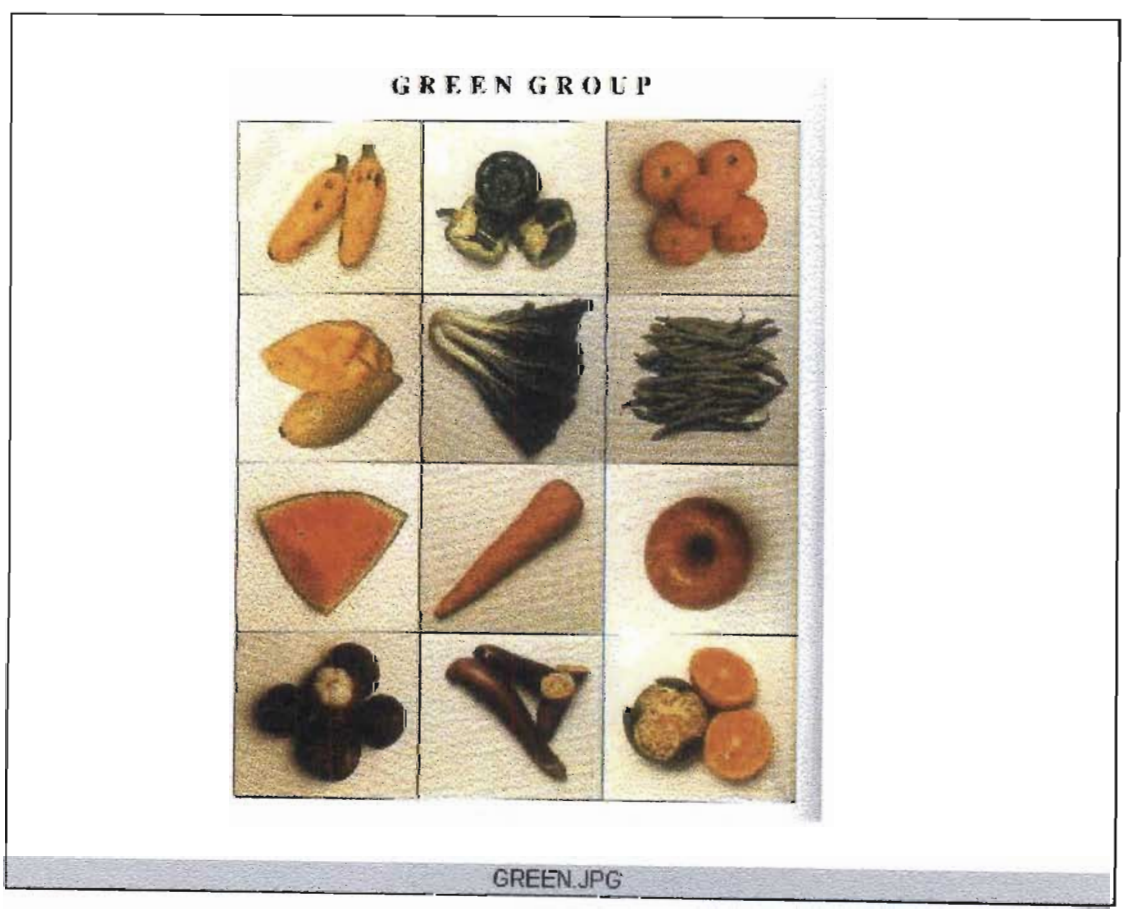
Table 11: A Switch List: A list of commonly eaten foods and snacks with their estimated caloric contents.

TABLE 11			
Food and Amount	**Cal**	**Food and Amount**	**Cal**
Fried chicken with batter 1 pc	250	B. B. Q. chicken 1 pc	120
Fried noodles 1 plate	800	Soup noodles 1 bowl	400
Fried rice 1 plate	750	Chicken rice 1 plate	500
Roti pratha 1 average	350	*Thosai* 1 average	200
Chicken curry with coconut 2 pcs	320	Fish curry with tamarind	200
Fried spring roll I average	200	*Popiah* 1 average	120
Puri 1 average	180	*Idlee* 1 average	80
Fried bread *(hum chin peng)* 1 pc	320	Steamed *bao* 1 average	120
Bubur Chacha 1 bowl	420	Bean soup 1 bowl	200
Fried *dimsum* 1 average	175	Steamed *dimsum*	50
Curry puff 1 average	240	Meat bun 1 average	160
French fries 15 pcs	300	Baked potato 1 large	120
Cream cake 1 slice	325	Pandan cake 1 slice	200
Doughnut 1 average	225	Bread roll 1 average	80
Cookies 2 pcs	80	Crackers 2 pcs	54
Potato chips 20 pcs	200	Popcorn 1 cup (no butter)	23
Butter 1 tbsp	100	Diet margarine 1 tbsp	50
Salad dressing 1 tbsp	80	Lemon juice	8
Cream soup 1 cup	200	Clear soup 1cup	10
Fruit pies 1 average	350	Sponge cake 1 pc	180
Fried chicken 3 pcs	1000	Hamburger 1 regular	250
Fried banana *(goreng pisang)* 1 pc	190	Banana 1 average	80
Milk shake 1 cup	370	Yogurt shake with fruits	120
Chocolate bar 30g	170	Chewing gum 1 pc	10

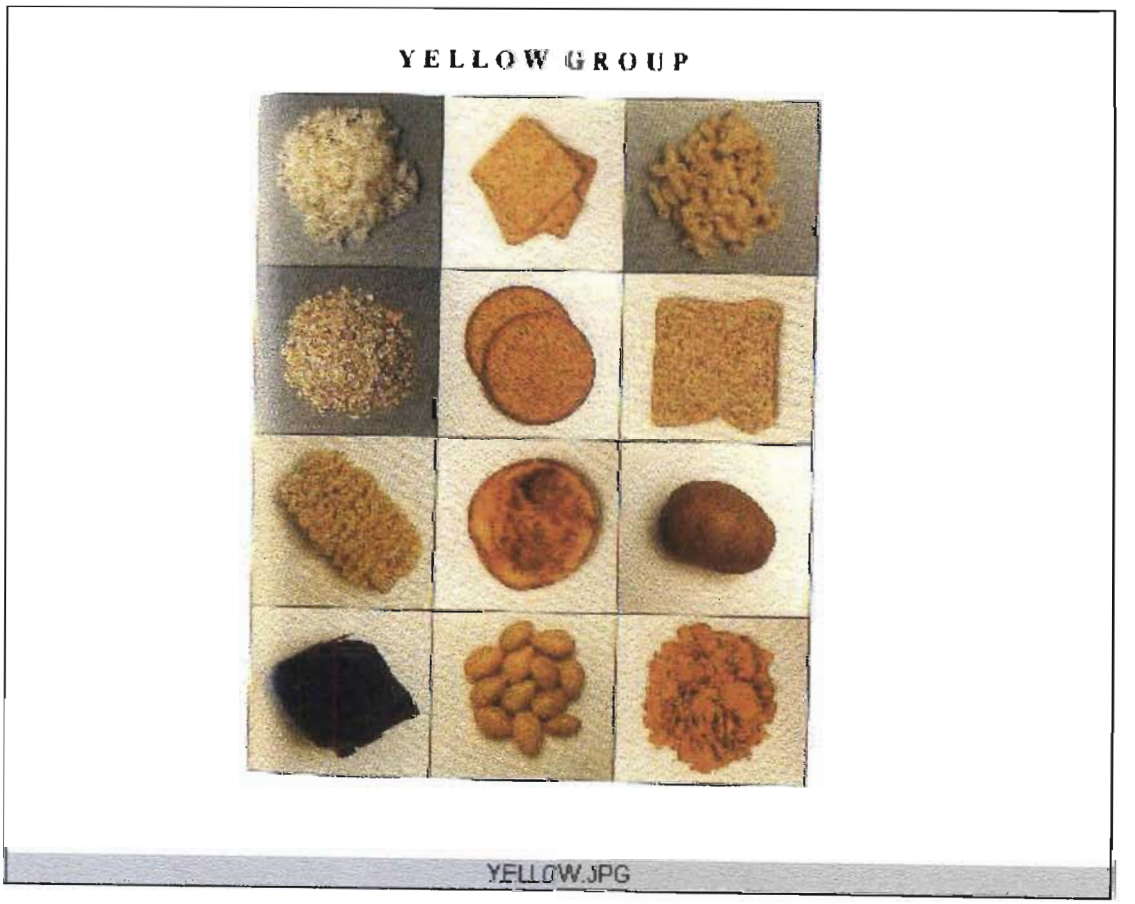
(Rasmussen, 1995 : 126)

Rasmussen has further divided the most frequently eaten foods into four basic groups which could aid one in selecting a well-balanced diet. Each group of foods according to Rasmussen is unique in the sense that it supplies particular nutrients in quantities that are quite different from those supplied by the other groups. Rasmussen states: "The colours representing the four food groups are the same as those of the traffic light, to help you single out those bulky foods that can be eaten in larger amounts (green); those that you need to eat in reasonable or moderate amounts (yellow and orange) and those that you have to think carefully before you consume them (red)." (Rasmussen, 1995 : 37)

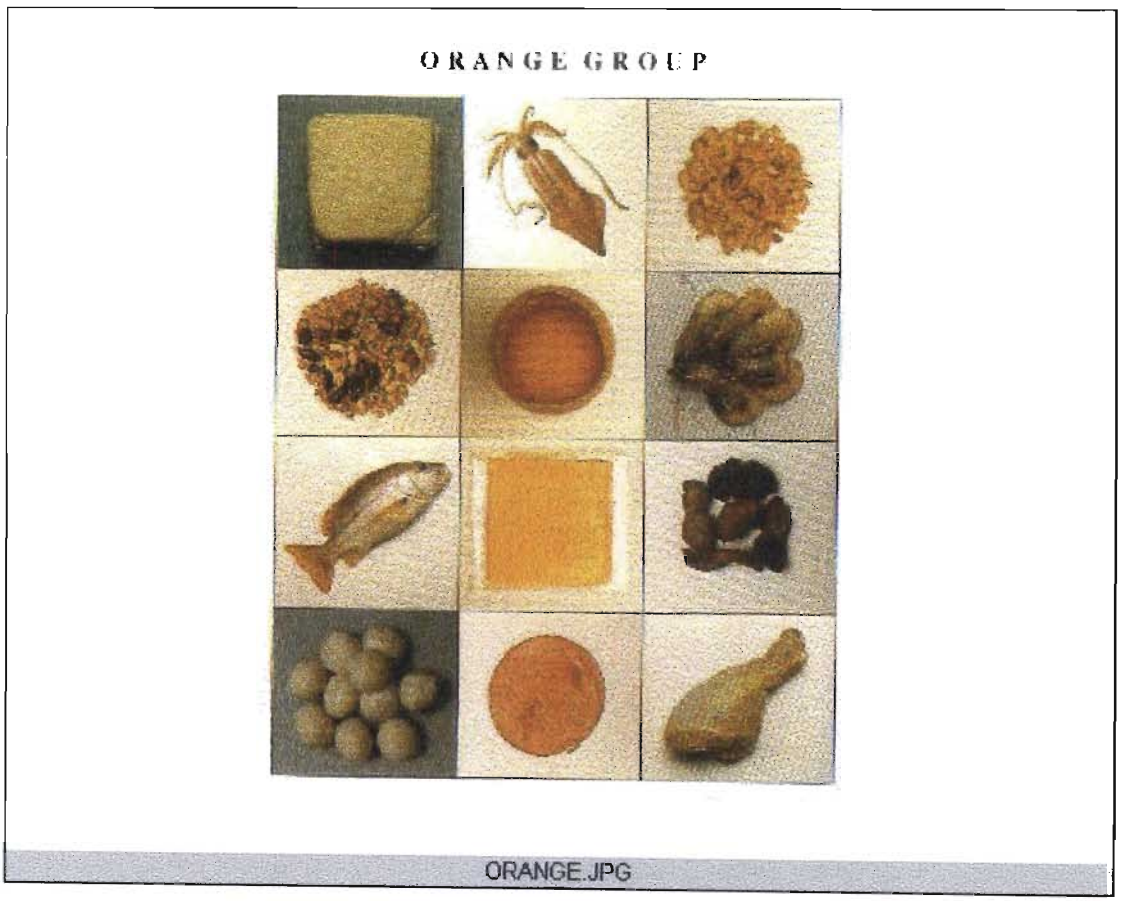
Rasmussen further states: "The Go group or the Green vegetable and fruit group contains foods that are high in vitamins, minerals and bulk (fibre and water), but low in calories. Thus green foods can fill you up without too many calories and are, therefore, a boon to weight watchers." (Rasmussen, 1995 :37)



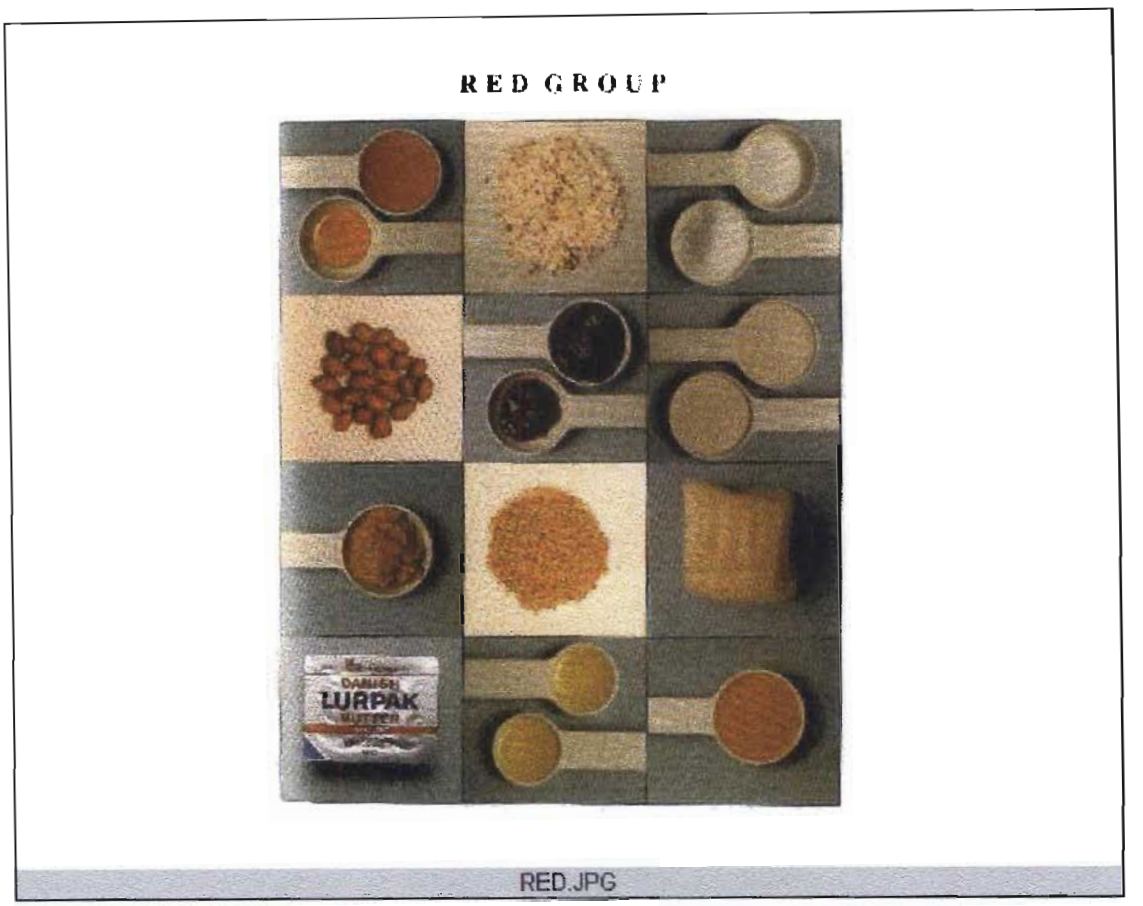
According to Rasmussen: "The Yellow or starch group, consisting of cereals, breads and grains, is the major supplier of complex carbohydrate and fibre (if cereals are unrefined), and diabetics are advised to consume proportionally more of these foods. But this does not mean unlimited amounts as starches are relatively energy dense. The amount you should eat will depend on your overall energy requirement, of which fifty-five - sixty percent should come from complex carbohydrates."
(Rasmussen, 1995 : 37)



Rasmussen declares: "The Orange or protein group, legumes, meats, fish, and dairy products, supplies some calories and most of our protein needs, as well as most of the saturated fat and cholesterol that we don't need - more so if animal foods are not carefully chosen. As we don't need that much protein, only fifteen percent of total calories, the consumption of animal foods is best limited to avoid excessive fat intake, keeping in mind that as much as forty percent to fifty percent of fat in our diet may come from this orange group." (Rasmussen, 1995 : 37)



Rasmussen asserts: "Stop to think before you consume foods from the RED group. Red-alert foods, including fats, alcohol and sugars, are like icing on a cake that you can easily do without. They are not only very energy dense but also nutrient poor. Too much sugar and alcohol, providing only carbohydrate calories and no other nutrients, is detrimental to diabetes control. As it is advisable for diabetics to keep fat intake below thirty percent of total calories, red foods must only be taken sparingly." (Rasmussen, 1995 :37)



Rasmussen contends: "That although fruits and vegetables may supply vitamins A and C in abundance, they are lacking in energy and B vitamins. Milk is a good source of protein and calcium, but it does not supply sufficient iron and vitamin C to support a healthy life if not supplemented. Rasmussen is therefore firm in the belief that variety is the key to good nutrition; limiting food choices or omitting foods from one of the major groups will inevitably lead to certain nutritional deficiencies and poor health. This is why a balanced diet requires that you select foods from each of the food groups." (Rasmussen, 1995 : 36)

CHAPTER SEVEN

CONCLUSION

By conducting in-depth interviews, a wealth of information was obtained from the research participants. This information forms the foundation of this dissertation. This dissertation represents an attempt to link the information received from the research participants to other published case studies and literature (both social science and biomedical) related to Type II Diabetes Mellitus.

Dr Peter Wise, a Honorary Consultant Physician at Charing Cross Hospital, London, and a leading specialist in the field of diabetes, as well as a regular lecturer, states: "A diabetic diet is a healthy, balanced diet, the sort of diet that is recommended for everyone. A dietician will tell you about foods which will suit both your likes and needs, whatever your ethnic or national background. There is no need to buy 'special' diabetic foods; they are more expensive, and not necessarily more healthy." (Wise, 1999 : 14)

Deriving from this statement made by Wise as well as previous assertions by various authorities, (see Chapters 4, 5 and 6), what clearly emerges is that a diabetic is in need of a healthy diet and lifestyle. Previous studies that have been conducted and have been cited in this dissertation demonstrate how a drastic change in the lifestyle and diet of a group of people contributes to the high incidence of diabetes. This included the studies amongst the Oklahoma Cherokee and the Dakota Indians in the United States, as well as the Wanigela people of Papua New Guinea (see Chapter 4). These research studies strongly suggests that Type II Diabetes Mellitus came with the shift from an agricultural lifestyle that included home-grown foods, to an industrial lifestyle and a store- bought, diet.

The documentation of this rapid socio-economic and cultural change from an agricultural to an industrial way of life shows people no longer walking great distances but rather travelling in motor vehicles - the utilization of modern appliances has reduced burdensome, physically demanding household chores. There was also the

change from boiling and broiling on wood-burning stoves and in open fireplaces to deep frying on gas and electric stoves. The home canning and bottling of vegetables and fruits declined as did the time and energy that was expended in the garden (see Chapters 4 and 5).

The result was that the diet of these communities decreased substantially in foods grown at home, and a significant increase was noted in the consumption of store-bought foods. This immense techno-economic change and a nutritional shift from natural, self-produced foods to industrially refined, high calorie foods products had dire health consequences. The foremost of these, as discussed by authors such as Wiedman (1987); Lang (1989); and Dowse *et al* (1994), was the considerable increase in the recorded cases of Type II Diabetes Mellitus among these communities.

In today's modern world, there are a dwindling number of communities that are still attempting to sustain themselves on foods that are natural and self-produced. One such example is to be found in Brazil's Atlantic rain forest, approximately two hours from San Paulo. Here, a Krishna (God) conscious rural farm can be found. What is significant about this farm is that its members have declared themselves independent from modern society, and prefer dependence on nature and the land. Devotees of this Krishna conscious farm community harness ox power; believe in the protection of the cow; use dung for fuel and fertilizer; grow their grain, vegetables and other useful crops. Similar farms exist worldwide and this can be credited to a notable personality by the name of His Divine Grace A.C. Bhaktivedanta Swami Prabhupada, the founder *acarya*[61] of the International Society for Krishna Consciousness (ISKCON).

It is the belief of the author that a reduction in our consumption of animal products may also help to protect against many chronic modern diseases, but such an argument would require another whole dissertation, and is well beyond the scope of the present one.

[61] One who teaches by his own example; a spiritual master.

It has been said that being diagnosed a diabetic impacts both psychologically and emotionally on a person. It also, to an extent, affects the social functioning of the diabetic, which may involve interactions with the family. Therefore, faced with diabetes and its ramifications, questions like: "How will we ever cope?", are rather common (Daneman *et al*, 1999).

Consequently, it becomes imperative for a diabetic to be informed of the do's and don'ts of the disease. For instance, the significance of maintaining a healthy diet and lifestyle (the major socially determined factors identified and discussed in this dissertation), and trying to accommodate the disease within one's life rather than allowing diabetes to control one's life should be fully understood and accepted.

According to Associate Professor Dr. Flemming Dela, there is a growing realisation among diabetics that they need to be guarded in what they eat, but they are seemingly oblivious of the importance of exercising. It therefore becomes apparent that the focus should not be on one aspect of health but rather on both: The maintenance of a healthy diet and the creation of a healthy lifestyle.

As the authors of Eat Better Live Better, (O' Hagan, 1987) contend, health does not come out of a doctor's prescription for a bottle of pills. Instead it issues from **sensible living and eating habits**. An important point that was reiterated by the experts cited throughout this dissertation is that the diet suggested for a diabetic is not a special diet, but rather a healthy diet that can be endorsed for one and all.

In the various chapters of this dissertation the thoughts of the research participants regarding this disease were presented and an attempt was made to evaluate and interpret their views regarding diabetes in relation to what other studies on the subject have revealed. This included expert advise by a number of dieticians, nutritionists, lecturers in the health field and general practitioners. An ardent hope in presenting this research in this particular manner is that I might be able to contribute to the development of a greater consciousness about diabetes and the value of healthy living more generally.

This research study was undertaken in an attempt to identify and delineate the common attitudes and opinions of a sector of the South African Indian population that is afflicted with a high prevalence of Type II Diabetes Mellitus. Through a close examination of diet and lifestyle, an attempt was made to link these two principal factors with the incidence of this disease. In addition, the guidance and advice of a number of experts were cited in an endeavour to provide some direction and offer some relevant information to those suffering today, to diabetics, their families, and the medical personnel who assist them, in order to contribute to a better understanding of this predominantly modern disease.

More importantly, this study adds support to other studies that suggest a strong link between a healthy diet and lifestyle and the necessity for individuals to equip themselves self with knowledge regarding a disease that one finds his or her self afflicted with. Hence, I have made an attempt in this dissertation to draw on both social science and biomedical literature which essentially facilitates this empowerment through knowledge. The data reflected in the figures, tables and the actual excerpts from the interviews with the research participants as presented in this dissertation, are a reflection of the need for greater knowledge (regarding a healthy diet and lifestyle) and behavioural change on the part of the research participants.

As the highly acclaimed Srila Prabhupada stressed: " Emphasis in life should always be placed on simple living and higher thinking". The application of this philosophy and principles outlined by the other experts cited could contribute not only to a reduction in the incidence of Type II Diabetes Mellitus, but perhaps also of other diseases associated with the ills of a modern, urbanised lifestyle and diet.

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