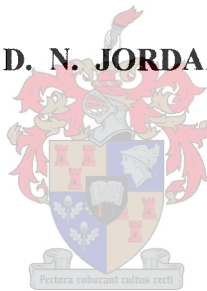


**THE KNOWLEDGE OF REGISTERED NURSES  
REGARDING SKIN INTEGRITY, FOOT CARE AND  
NUTRITION OF A DIABETIC CLIENT WITH A STROKE**

**D. N. JORDAAN**



**ASSIGNMENT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS  
FOR THE DEGREE OF MPhil (REHABILITATION) AT STELLENBOSCH  
UNIVERSITY**

**SUPERVISOR: G. MJI**

**APRIL 2004**

## **DECLARATION**

I, the undersigned, hereby declare that the work contained in this assignment is my own original work and that I have not previously submitted it in its entirety or in part to any other university for a degree.

Signature

Date

## ABSTRACT

One of the proposals of the Bi-Ministerial Task Team (BTT) was that primary health care services in the Western Province should be nurse-driven (Department of Health and Social Services, 2000). This implied that nurses at the primary level of care (see definition of terms, page vii) should have a comprehensive knowledge regarding a variety of fields, e.g., preventive, promotive and curative services and rehabilitation.

In the Helderberg area, which is the study area, it has been noted that there is a steady increase in the number of clients with diabetes and hypertension attending the eight community health centres (CHC's)/clinics. Diabetes and hypertension are interlinked and preventable diseases of life style (Provincial Government of the Western Cape (PGWC), 1999). These two conditions are commonly accompanied by a sequel of complications, such as skin breakdown, foot ulcers, stroke and nutritional deficiencies. These complications can further lead to disability when not managed appropriately.

Historically the focus of the nurse has been on curative care, with little emphasis on prevention and rehabilitation. There is also a misconception among the medical staff and the clients that the management of complications of diseases of life style, as mentioned in the previous paragraph, is the responsibility of the rehabilitation specialists, e.g., the physiotherapist and the occupational therapist.

With the vision of the BTT, the rise in the number of clients with diseases of life style, and the current focus of the nurse, the researcher is questioning the knowledge of the registered nurse at primary level of care in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.

In order to answer this question, a descriptive study was done, making use of a self-administered questionnaire. The Helderberg area with approximately 50 registered nurses working at the eight different CHC's/clinics was chosen as the study area. Of the 50 registered nurses actively working, 44 completed the questionnaire, giving the researcher a return rate of 88%. The data was analysed using both quantitative and qualitative methods. Results showed that the overall average score for registered nurses on the three aspects, namely knowledge of skin integrity, foot care and nutrition of a diabetic client who has suffered a stroke, was 80%, the highest % score being 91% for aspects

related to nutritional status and the lowest % score was 70% for aspects related to the prevention of skin breakdown, leaving a knowledge deficit of 20%. Not a single registered nurse scored 100% on the three aspects mentioned. Recommendations are made to all the role players, e.g., the registered nurses, the area managers in the Helderberg area and the rehabilitation staff.

## OPSOMMING

Een van die voorstelle van die Bi-Ministeriële Taakspan (BTT) was dat primêre gesondheidsorg in die Wes-Kaap verpleeg-aangedrewe moet wees (*Department of Health and Social Services*, 2000). Dit impliseer dat verpleegkundiges op primêre vlak 'n omvattende kennis moet hê van die verskillende aspekte van verpleging waarin hulle werk, byvoorbeeld, voorkomende, bevorderende, en kuratiewe dienste, asook rehabilitasie.

Diabetes en hipertensie hou verband met mekaar en is voorkombare toestande verwant aan lewenstyl (*Provincial Government of the Western Cape (PGWC)*, 1999). Hierdie twee toestande gaan dikwels gepaard met komplikasies soos velafbraak, voet-ulkusse, beroerte, en voedingsgebreke. Hierdie komplikasies kan verder lei tot gestremdheid indien nie behoorlik gehanteer nie.

Histories was die fokus van die verpleegkundige op kuratiewe sorg, met min klem op voorkoming en rehabilitasie. Daar bestaan ook wanopvattinge onder mediese personeel sowel as kliënte dat die hantering van komplikasies as gevolg van toestande verwant aan lewenstyl die verantwoordelikheid van die rehabilitasiespesialiste, byvoorbeeld fisioterapeute en arbeidsterapeute is.

Met die visie van die Bi-Ministeriële Taakspan, die toename in die aantal kliënte met toestande verwant aan lewenstyl, en die huidige fokus van die verpleegkundige, bevraagte die navorser die kennis van die primêre vlak verpleegkundige op in die Helderberg-, oor aspekte soos velintegriteit, voetsorg, en die voedingstatus van 'n diabetiese kliënt wat 'n beroerte gehad het.

In 'n poging om die vraag te beantwoord, is 'n beskrywende navorsingstudie gedoen en 'n self-gedadministreerde vraelys is gebruik. Die Helderberg-area, met ongeveer 50 geregistreerde verpleegkundiges, wat in agt verskillende plaaslike owerhede klinieke/gemeenskapsgesondheidsentra werksaam is, is gekies as die navorsingsarea.

Van die 50 geregistreerde verpleegkundiges wat aktief werksaam is in die area, het 44 die vraelys voltooi, wat die navorser 'n terugvoer persentasie van 88% gegee het. Data is ontleed deur van beide kwantitatiewe en kwalitatiewe metodes gebruik te maak. Resultate het getoon dat die algehele gemiddeld behaal deur die verpleegkundiges oor kennis van die drie aspekte, naamlik velintegriteit, voetsorg, en voeding van 'n diabetiese kliënt wat 'n beroerte gehad het, 80% was.

Die hoogste persentasie behaal was 91% vir aspekte rakende voedingstatus en die laagste persentasie behaal was 70% vir aspekte rakende velafbraak, wat 'n kennis leemte van 20% kennis los. Geen verpleegkundige het 100% behaal vir die drie genoemde aspekte nie. Aanbevelings is aan die rolspelers gemaak, byvoorbeeld, die geregistreerde verpleegkundiges, die area bestuurders in die Helderberg area en die rehabilitasie personeel.

## **ACKNOWLEDGEMENTS**

The author wishes to thank the following people for their time, advice, support and encouragement during the course of the study:

**Ms Gubela Mji**, for her supervision, guidance and brilliant insight throughout the course of the study.

**Ms Jenny Hendry**, for her guidance and theoretical input throughout the course of the study.

**Professor Daan Nel, (Statistician at the Centre for Statistical Consultation)**, for the statistical calculations as well as the invaluable input during the analysis of the results.

**The Registered Nurses working in the Helderberg area**, without whose co-operation this study would not have been possible.

**The managers of both the Local Authorities and Community Health Services Organisations**, for opening the doors of the Helderberg area and allowing the author to conduct the study.

**Messrs Anton, Neil, and Jacques Jordaan**, for their love, and patience.

**Stellenbosch University**, for financial assistance.

## **DEFINITION OF TERMS**

### **1. Activity limitation**

Difficulty an individual may have in executing activities. Any activity limitation may range from a slight to a severe deviation in terms of quality or quantity when executing the activity in a manner or to the extent that is expected of people without the health condition (World Health Organisation (WHO), 2001).

### **2. Clinics**

Places where medical advice, examination and treatment are available, generally only during office hours. Clinics provide mostly preventive and health promotive care and are run by the local authorities. Also referred to as health facilities (Department of Health and Social Services, 2000).

### **3. Community health centres**

Polyclinics in the community where medical, midwifery and nursing facilities are readily available. They provide curative and preventative services and are a common phenomenon in South Africa. In the Western Cape the Provincial Government of the Western Cape administers them. Also referred to as health facilities (Department of Health and Social Services, 2000).

### **4. Community**

A group of interacting individuals who occupy a certain territory and who are united by commonly shared benefits, values, and norms (Vlok, 1996).

### **5. Comprehensive health care**

Preventive and health promotive measures that aim at bringing health care as close as possible to the community, be it in the home, the place of work, the school or a clinic situated within easy reach of the target population (Denhill, King & Swanepoel, 1999).



## **6. Chronic clubs**

Clients with diseases of life style attend the health facility on a certain day of the week. During this session their condition and any related problems are addressed (Vlok, 1996).

## **7. Curative services**

Includes taking a full history, doing a full physical examination, making a diagnosis, prescribing the correct medication and managing the client according to national and provincial protocols (Vlok, 1996).

## **8. Disability**

Any restriction or lack of ability (resulting from an impairment) to perform an activity in the manner or within the range considered normal for a human being (WHO, 1994).

## **9. Diseases of life style**

Refers to preventable diseases and conditions such as hypertension, coronary artery disease, obesity, certain cancers, smoking, alcohol and drug abuse, overeating and incorrect eating habits and family tension and stress that may lead to the development of disease. Diseases of life style can also be referred to as non-communicable diseases, chronic killer diseases, and diseases of affluence (Department of Health, 2001a+b).

## **10. Human dignity**

An inherent worth and the right to have that worth respected and protected i.e. the right to life (Constitution of Republic of South Africa (RSA), 1996).

## **11. Impairment**

A loss or abnormality in body structure or physiological function (including mental functions). *Abnormality* here is used strictly to refer to a significant variation from established statistical norms (i.e. as a deviation from a population mean within measured standard norms) and should be used only in this sense (WHO, 2001).

## **12. Life style intervention**

Refers to attempts by health educational/socio-political measures to change destructive, illness-producing aspects of a community's way of living (life style) (Vlok, 1996).

## **13. Nurse at primary level of care**

The nurse, whose sphere of work is outside the hospital, i.e. mainly in the community, e.g., at a primary setting, rendering a service at primary level of care to the client (Vlok, 1996).

## **14. Participation restriction**

Problems an individual may experience in involvement in life situations. The presence of a participation restriction is determined by comparing an individual's participation to that which is expected of an individual without disability in that culture or society (WHO, 2001).

## **15. Preventive services**

Preventive services essentially include mother and child health care and may also include the under five clinics where the children are weighed and immunised and the mothers educated. Other preventive services include ante- and postnatal care and reproductive health (Vlok, 1996).

## **16. Primary health care**

A client's first point of entry into a comprehensive community health care system. Primary health care is the first element of a continuing health care process (Denhill *et al.*, 1999).

## **17. Primary prevention**

Health promotive measures that include health and parent education, and marriage guidance for happy family life, which promotes mental health, promotion of family planning, good nutrition, recreation and pleasant working conditions. Specific protective measures, e.g., immunisation, personal and environmental hygiene, avoidance of carcinogens and allergens, genetic counselling,

and careful driving, wearing protective clothing in industry, foods fortification schemes in malnourished communities (Katzenellenbogen, Joubert & Karim, 1997).

#### **18. Registered nurse**

A person who has completed a three- or four-year diploma or degree course through a recognised nursing college or university, and whom is listed by the South African Nursing Council as a registered nurse (Mellish, Brink & Paton, 1998).

#### **19. Rehabilitation**

Rehabilitation is a process that assists people with disabilities to develop or strengthen their physical, mental and social skills, so that they can be fully integrated into the community (WHO, 1994).

#### **20. Secondary intervention**

Aims at curing and preventing disease processes, to prevent the spread of communicable diseases, the prevention of the complications and sequences of diseases, thereby shortening the period and extent of disability and preventing chronicity and death (Beaglehole, Bonita & Kjellström, 1993).

#### **21. Social justice**

The principle of justice concerns questions of what is due to whom, and how to distribute both the burdens and benefits of living in a society (Haas, 1993).

#### **22. Team**

A group of people from various professions who make different contributions towards the achievement of a common goal (Pritchard & Pritchard, 1994).

#### **23. Tertiary prevention**

Aims at limiting advanced disease by rehabilitation and maintenance in the community (Katzenellenbogen *et al.*, 1997).

## **LIST OF ACRONYMS**

<b>USSR</b>	Union of Soviet Socialist Republic
<b>PHC</b>	Primary Health Care
<b>BTT</b>	Bi-Ministerial Task Team
<b>CHC</b>	Community Health Centre
<b>LA</b>	Local Authority
<b>CHSO</b>	Community Health Services Organisation
<b>DHS</b>	District Health System
<b>NHS</b>	National Health System
<b>ANC</b>	African National Congress
<b>WHO</b>	World Health Organisation
<b>PGWC</b>	Provincial Government of the Western Cape
<b>IDDM</b>	Insulin dependent diabetes mellitus
<b>NIDDM</b>	Non-insulin-dependent diabetes mellitus
<b>MOU</b>	Maternity Obstetric Unit
<b>SANA</b>	South African Nursing Association
<b>SANC</b>	South African Nursing Council
<b>HRD &amp; T</b>	Human Resource Development and Training
<b>WCCN</b>	Western Cape College of Nursing

## TABLE OF CONTENTS

	<b>Page</b>
 <b>CHAPTER 1</b>	
<b>THE INTRODUCTION</b>	
1.1 Background to the study	1
1.2 Significance of the study	4
 <b>CHAPTER 2</b>	
<b>LITERATURE REVIEW</b>	
2.1 Introduction	6
2.1.1 Perspective on PHC internationally	6
2.1.2 Perspective on PHC nationally	8
2.1.3 Perspective on PHC at provincial and district level	13
2.1.3.1 The Western Cape	14
2.1.4 Perspective on PHC at community/local/regional level	17
2.1.4.1 Perspective of PHC in the metropole region	17
2.1.4.2 The Helderberg perspective on PHC	18
2.1.5 Health profile in the Helderberg area	23
2.1.5.1 Diabetes	25
2.1.5.2 Hypertension leading to stroke	27
2.1.5.3 Skin care, foot care and nutritional care of a client with diabetes and hypertension that may lead to a stroke	28
2.1.6 Role of the registered nurse in the prevention of physical complications of diseases of life style that could result in the development of disability	31
2.1.7 Evolution of the nursing profession, globally, nationally and in the field of training	33
2.1.8 Conclusion	34

## **CHAPTER 3**

### **METHODOLOGY**

3.1	Primary aim of the study	36
3.2	Objectives of the study	36
3.3	Study design	37
3.4	Study area	37
3.5	Study population	37
3.6	Inclusion criteria	38
3.7	Exclusion criteria	38
3.8	Instrumentation	38
3.8.1	Advantages of a self-administered questionnaire	39
3.8.2	Disadvantages of a self-administered questionnaire	39
3.9	Pilot study	39
3.10	Procedure	39
3.11	Data analysis	40

## **CHAPTER 4**

### **PRESENTATION OF RESULTS**

4.1	Presentation of the results of the six objectives set out in Chapter 3 in order to reach the primary aim of the study	41
4.1.1	Objective 1: To describe the demographic details of the registered nurses working within the Helderberg area	41
4.1.2	Objective 2: To assess the overall % knowledge score obtained by registered nurses regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	44
4.1.3	Objective 3(a): To compare the difference in the % knowledge score obtained by registered nurses at the eight CHC's/clinics regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	48
4.1.4	Objective 3(b): To compare the difference in % knowledge score obtained by registered nurses with and without the qualification of curative skills for PHC regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	54

4.1.5	Objective (3c): To compare the difference in % knowledge score obtained by registered nurses who have a degree and a diploma qualification regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	61
4.1.6	Objective 4: To assess whether the number of years working at primary level of care have an influence on the knowledge of the registered nurses regarding their knowledge of skin integrity, foot care and nutrition of a diabetic client with a stroke	66
4.1.7	Objective 5: To identify in which of the sections of the questionnaire the registered nurses faired well in and in which they faired poorly	71
4.1.8	Recommendations	72
4.2	Comments on findings	72
4.3	Limitations	73
4.4	Validity	73

## **CHAPTER 5**

### **DISCUSSION**

5.1	Objective 1: To describe the demographic details of the registered nurses working within the Helderberg area	75
5.2	Objective 2: To assess the overall % knowledge score obtained by registered nurses regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	76
5.3	Objective 3(a): To compare the difference in the % knowledge score obtained by registered nurses at the eight CHC's/clinics regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	77
5.4	Objective 3(b): To compare the difference in % knowledge score obtained by registered nurses with and without the qualification of curative skills for PHC regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	78
5.5	Objective 3(c): To compare the difference in % knowledge score obtained by registered nurses who have a diploma and a degree qualification regarding skin integrity, foot care and nutrition of a diabetic client with a stroke	79

5.6	Objective 4: To assess whether the number of years working at primary level of care have an influence on the knowledge of the registered nurses regarding their knowledge of skin integrity, foot care and nutrition of a diabetic client with a stroke	79
5.6	Objective 5: To identify in which of the sections of the questionnaire the registered nurses faired well in and in which they faired poorly	80
5.8	Conclusion	81

## **CHAPTER 6**

### **RECOMMENDATIONS**

6.1	In respect of registered nurses	83
6.2	In respect of area managers of the eight CHC's/clinics	84
6.3	In respect of the rehabilitation staff	85
6.4	In respect of the HRD and T Section of the Department of Health	85
6.5	In respect of the clients	86
6.6	In respect of PGWC	86
6.7	In respect of the researcher	87

<b>CLOSING REMARKS</b>	89
------------------------	----

<b>REFERENCES</b>	90
-------------------	----

### **APPENDICES**

A.	Participation information and consent form	94
B.	Inligtings- en toestemmingsvorm vir deelnemers	97
C.	Request to do research: A. Fox	100
D.	Request to do research: E. v.d. Merwe	102
E.	Request to do research: J. Hair/L.Mzilikazi	104
F.	Request to do research: Dr. I. Thoms	106
G.	Questionnaire	108
H.	Vraelys	117



## LIST OF TABLES

	<b>Page</b>
1. Principles, elements and pillars of PHC	7
2. National principles of PHC	9
3. Objectives of the Department of National Health and Population Development	10
4. CHC and LA facilities within the Western Cape	17
5. Life style management regarding diet of clients with diabetes and hypertension	29
6. Foot care for clients with hypertension and diabetes	30
7. Maintenance of skin integrity of a client with diabetes and hypertension	30
8. Number of registered nurses working at the eight CHC' s/clinics	42
9. Age groups of the registered nurses at the time of the interview	42
10. Years worked at primary level of care	43
11. Year in which post-basic training was completed	43

## LIST OF FIGURES

	<b>Page</b>
1. Principles of the ANC Health Plan	12
2a. Map of the Helderberg area within the metropole region	19
2b. The eight CHC's/clinics within the Helderberg area	20
3. Overall % score obtained for correct responses, re: knowledge of prevention of skin breakdown	44
4. Overall % score obtained for correct responses, re: knowledge of maintenance of foot care and skin integrity	45
5. Overall % score obtained for correct responses, re: knowledge maintenance of nutritional status	46
6. Overall % score obtained for correct responses, re: knowledge maintenance of nutritional status	47
7. Overall % score obtained for correct responses, re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status	48
8. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of prevention of skin breakdown	49
9. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of maintenance of foot care and skin integrity	51
10. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of maintenance of nutritional status	52
11. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of maintenance of nutritional status	53
12. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance	

	of nutritional status	54
13.	Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills qualification re: knowledge of prevention of skin breakdown	55
14.	Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills qualification re: knowledge of maintenance of foot care and skin integrity	57
15.	Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills qualification re: knowledge of maintenance of nutritional status	58
16.	Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills qualification re: knowledge of maintenance of nutritional status	59
17.	Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills qualification re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status	60
18.	Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of prevention of skin breakdown	61
19.	Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of maintenance of foot care and skin integrity	63
20.	Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of maintenance of nutritional status	64
21.	Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of maintenance of nutritional status	65
22.	Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status	66

23.	Years experience of registered nurses at primary level of care re: knowledge of prevention of skin breakdown	67
24.	Years experience of registered nurses at primary level of care re: knowledge of maintenance of skin integrity	68
25.	Years experience of registered nurses at primary level of care re: knowledge of maintenance of nutritional status	69
26.	Years experience of registered nurses at primary level of care re: knowledge of maintenance of nutritional status	70
27.	Years experience of registered nurses at primary level of care re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status	71

## CHAPTER 1

### INTRODUCTION

#### 1.1 Background to the study

In August 1996 a task team, the BTT, headed by the Ministers of Health and Local Government in the Western Cape, was established to investigate further governance of primary health care (PHC) (see definition of terms, page vii). This task team found that there was fragmentation and duplication throughout the health services. It recommended that all PHC services within a defined geographical area be amalgamated under a single authority, namely the district health system (DHS) (Department of Health and Social Services, 2000).

With this amalgamation the BTT proposed that all the services that are rendered to the client should be supplied under one roof and at the same time. A one-stop approach was envisaged for clients accessing PHC. The BTT further suggested that for these amalgamated services to be effective, they should be nurse-driven. With this concept (PHC being nurse-driven) it was proposed that registered nurses (see definition of terms, page viii) should render a preventive, promotive and curative service (see definition of terms, page vi) to the client, with a medical officer on hand in case there was a need for assistance. In addition to these services, nurses were expected to render a rehabilitative service in the form of district visits to clients in the community (see definition of terms, page v).

Some of the tasks that the registered nurses are expected to perform during these visits is managing pressure sores and skin ulcers through education and treatment programmes. A major thrust of rehabilitation (see definition of terms, page viii) should be the prevention of development of the conditions mentioned above which may later lead to impairment (see definition of terms, page vi) through health promotion and education.

For the past seven years the researcher, a registered nurse under the auspices of the Human Resource Development and Training Section (HRD & T) of the Department of Health, Metropole Region, has been working actively in the Helderberg area. This area, which comprises the study area, covers a radius of 33,6 square kilometres. According to the South African census of 1996, the Helderberg area has a population density of 121 433 persons. Currently the population in this area is estimated at 150 000. There are eight combined community health centres (CHC's)/clinics (see definition of terms, page v) within the boundaries of the Helderberg area, namely Macassar CHC,

Somerset West clinic, Ikhwezi CHC, Gordon's Bay clinic, Sir Lowry's Pass clinic, Strand CHC, Fagan Street clinic and Gustrouw/Rusthof CHC. These facilities render a combination of preventive, promotive and curative services to the clients at primary level of care.

Another function of the CHC's is to monitor the type of diseases that are seen in that area. The aim of this is to see that programmes offered at the CHC's are relevant to the incidence of disease in that area. It has been noted that in the Helderberg area that diseases of life style (see definition of terms, page vi) are on the rise. Between August and October 2002 approximately 28 489 patients attended the health facilities in the study area. Approximately 755 of these were clients with hypertension and 333 were clients with diabetes (Helderberg Administration, 2002). A random audit of files of the clients with diabetes and hypertension showed that approximately 50% of the clients suffered from both diabetes and hypertension. Eighty percent of the diabetic clients were overweight and 60% of the diabetic clients also had other related problems, e.g., boils and ulcers that would not heal. Forty percent had foot problems. Approximately 70% of the clients with hypertension were overweight, while 80% of them had related cardiovascular problems, e.g., stroke, chest pain and congestive cardiac failure.

Related literature shows that there is a definite link between diabetes and hypertension (PGWC, 1999). The narrowed arteries as a result of constant high blood sugar levels can lead to several complications. Narrowed arteries in the brain result in stroke, and narrowed arteries in the kidneys may result in kidney failure and high blood pressure (PGWC, 1999). Three aspects, namely skin integrity, foot care and nutrition of clients with diabetes and hypertension are interlinked. A deficient diet, e.g., a folic acid shortage can lead to the development of poor skin integrity. This may lead to the development of pressure sores, which may complicate to the development of gangrene, and inevitably the amputation of a limb (Bloom, 1986). It is also known that in clients over 50 years of age, the incidence of gangrene of the lower extremities is 60 times greater in the client with diabetes, than in non-diabetics (Netter, 1995). Two pathological processes occur simultaneously in the diabetic leg:

- *Peripheral neuropathy:* Changes occur in the nerves and the peripheral blood vessels of the lower limbs that result in absence of pain and sensation that may lead to trauma of the feet, which in turn may lead to ulceration.
- *Occlusion:* Diseases of the blood vessels, such as hardening of the arteries (atherosclerosis) or narrowing (arteriosclerosis) of the larger vessels may lead to gangrene of the lower limb

that could result in septicaemia, amputation and even death. Clarke (1995) states that 19 out of 20 (95%) of all non-traumatic amputations are caused by diabetes.

Statistics from the South African population census of 1996 indicated that 7% of the population of South Africa, which is equivalent to 2 657 714 million persons, have disabilities (see definition of terms, page vi). In the Western Cape, 2,8% of the population are physically disabled, totalling 1 227 967 persons (South Africa, 1996).

The researcher, as one of the training officers, has the responsibility to see that the registered nurses working at primary level of care in the Helderberg area have sufficient skills to manage conditions that are prevalent in the CHC's/clinics. The researcher noted from the nurse's curriculum that emphasis is placed on the preventive and curative side of nursing, with little or no focus on prevention of conditions classified under rehabilitation. Some of the types of preventative care that the nurse's curriculum cover are immunisation of babies and screening for tuberculosis, but there is nothing that is related to the prevention of complications that result from diseases of life style, such as diabetes and hypertension.

The prevailing situation regarding the increase in diseases of life style in the Helderberg area, raised concern with the researcher. It was noted that, though prevention is part of some aspects covered in the nursing curriculum, there is very little education taking place regarding the complications arising from diabetes and hypertension, such as skin breakdown, that may lead to the development of skin ulcers.

Another reason why the researcher was concerned is that there has always been a misconception that aspects of prevention of complications of hypertension and diabetes, such as skin ulcers, insufficient foot care and gangrene are covered by the role of the rehabilitation professionals, e.g., physiotherapists and occupational therapists. There is only one physiotherapist in the Helderberg area rendering a service to the community. This therapist is based at Rusthof/Gustrow CHC and Macassar CHC. According to the change list of the Helderberg area, there are no other rehabilitation specialists on the staff establishment (Helderberg Administration, 2002). Due to the geographical size of the study area and the location where the therapist is stationed, her services are not accessible to some of the clients in the Helderberg area. Clients, in particular those that have diabetes and hypertension, are deprived of the services that could prevent complications that could lead to impairment. This implies that registered nurses that see clients with diabetes and

hypertension should have competent knowledge of management of these conditions, including recognising when to refer for rehabilitation.

Taking all the abovementioned factors into consideration, and the concept that the nurse will become the cornerstone of the health facilities at primary level of care, the researcher had to ask herself the following question: “*Does the registered nurse at primary level of care have sufficient knowledge regarding skin integrity, foot care and nutrition of a diabetic client with a stroke?*” Hence, the aim of this study is to assess the knowledge of registered nurses working at primary level of care in the Helderberg area in respect to skin integrity, foot care and the nutritional needs of a diabetic client with a stroke.

## **1.2 Significance of the study**

Knowledge through education is not only a necessity *of* life; it is a necessity *for* life. What is taught, who teaches it and how it is taught are of crucial significance in the educational process (Searle, 1988). Factual knowledge is speedily outdated and for the nurses to meet the challenge of changing knowledge, it is the duty of educators to develop independence of thought and the ability to apply what they have learnt to the field in which they are working (Searle, 1988).

Since it has been shown that diseases of life style are on the rise in the Helderberg area, the study will hope to expose gaps in the knowledge of the registered nurse regarding skin integrity, foot care and nutritional problems in order to prevent the onset of secondary impairment, such as the loss of a limb, or the development of a pressure sore as a result of the complications as mentioned. The length of stay for the management of clients with pressure sores can take up to four months or even years, depending on the severity of the sore, costing the State approximately R500.00 per day for a bed alone (2002 prices). Hospitalisation has a major impact on all spheres (physical, psychological, social and emotional) of the life of the client (Ellis & Nowlis, 1989).

Following an amputation of a limb as a result of the development of gangrene, there is a possibility that the client may require an artificial limb. Government (State)- supplied artificial limbs cost in the vicinity of 10% of the total cost of the limb, which is approximately R1700.00 for a below knee prosthesis and R8140.00 for a full tilting table prosthesis (2002 prices).

The outcome of this study will assist government to save money on artificial limbs and other supportive devices, such as wheelchairs, for clients who have developed impairment arising from



diseases of life style. The registered nurse will be able to recognise complications that arise from diabetes and hypertension, namely stroke and can then deliver a comprehensive service to the client at primary level of care. This will prevent complications that lead to impairment that may further lead to permanent disability. It is the researcher's desire, as a training officer, to compile a training programme that will meet the needs that may become apparent during this study.

## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

The primary aim of the study was to assess the knowledge of registered nurses working at primary level of care in the Helderberg area in respect of skin integrity, foot care and nutritional needs of a diabetic client with a stroke. To address the literature review underpinning this study, the researcher covered the international, national, provincial, district and Helderberg perspectives of primary health care (PHC), the registered nurse at the PHC setting and her role in the management of clients with complications of diseases of life style, e.g., diabetes and stroke at the primary level of care. The researcher also included in the literature review an overview of both diabetes and hypertension concepts, and the underlying complications that result from lack of comprehensive health care (definition of terms, page v).

##### 2.1.1 Perspective of PHC internationally

Internationally the history of PHC was born on September 12, 1978 when the World Health Organisation (WHO) developed the concept *Health for all by the year 2000*. It called for the attainment of an acceptable level of health care to be evenly distributed among the population. PHC was the key to attaining this target as part of development in the spirit of social justice (definition of terms, page viii) (Winberg, 1996).

The conference at Alma Ata was assembled as a result of the international sense of despair at inadequate health care. It also aimed to rationalise the highly technical approach to health care and to broaden the cover of provision of better basic services to the population (Denhill *et al.*, 1999).

Health is a fundamental human right and the attainment of the highest possible level of health is a most important world wide social goal, the realisation of which requires the action of many other social and economic sectors, in addition to the health sector (Winberg, 1996).

At the conclusion of the Alma Ata conference a declaration of intent, The *Alma Ata Declaration*, was drawn up. It set out principles, elements and pillars in terms of which PHC services can be universally established (Denhill *et al.*, 1999).

These principles, elements, and pillars emphasised the importance of community development, accessibility of health care services, including resources for maintaining a basic healthy life style, and government taking responsibility for seeing that human rights are implemented and respected. Table 1 outlines the key principles, elements and pillars of PHC that are contained in the *Alma Ata Declaration* of 1978.

**Table 1. Principles, elements and pillars of PHC**

<b>FIVE PRINCIPLES</b>	<b>EIGHT ELEMENTS</b>	<b>NINE PILLARS</b>
▪ Equitable distribution	▪ Health education	▪ PHC is a human right
▪ Community involvement	▪ Water and sanitation	▪ Government's responsibility
▪ Focus on prevention	▪ Food and nutrition	▪ Accessible
▪ Appropriate technology	▪ Maternal and child health (including reproductive health)	▪ Relevant to country's situation
▪ Multi-sectoral approach	▪ Expanded programme on immunisation (EPI)	▪ Relevant to the community's needs
	▪ Control of local diseases	▪ Part of country's development
	▪ Treatment of minor ailments	▪ Controlled by the community
	▪ Essential drug supply	▪ Integrated with other health systems
		▪ Relies on community workers (Winberg, 1996)

Table 1 indicates that the WHO envisaged a service that is relevant to each country's situation. The principles were set in such a way that health services are relevant to the community's needs and form an integral part of the community. Community members, fulfilling the role of community workers, control it. PHC focuses on priority areas, namely the eight elements. With the focus on the eight elements, it empowers the community members, within the community, to take control of their lives. By taking control, they have the ability to heal within themselves and also the power to empower the next person.

Furthermore, Vlok (1996) emphasised that PHC is not a privilege, but a human right that must be distributed equitably with the focus on primary, secondary and tertiary prevention (see definition of terms, page vii and viii), making use of appropriate technology to enhance the process.

As a result of the conference at Alma Ata, many countries started to analyse their own health situation and looked at how to implement the elements, principles and pillars set out at the conference in line with their own country's economic, social, political and cultural background, keeping tabs on the available resources.

### **2.1.2 Perspective on PHC nationally**

Although South Africa embarked on a series of PHC experiments and started implementing the elements, principles and pillars of PHC, the political situation in the country at that time prevented the country from being present in 1978 when the concept of PHC was born and the Alma Ata Declaration formulated.

The health system in South Africa had evolved from different origins. The two main contributors were Western medicine and the various African cultures with their traditional medicine. This has resulted in the development of two health systems in this country, alongside each other, with Western medicine having official status (Denhill *et al.*, 1999).

Health reform in South Africa started in the 1970s with the economic recession. The result was a swing in the direction of self-reliance and privatisation, to try and reduce the financial burden of the state (Denhill *et al.*, 1999).

In 1986 the government formulated a National Health Plan, with the objective of meeting the health needs of all the inhabitants of South Africa. This plan was based on the Alma Ata principles of comprehensive PHC and gave a firm political commitment to the implementation of such a service (African National Congress (ANC), 1994a). The emphasis was on the prevention of disease and the promotion of health through community-centred services that advocate community participation and a multi-disciplinary approach (Denhill *et al.*, 1999).

Emphasis on PHC was taken a step further in 1989 when the National Health Policy Council accepted a resolution stating that the only way to provide an affordable health service to all the inhabitants of the Republic of South Africa, was by means of a partnership between the state and

the private sector based on the National Health Service Plan, with the emphasis on PHC. This new direction for health was given statutory backing by the National Policy of Health Act, No 116 of 1960. The Act emphasised the following four principles contained in Table 2:

**Table 2. National principles of PHC**

<ul style="list-style-type: none"> <li>▪ Individuals should take responsibility for their own and their family's physical, mental and social well-being.</li> </ul>
<ul style="list-style-type: none"> <li>▪ Cost incurred by individuals for health care should be recovered by themselves, but the indigent must be accommodated.</li> </ul>
<ul style="list-style-type: none"> <li>▪ The private sector should be encouraged to provide health services that are in the interest of the public.</li> </ul>
<ul style="list-style-type: none"> <li>▪ State and local authorities should provide a comprehensive health service that takes into consideration all available resources (Denhill <i>et al.</i>, 1999).</li> </ul>

Table 2 shows that PHC should not only be equitable and comprehensive, but also that the people cannot just rely on government to provide health care, but should take responsibility for their own and their family's health.

In May 1991 Government's intention to provide PHC for all people of South Africa was made clear in the National Health Service Delivery Plan. This document stated that an affordable, comprehensive health service should be developed during 1990 to 1995 that would be planned according to priorities identified by the communities themselves. The plan included the following:

- Reorganisation of health services to regional and local level, with the local authorities taking responsibility for most PHC services.
- Health services to be democratised and community participation to be advocated.
- The right of admission of all population groups to public hospitals.
- The introduction of community-orientated training of health personnel.
- The formula for health financing should make available more funds for PHC clinics (Denhill *et al.*, 1999).

In 1986 the Department of National Health and Population Development established a committee on PHC to identify ways to implement the National Health Plan. A document was produced to identify strategies or plans of action for implementing PHC in South Africa. National strategies took into consideration political, social, economic and technical factors (Denhill *et al.*, 1999).

In 1992 objectives were set out by the Department of National Health and Population Development for the elements or components of PHC as set out by the WHO. Eight objectives were identified, and to meet them, a plan of action and a process of implementing them were decided on, with target and time limits for each step. Table 3 depicts the eight objectives as set out by the Department of National Health and Population Development.

**Table 3. Objectives of the Department of National Health and Population Development**

◆ To make information concerning the prevailing health problems and the method of preventing and controlling them, available to the public.
◆ To promote the provision of food and proper nutrition.
◆ To ensure an adequate supply of safe water and basic sanitation.
◆ To ensure the provision of maternal and child health services.
◆ To ensure immunisation against the major infectious diseases.
◆ To prevent and control local endemic diseases.
◆ To treat diseases and injuries appropriately.
◆ To ensure the provision of essential medicine (Denhill <i>et al.</i> , 1999).

Table 3 shows that the Department of National Health and Population Development aimed at providing a service ranging from a preventative service to a curative service, whilst making ultimate use of different components of health to provide a comprehensive service to the people of South Africa.

Over the years progress was made towards attaining many of the objectives given above. However, the lack of information available, especially in the rural areas, made the identification of community needs difficult and as a result, the planning of health services was inefficient (Denhill *et al.*, 1999).

Although PHC formed an important part of the previous South African health system, equality, affordability, acceptability, accessibility, availability, effectiveness and efficiency of health services still needed to be addressed if the goal of optimal health for all South Africans was to be obtained (Denhill *et al.*, 1999).

Earlier health plans in South Africa, commissioned in 1944, recommended a countrywide network of health centres as a basis for fundamental health reform in South Africa. Forty health centres were established. Eight of these centres were linked to the university of Natal. The institution-

trained staff for health centre teams included a new category, *health recorders*, to maintain community, household and family records.

Although abruptly and prematurely curtailed by the political events following the change of government in 1948, the abovementioned efforts caught the international attention, but as a result of the political climate in the country, it failed to build upon this. It cost the country dearly, not only in fundamental terms, but also, and more importantly, in terms of preventable diseases, disability and death (Katzenellenbogen *et al.*, 1997).

In the period between 1950 and the mid-1970s the science of epidemiology was developed as a critical tool both in the description of disease and in monitoring the control of disease (one of the eight elements of PHC). Many diseases were notifiable and the research scientists used routinely collected data to develop hypotheses about causation and distribution of disease. The work done on the Coxsackie virus, poliomyelitis and rickettsial disease had strong epidemiological foundations. During this time a massive survey of Soweto school children revealed many cases of advanced and previously undetected cases of rheumatic heart disease. Work like this stimulated a number of major attempts at the control of rheumatic heart disease.

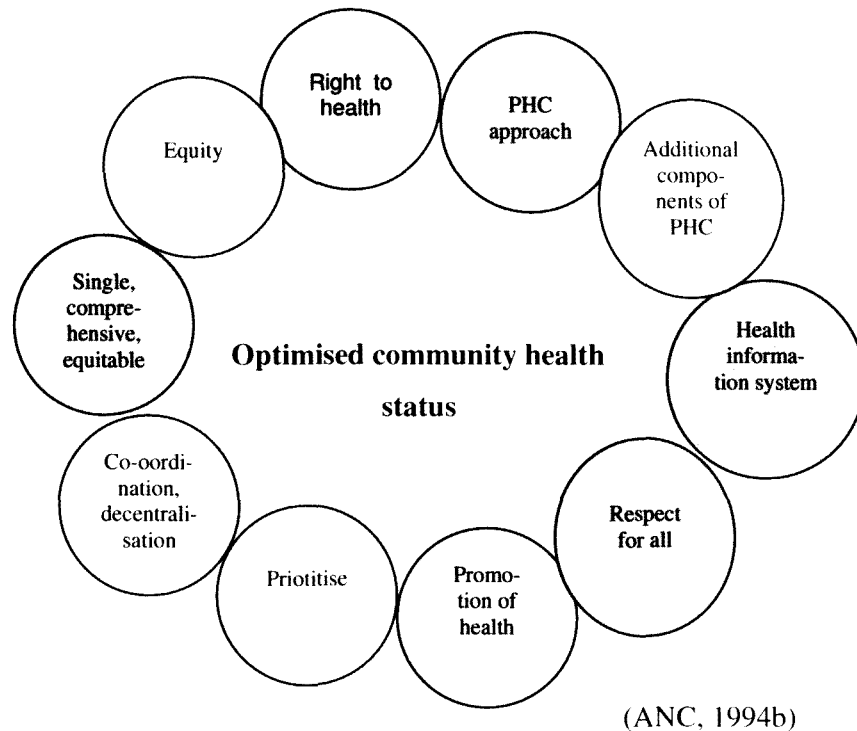
Unfortunately the major killers in South Africa, namely gastro-enteritis, pneumonia, malnutrition, violence, tuberculosis, cervical cancer, cardiovascular disease and diabetes did not receive the attention they needed as priority conditions. Information about the distribution, causation and control of many of these disorders remained inadequate. There was no base-line information about how effective interventions had been (Katzenellenbogen *et al.*, 1997).

From the 1980s there was a shift and a new generation of epidemiology emerged. It addressed quality and provision of care, and it confronted unequivocally the inequalities in mortality rates among South Africa's population groups. It revealed inequalities in expenditure on health between the white and black populations, and pointed out the unsatisfactory working conditions of most of South Africa's labour force (PHC is a human right, one of the nine pillars of PHC) (Katzenellenbogen *et al.*, 1997).

The final draft of the Health Plan of the ANC was made available to the public in May 1994 at the time when the party came into power in South Africa after winning the first democratic elections ever held. This plan was based on the belief that every individual has the right to achieve optimal

health. Aspects of the plan were clarified in the White Paper on Reconstruction and Development (RDP) that was published in September 1994 (ANC, 1994b).

Figure 1 below represents the ten principles that were drafted by the ANC as part of the National Health Plan.



**Figure 1. Principles of the ANC Health Plan**

Figure 1 show that the abovementioned strategies are interlinked, and their aim is to provide an effective, accessible and affordable service to the community to optimise the health status of the people.

When re-thinking the whole concept of the PHC approach, at both international and national levels, similarities and differences become apparent.

Both approaches, internationally and nationally, stem from an initiative from the WHO. They both concentrate on fundamental aspects such as community participation and community involvement. The approach is based on the needs of the community, controlled by the community and integrated with other health systems. Both approaches concentrate on priorities, i.e. children, the disabled and people living with debilitating conditions, such as diabetes and heart disease (Vlok, 1996). South



Africa, like other countries, also places a strong focus on the priorities as mentioned, but then South Africa is unique in its own way (Maseko, 1995). The country covers a vast area of the African continent and accommodates a large variety of occupants. The country is divided into nine provinces with eleven official languages. The occupants range from people living in the former homelands to the modern city dweller. The population distribution covers a vast spectrum with a large population of children and elderly people as a result of the ongoing improvement in medical technology. The population forming the workforce in South Africa is representative, but the country is also burdened with a very high unemployment rate, and currently 40% of the population are infected with HIV and AIDS (South Africa, 1996).

In addition to the above the citizens of the country also vary on many levels. They differ in terms of culture, world-views, levels of education, likes and dislikes and levels of income, to mention only a few (Human, 1996). To suit the specific needs and demands of a country as unique as South Africa, Government added an additional three elements to the already existing eight that are respected nationally and internationally, namely emergency care, occupational health and mental health (Denhill *et al.*, 1999).

### **2.1.3 Perspective of PHC on provincial and district level**

Prior to 1994 the country consisted of four provinces, namely the Cape Province, Natal, the Orange Free State and Transvaal. Recognition was given to the African languages, but only English and Afrikaans were accepted as official languages. Medical services were fragmented, with only a small percentage of the population having access to medical services (Department of Health, 1996).

After the 1994 elections the country was divided into nine provinces, namely Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, Mpumalanga, Northern Cape, Northern Province (now known as Limpopo), North West Province and the Free State. Eleven languages were declared official languages of the country. They are English, Afrikaans, Tshivenda, Isixhosa, Setswana, Seshoto, Siswati, Sepedi, IsiNdebele, Sitsonga and IsiZulu. Each province has its own government, dealing with issues that affect that specific province only. The health plan adopted by the provinces believed that every individual has the right to achieve optimal health (Republic of South Africa, 1996). The Western Cape, which is the province in which the Helderberg area, is situated, is a province with many cultures. The main languages spoken are English, Afrikaans and Xhosa. With the diversity of cultures it is a major challenge for the health services to accommodate all the people living within its boundaries. The health system is not only supplying medication to the sick, it is an

embodiment of all aspects of health care to render a comprehensive service to the benefit of the client.

The changes planned for the health services in 1994 were PHC-based, and aimed to decentralise services with the emphasis being placed on community care. The aim was to decentralise management and to introduce district health systems. To achieve this goal, a multidisciplinary health team approach to health was necessary, which had to include both public and private providers, as well as adequate input from support services, such as laboratory services and pharmaceutical suppliers (Denhill *et al.*, 1999).

At central (national) level, there will be a single National Department of Health, which will be led by the Minister of Health. The National Health Authority, a body under the direction of the Minister of Health, is responsible for the provision, development and co-ordination of all health care in South Africa. This body allocates the health budget and is responsible for health policy and legislation (Denhill *et al.*, 1999).

#### **2.1.3.1 The Western Cape**

At the second tier of government (provincial level), there are nine provinces, one of which is the Western Cape. Like the other provinces, it has its own provincial legislature. Each provincial authority is responsible for all aspects of health care required by the people of that province, which include emergency care, hospital care, environmental safety and a suitable referral system. These provincial authorities are also responsible for the support, monitoring and evaluation of services provided at district level (Denhill *et al.*, 1999).

At district level each province was divided into districts according to functional and demographical determinants. The size of each district was determined by the size of its population. The district health authorities will be accountable for the elected political authorities, and all community health services, private and public, will be their responsibility.

The most important function of the district health authorities will be to provide PHC services to all members of the community. These authorities will receive and allocate the budget to supply these services. Services will include clinics, CHC's, community hospitals and emergency services (Denhill *et al.*, 1999).

As a further step in setting up a district health system, the Ministers of Health and Local Government in the Western Cape Province established the BTT to investigate the future governance of all PHC services in the Western Cape.

The BTT reviewed the existing pattern of delivery of PHC services and found substantial fragmentation between provincial and local government with inefficiencies and duplication throughout these services (Department of Health and Social Services, 2000).

A brief analysis of the PHC system in the province revealed that there was a lack of systematic organisation of these services with little structured co-ordination between the different providers. While it was accepted that not all areas could have exactly the same structure, organisation and types of health services and facilities, greater standardisation and a move to equity were essential. There was a need for a simple and well-organised system for PHC, which would allow for more effective and efficient utilisation of the available resources.

In order to overcome the fragmentation in the system, the BTT concluded that the key to improving the system was to place all PHC services within a defined geographical area, under the control of a single authority, namely the district health system (DHS).

The second finding of the BTT was that all provincial PHC services, together with their resources, should be transferred to local government. This would allow local governments to amalgamate all PHC services in geographically defined areas into a single system.

On the basis of the findings by the BTT the proposed new system would function as follows:

- The local municipality would become the basic building block of the entire health service. All PHC services within the boundary of the local municipality will be managed as a single unit, either under the management of the local municipality or that of the district municipality, depending on the administrative capacity of the various municipalities or by agreement between the province and the relevant governments.
- The new system would allow for the most effective co-ordination of PHC services in a local municipal area. It would allow for the management of all PHC services to fall under a single authority. The simple management reform would optimise the use of all resources, particularly finances, staff, equipment and support services, and would allow for the

improvement of the services as a whole. Local management autonomy would increase initiative and creativity, a sense of responsibility and local accountability to and participation by the community.

- PHC services should be integrally linked to hospital and other services, and local government would be expected to deliver a total package of PHC services, namely core packages consisting of the following services: community-based services, mobile clinics and CHC's (Department of Health and Social Services, 2000).
- PHC services should be nurse-driven, with a medical officer on hand in case there was a need for assistance.

It was suggested that the personnel working in health be transferred from PGWC to the municipalities through integration of services and the establishment of the district health system. The transfer of the staff will be regulated by the relevant regulations, and it will take place on a voluntary basis. There has to be the minimum disruption of service delivery during transition, the process of amalgamation should be fair and equitable, and the entire process should be conducted in the spirit of co-operative governance.

The BTT proposed a package of services to be provided within each municipality designated to render PHC services. The core package was divided into the following PHC services, namely community-based services, which include school-based services, old age homes, day care centres, correctional services, places of safety, the workplace, nongovernmental organisations and crèches, mobiles, which render promotive and preventive services, school health services, ante- and postnatal care, a curative service (excluding acute cases) and chronic disease follow-up, clinics, which include all the services rendered by the mobiles plus a wide range of curative services, minor trauma and emergency services, nurse-provided rehabilitation services and community outreach services, and lastly CHC's, which render all the services listed under clinics plus a wider range of curative services, primary level trauma, emergency services, rehabilitation services provided by physiotherapists and occupational therapists, dietician services and social worker services (Department of Health 2001a; 2001b).

The services mentioned are the essence of the service to be provided. The principle is to make the package at each level as comprehensive and as integrated as possible. It is a client-centred

approach and allows for the client to receive as many services at one point of delivery as are available (Department of Health and Social Services, 2000).

#### 2.1.4 Perspective of PHC at community/local/regional level

At community level, each community living in a geographically defined area served by community health services, will be encouraged to form an inter-sectoral community development committee. This committee will advise and work in co-ordination with the community health committee on all development projects as well as the use of resources in the area.

The Community Health Committee will consist of elected community members who will serve on a voluntary basis. Representatives will be drawn from the health services, nongovernmental organisations and health practitioners in the area. They will help to prioritise health needs and will determine local health policy. The CHC's and the clinics in each district form the heart of the district health service and provide preventive, promotive, curative and rehabilitative care (Denhill *et al.*, 1999).

##### 2.1.4.1 Perspective of PHC in the metropole region

The metropole region houses municipalities or administrations (LA), as well as CHC's run by the Community Health Services Organisations (CHSO), under the auspices of PGWC. Both these two institutions render preventive, promotive and curative services to the clients at primary level of care.

Table 4 depicts the composition of the clinics and CHC's of the LA and CHSO.

**Table 4. CHC and LA facilities within the Western Cape**

ADMINISTRATION	LOCAL AUTH. CLINICS (LA)	COMBINED LA & CHC FACILITIES	SATELLITE CLINICS	MOBILE CLINICS
South Peninsula Municipality	15	2	0	1
Blaauwberg Municipality	3	0	6	3
Central Municipality	32	0	5	1

Tygerberg Municipality	24	5	5	1
Helderberg Municipality	8	2	1	0
Oostenberg Municipality	13	2	1	1

Table 4 illustrates the distribution of services rendered in the metropole region, by the CHSO and LA.

There are a total of 34 CHC's and 80 LA clinics. At the CHC's, curative services are rendered to the client, with a lesser degree of preventive services. At the LA clinics, preventive services are rendered with a lesser degree of curative services. At the combined centres a combination of services is rendered to provide a comprehensive service to the client (Department of Health and Social Services, 2000). In the Helderberg area, the study area, there are eight CHC's/clinics rendering a service to clients at primary level of care. A detailed presentation of the Helderberg area follows.

#### **2.1.4.2 The Helderberg perspective on PHC**

The Helderberg area, situated within the metropole region, where the study took place, covers a radius of 33,6 square kilometres (see Figures 2a and 2b). It stretches from Macassar to the foot of Sir Lowry's Pass and has an estimated population of 170 000, with the biggest concentration of people living in informal settlements, namely Lwandle with approximately 6 069 people, Nomzamo with approximately 106 310 people, Sir Lowry's Pass village with approximately 4 343 people, and Ikhwezi Park with approximately 1 611 people. It is estimated that the population of these areas increases by approximately 1000 people per month, primarily due to people migrating from the rural areas in search of employment (University of the Western Cape (UWC), 2002).

Figure 2a below, depicts the Helderberg area within the metropole region. The Helderberg area is section H on the map, and is marked in orange.

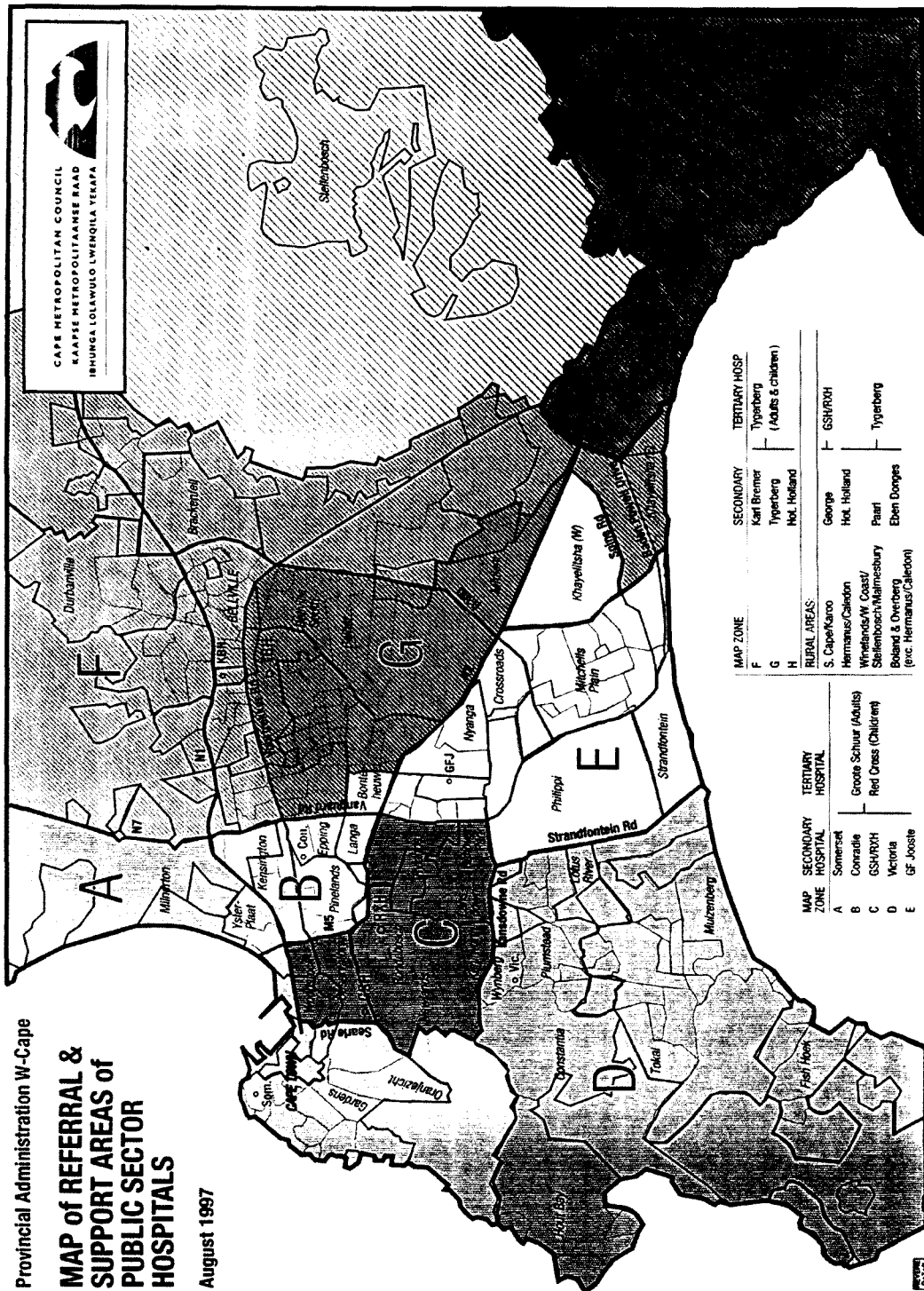
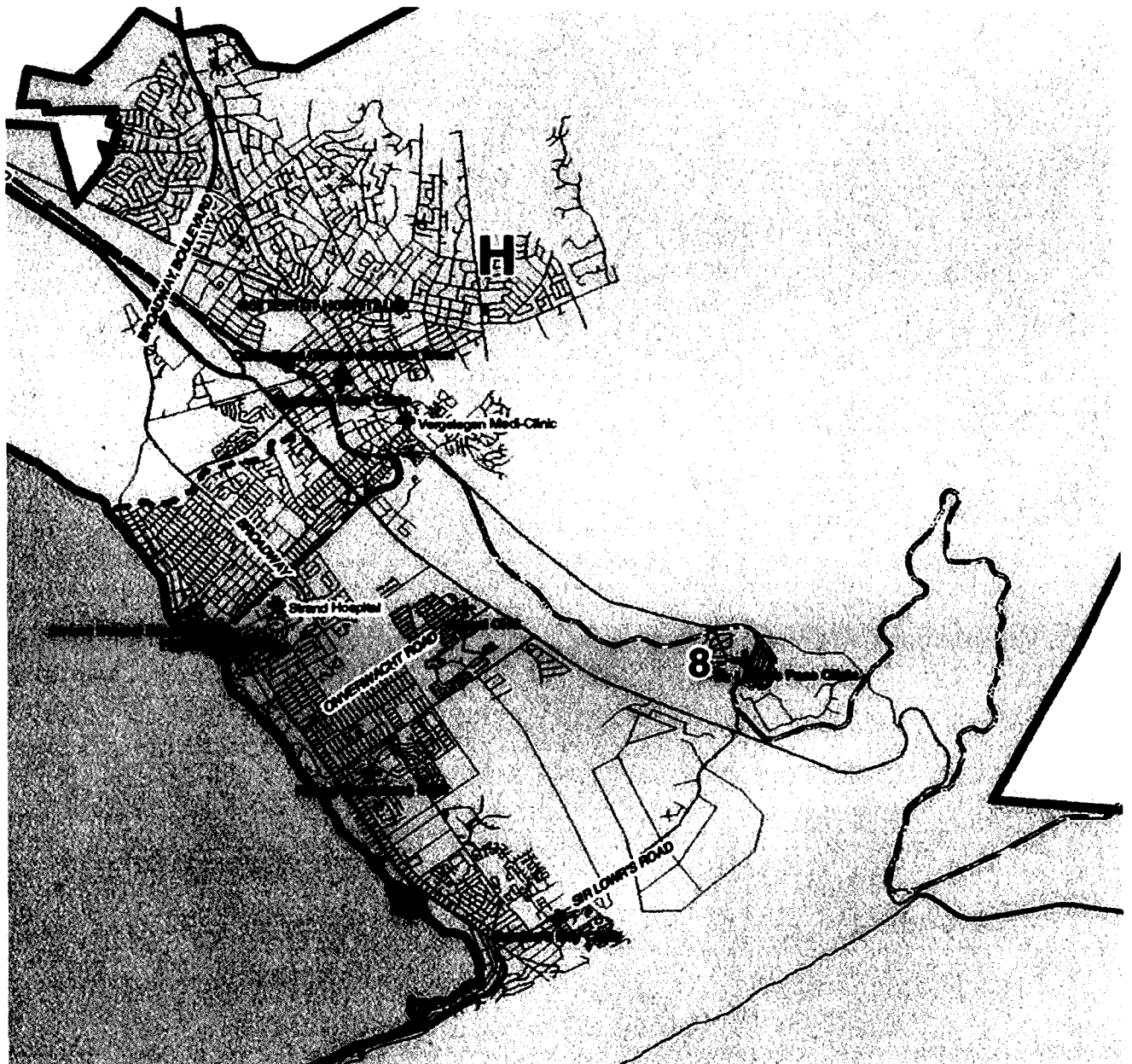


Figure 2a. Map of the Helderberg area within the metropole region

As mentioned, figure 2a depicts the Helderberg area. Within this area, there are eight CHC's/clinics rendering a service to the clients at primary level of care. Figure 2b depicts these CHC's/clinics.



**Figure 2b. The eight CHC's/clinics within the Helderberg area**

Figure 2b depicts the eight CHC/clinics, namely Macassar CHC, Somerset West clinic, Fagan Street clinic, Strand CHC, Rusthof/Gustrouw CHC, Ikhwezi CHC, Sir Lowry's Pass clinic and Gordon's Bay clinic within the boundaries of the Helderberg area.

The researcher has been actively working in the study area under the auspices of Department of Health, and has come to know the composition of the people living in the area. The occupants of the Helderberg area range from the affluent, residing mainly in Somerset-West, Strand and Gordon's Bay to the very poor in informal settlements. The middle class population reside in these



areas as well, working in and around the area. The largest part of the community, mostly people of African origin, resides in the informal settlements. In this area, there is a high unemployment rate. The above statement is supported by the 1996 census that shows 40% figures of unemployment.

With the influx of people from the rural areas into the informal settlements, and the loss of employment in the area, this number has increased substantially. In the current economic climate with employment opportunities diminishing, the unemployment rate is steadily increasing, leaving more and more people without an income. These people make use of the CHC's/clinics for medical care. According to the random monthly statistics (Helderberg Administration, 2002), between 26 046 and 28 489 people attend the CHC's/clinics on a monthly basis. These figures are for all race groups and all age groups. The additional load of people does not only place an additional burden on the already exhausted budget of the Helderberg Administration, but also adds to the workload of the staff rendering a service. They do not only demand physical time of the staff, but there is also big demand for knowledge and skills.

In the study area, the team (see definition of terms, page viii) namely the doctors, registered nurses, dentists, physiotherapist and pharmacists, to mention just a few, are rendering a service at the eight CHC's/clinics, namely Macassar CHC, Somerset West clinic, Fagan Street clinic, Strand CHC, Rusthof/Gustrouw CHC, Ikhwezi CHC, Sir Lowry's Pass clinic and Gordon's Bay clinic. These facilities are staffed by both LA and CHSO staff. The staff members include approximately 50 registered nurses, 6 medical officers, 1 dentist and his assistant, an oral hygienist, 3 pharmacists and their assistants and 1 physiotherapist. Health educationalists, administrative staff, office assistants, general assistants, nutritional educators, and lay counsellors complete the compliment of team members. These team members all function as part of a multi-disciplinary team to render the necessary services to the clients at primary level of care (Helderberg Administration, 2002).

The staff component mentioned above renders a service to between 622 to 755 clients with hypertension and between 214 to 333 clients with diabetes on a monthly basis. These clients attend the facilities on days that the chronic club (see definition of terms, page vi) facilities are available to the clients. At these clubs the diseases of life style are addressed. Tests, such as blood pressure monitoring, weight management and blood glucose monitoring, are done. Medication is monitored and adjusted as needed, and additional problems that may present, such as complications of these conditions, namely recurrent skin infections, ulceration of the skin due to circulatory insufficiency, nutritional problems and foot problems of both the clients with diabetes and hypertension are addressed.

The volume of clients and the number of different team members per qualification makes it imperative for all the categories of staff to be aware of each other's functions. They should be able, within their own scope of practice, to render help to one another in order to lighten each other's burden and to render optimal service to the client.

According to a Draft Report of the Department of Health: Branch Operations: Chief Directorate Metro Region: Director Community Health Services Organisation: Investigation into the creation of posts for Clinical Nurse Practitioners at Community Health Centres, the 2010 vision, it was suggested that there should be a shift away from the doctor-driven service to a nurse-driven service to enhance cost-effectiveness. An ideal mix for medical officers and registered nurses at primary level of care is sought after. If the suggestion is approved, a ratio of 80% registered nurses and 20% medical officers will apply. The complement of other categories of health workers as set out by the change list will continue to render a service (Department of Health, 2002a)

Professionals such as physiotherapists, of which there is only one employed in the Helderberg area, are not always available because of their limited numbers and the vast population to which they have to render a service. It is therefore imperative that the registered nurses and the medical officers should have some knowledge of certain aspects of rehabilitation, especially those aspects contributing to preventive care. This is in line with the recommendations of the BTT and the Draft Report of the Department of Health, as mentioned earlier.

A suggestion for Macassar CHC, one of the facilities in the study area, is that the staff component should consist of one principal medical officer, one medical officer and six registered nurses, compared to the two medical officers and the five registered nurses at present. Macassar CHC does not render a 24-hour service, but after hours reproductive health services are rendered. These services take place one night a week and the staff working at the health facility is responsible for the service (Department of Health, 2002a). Not only the staff mentioned for Macassar CHC, but all the medical staff employed in this area render a service to the clients, thereby attempting to improve the current health status of the population, and maintaining the human dignity of the client (see definition of terms, page vi). In the following section the prevailing health profile found in the Helderberg area, which further prompted the study, will be briefly discussed

### **2.1.5 Health profile in the Helderberg area**

The Helderberg area has a large industrial area, which leads to people migrating from the rural areas to the city in search of work. Unfortunately not all those seeking employment are successful, and this leads to a rising number of unemployed. According to the South African census of 1996 the unemployment figure exceeds 40% of the population of this area.

In the current economic climate with unemployment, as mentioned, being rife, people live in poverty in the abovementioned areas, as well as in the other areas covering the Helderberg area, leading life styles that may not be conducive to health. It may lead to these people contracting diseases that may leave them with permanent disabilities. Because of westernisation people are exposed to life styles that are different from those of the rural areas. Their eating patterns change from that of a more natural diet to a more refined diet that may be detrimental to their health. Exposure to environmental factors such as tobacco products, alcohol, the lack of certain foodstuffs and the consumption of harmful but cheaper foodstuffs, may change their way of life, thus making them more vulnerable to disease (Burgess, 1992).

The other side of the coin regarding nutrition is not the lack of nutrients, but the over-indulgence that has a detrimental effect on health. A new challenge now faces the developed affluent societies, namely how to combat the “non-communicable chronic diseases” as a result of over-nutrition and the unique life style-associated with wealth, abundance and affluence. It is a well-known fact that 7 out of the 10 leading causes of death are diet- and life style-related maladies (Mohammed, 1997). The food consumed appeals to the eye, pleases the taste buds and appears to be nutritionally satisfying. It is however rich in animal fat, cholesterol, refined sugar, processed fruits and vegetables and less fibre. Such a diet, although rich in nutrients, may very well be a life-threatening source of major health risk factors. Epidemiological studies to date have clearly established a correlation between the dietary pattern and the prevalence of “non-communicable chronic killer diseases”, also known as diseases of life style/civilisation/affluence, such as obesity, hypertension, diabetes and cardiovascular diseases (Mohammed, 1997).

As the affluent diet has spread, so too have the chronic non-communicable killer diseases, and their respective resultant disabilities, such as obesity, cardiovascular diseases, hypertension, kidney failure and various types of cancers. Obesity is one of the most common public health problems from which the majority of all cardiovascular problems arise. Obesity is associated with elevated blood pressure and is a major risk factor for diabetes (Mohammed, 1997). The results of an

insufficient diet pose a challenge to equip the PHC worker, which includes the registered nurse, with scientifically sound skills, knowledge and technical skills regarding comprehensive care of diseases of affluence. It is therefore extremely important that these PHC workers are trained and skilled to deal with these non-communicable chronic killer diseases and their prevention (Mohammed, 1997).

Two diseases of life style, namely diabetes and hypertension, may lead to complications such as stroke and skin ulcers if not managed correctly. It is known that if skin ulcers in the client with diabetes are not treated appropriately, it can inevitably lead to the amputation of a limb (Beeves, Lip and O'Brian, 2001).

The prevalence of both diabetes and hypertension are common from the age of 40 years and up (Beeves *et al.*, 2001). The population ratio in the Helderberg area shows that approximately 30% to 40% of the population in the area falls into the age category of between 40 and 85 years (UWC, 2002).

The CHC's/clinics in the Helderberg area, which is part of the greater Cape Town Administration, deal with clients presenting with the diseases of life style as mentioned. Although the CHC's/clinics cater for all age groups, rendering a preventive as well as a curative service, a large proportion of its clientele has diabetes and hypertension.

Between 662 to 755 of clients with hypertension and 214 to 333 clients with diabetes attend the eight CHC's/clinics in the Helderberg area on a monthly basis (Helderberg Administration, 2002). To be able to cater for these clients with their special needs, they have to attend the CHC's/clinics on specific days. The reason for this is that they attend the clubs for clients with chronic diseases of life style, of which diabetes and hypertension are two. At these clubs the diseases of life style are addressed. Tests, such as taking of blood pressure, weight management and measuring the blood glucose levels, are done to monitor the condition. Medication is monitored and adjusted if needed. Additional problems that may be present, such as complications of these conditions, namely recurrent skin infections, ulceration of the skin due to circulatory insufficiency, nutritional problems and foot problems, e.g., in-grown toenails and corns are also addressed. Although the curative treatment received at these visits to maintain the current health status is of vital importance, prevention is just as important.

With the appropriate education regarding these conditions of life style, possible complications may be completely averted. Complications might lead to the development of severe conditions, such as amputations in the client with diabetes, and stroke in the client with hypertension, with possible subsequent development of bedsores that may give rise to further incapacity/debilitation (Silman, 1988). Currently, with the increasing demand on the health services, the researcher is in doubt whether the registered nurse rendering a service at primary level possesses the necessary knowledge to render a comprehensive service to the client to prevent such complications.

Complications leading to disability/impairment do not only affect the client, but also have a ripple effect on the family. Disability may lead to loss of income, which in turn can lead to poverty. Not only does disability inflict on functioning, leading to activity limitations (see definition of terms, page v), it also imposes participation restrictions (see definition of terms, page vii) that can lead to financial implications, which may have a profound emotional effect on the functioning of the family. When the head of the household loses a limb because of complications of diabetes, it affects his role as a breadwinner, a husband, a father and possibly a community member. The family is unquestionably a very important concept for almost everybody (Allers, 2002).

The diseases on which this study concentrates, are diabetes and hypertension that may lead to stroke. Both these diseases are preventable diseases of life style. In the next section the researcher will explore the two conditions, namely diabetes and hypertension that may lead to the development of complications such as breakdown in skin integrity and nutritional deficiencies.

#### **2.1.5.1 Diabetes**

Diabetes occurs in the body either because of a lack of insulin or because of the presence of factors that oppose the action of insulin. The result of insufficient action of insulin is an increase in the blood glucose concentration (hyperglycaemia) (Watkins, 1998).

There are two types of diabetes, namely insulin dependent diabetes mellitus (IDDM), also known as diabetes type 1. Diabetes type 1 is due to the destruction of the B-cells in the pancreatic islet of Langerhans with resulting loss of insulin production. A combination of environmental and genetic factors which trigger an auto-immune attack on the B-cells is likely to be responsible, occurring in genetically susceptible individuals (Watkins, 1998).

There are numerous causes of non-insulin-dependent diabetes mellitus (NIDDM), also known as diabetes type 2, which include a wide range of disorders with differing progression and outlook. The underlying mechanism is due to either the diminished insulin secretion (i.e. an islet defect) or increased peripheral resistance to the action of insulin. As many as 98% of NIDDM clients are idiopathic, i.e. no specific causative defect has been found (Watkins, 1998).

Diabetes can occur at any age. Non-insulin-dependent diabetes is more common after middle age and often occurs between 50 to 70 years of age. In contrast, the peak incidence of insulin-dependent diabetes is between 10 to 12 years, but elderly people can also be insulin-dependent. Under the age of 30 there is a slight male predominance of diabetes (Watkins, 1998).

People with longstanding diabetes may develop complications that affect the eyes, kidneys, peripheral nerves or major arteries. When these organs are affected, it is known as end organ disease. The main arteries are affected in two ways. Coronary arteries are affected which leads to coronary artery disease, which is more common in diabetics than in non-diabetics. Secondly it affects the peripheral arteries that may lead to complications affecting the lower limbs (Watkins, 1998). If not cared for correctly with the necessary and relevant knowledge, this may lead to the development of foot ulcers, gangrene and inevitably the amputation of a limb (Watkins, 1998).

A client with diabetes has a 10- to 20-fold increased risk of non-traumatic amputation compared to non-diabetic clients, while 30% of diabetic clients develop peripheral neuropathy. The incidence of peripheral vascular disease also increases in a diabetic client. Foot care as part of managing the life style is of great importance and clients should receive the appropriate instruction (Young, 1997).

As mentioned previously, the coronary arteries are affected in diabetes. Hardening and narrowing of the arteries take place, leading to vascular problems, possibly resulting in ulcer formation, gangrene, possible amputation and it can also lead to increased blood pressure, which may lead to a stroke (Clarke, 1995).

Diabetes type 2 is often associated with overweight, and obesity (especially abdominal obesity), hypertension, atherosclerosis and other risk factors for cardiovascular disease, associated with insulin resistance are identified diseases of life style (Department of Health, 1998a). This statement was substantiated during a random audit of files of both clients with diabetes and hypertension. It showed that 50% of clients suffered from both diabetes and hypertension. Eighty percent of the clients were overweight, and 60% had related cardiovascular problems. Due to the disease process

of both diabetes and hypertension, both these two conditions can co-exist within the client, making them more susceptible to developing complications of these conditions.

Long-term management and supervision of diabetic clients is done at primary level of care. The approach towards caring for the diabetic client requires co-operation between all the team members and most importantly requires the necessary knowledge to address the problems with which the diabetic client may present in order to prevent the development of further complications that may impact negatively on the functioning of the client (Krentz, 1997).

#### **2.1.5.2 Hypertension leading to stroke**

In addition to diabetes, hypertension, also known as high blood pressure, is also classified as a disease of life style. In a national programme, adopted by the Department of Health in 1998, for the control and management of hypertension at primary level, the WHO defines being hypertensive as having a blood pressure reading higher than 160/95mmHg. The health risk of a given level of blood pressure is magnified by certain risk factors, e.g., obesity, unhealthy nutrition, diabetes mellitus, as a result of hardening and narrowing of the arteries, excessive alcohol intake, physical inactivity and smoking (Department of Health, 1998b).

Stroke is one of the most devastating consequences of hypertension, resulting not only in significant disability, but also in premature death (Lewis, 1989). In clients with hypertension about 80% of strokes are ischaemic, i.e. caused by arterial thrombosis or embolism from the heart and the large arteries (Beeves *et al.*, 2001).

Hypertension is not selective when it comes to age, race and gender. Both males and females are susceptible to the disease. In western societies blood pressure rises with increasing age. With migration to urban areas, however, blood pressure rises rapidly within months of arrival. It would seem therefore that the rise in blood pressure with age is related to socio-economic and environmental factors (Beeves *et al.*, 2001).

Four out of five clients survive a stroke. However, 10 years later, the sufferer has only a 50% chance of still being alive; 15% will suffer a subsequent fatal stroke, while 40% will die of a myocardial infarction (Warren, 2001). Four out of five stroke clients live in the community, with 25% being entirely dependent on a carer, and a further 30% needing help with daily living tasks. Hence less than half of all stroke clients end up being fully independent.

Six months after a stroke, 50% to 80% of clients are able to walk independently, but only 22% can walk at their previous speed. There is a 13% chance of recurrence in the first year following a stroke, and a 5 % risk the year thereafter (Warren, 2001).

### **2.1.5.3 Skin care, foot care and nutritional care of a client with diabetes and hypertension that may lead to a stroke**

Clients suffering from high blood pressure can also develop end organ disease that can lead to a stroke if not controlled. Organs affected are the eyes, kidneys, peripheral arteries and the coronary arteries (PGWC, 1999).

In addition, major complications of a stroke are the development of pressure sores because of vascular inadequacy and nutritional deficiencies. Being bedridden and the paralysis to the one side of the face make ingestion of food difficult (PGWC, 1999).

For both clients with diabetes and hypertension, end-organ disease processes can be controlled by altering the life style. Life style modification or intervention (see definition of terms, page vii) may include the management of the drugs the client takes, managing any side effects that the drugs may produce, and subsequent visits to the health facility. Modifying the life style of clients with diabetes or hypertension, may not only lead to the prevention of further complications, but will also maintain the status of the condition, preventing deterioration and the development of further complications that may lead to disability (Young, 1997).

The maintenance of the diet, modifying the life style and foot care of both clients with diabetes and those with hypertension are of the utmost importance. There are already guidelines available, compiled by the Department of Health, on skin integrity, foot care and the nutritional status of clients with diseases of life style. The researcher used a selection of those guidelines that were appropriate during the design of the questionnaire used in the study to assess the knowledge of the registered nurses working within the Helderberg area.

Table 5 depicts the measures suggested by the Department of Health, that may be followed to maintain a healthy diet in clients with diabetes and those with hypertension (Department of Health, 1998a; 1998b).



**Table 5. Life style management regarding diet of clients with diabetes and hypertension**

•	Check at every visit whether or not the diet is being followed.
•	Stress the importance of the diet at each visit.
•	Encourage continuation of the diet even when blood pressure and diabetic control is maintained.
•	Eat half the normal helpings if overweight.
•	Eat small frequent meals.
•	Eat at least three meals per day.
•	Use very little salt in the diet.
•	Reduce fats and oils.
•	Grill and boil food. Avoid roasting and frying.
•	Use fat free dairy products and margarine.
•	Avoid sugar and foods containing sugar.
•	Where possible, eat natural, rough, unprocessed, unsalted, unsweetened, fresh, uncooked foods.
•	Drink 6 to 8 glasses of water per day.
•	Eat only whole wheat or brown bread.
•	Avoid food with a high salt content, e.g., potato chips and tinned meat.
	(Department of Health, 1998a; 1998b)

Table 5 indicates that it could contribute greatly to the maintenance of their health status if clients address the issues regarding diet, taking in the correct nutrients and in the right quantities and proportions.

The guidelines further state the importance of clients paying meticulous attention to the management of their feet. This could contribute to the prevention of complications that could lead to disability. The researcher also included these aspects in her questionnaire.

Table 6 outlines the information regarding the maintenance of healthy feet of both clients with diabetes and those with hypertension, as set out by the Department of Health in 1998.

**Table 6. Foot care for clients with hypertension and diabetes**

• Do not smoke.
• Do not apply external heat, i.e. do not use hot water bottles.
• Do not use too hot water in the bath.
• Do not walk barefoot. It can cause cuts or injuries to the feet.
• Do not wear bad shoes.
• Buy square-toed or round-toed shoes.
• Shoes to be ½ size larger than usual.
• Do not wear tight socks or tight stockings as they block the circulation.
• Do not perform “home surgery”. Cut toenails straight.
• Make use of a chiropodist.
• Do not ignore any signs of infection of the feet. Attend a clinic straight away.
(Department of Health, 1998a; 1998b)

Table 6 shows that if the client adheres to the information regarding foot care, healthy feet can be maintained, and complications, such as an amputation, due to an ulcer developing as a result of wearing ill-fitting shoes, can be prevented.

Lastly, Table 7 depicts general information regarding skin integrity, as set out by the Department of Health (1998a; 1998b) and SmithKline Beecham Pharmaceuticals (1992), which may be beneficial to both the clients with diabetes and those with hypertension. The researcher also incorporated this information into the questionnaire.

**Table 7. Maintenance of skin integrity of a client with diabetes and hypertension**

• Inspect the skin daily for pressure sores.
• Apply a barrier cream, e.g., PREP, to the skin.
• Avoid the use of safety pins and sharp objects in clothes.
• Avoid clothes with visible folds that can damage the skin.
• Change wet linen immediately.
• Avoid eating in the bed; crumbs can lead to skin damage.
• Personal hygiene must be maintained. Bath/shower daily.
• If bedridden, turn the client 2-hourly (SmithKline Beecham Pharmaceuticals, 1992).

Table 7 shows that maintaining the skin integrity of both the clients with diabetes and those with hypertension can lead to the avoidance of skin breakdown that can lead to the development of bedsores.

Complications arising from diabetes and hypertension can be managed effectively at primary level of care through prevention and health promotion programmes (Department of Health, 2000). Applying the necessary and relevant knowledge to the aspects that may influence or aggravate the condition, further complications and permanent disability can be avoided. The question that needs to be asked is: “Does the registered nurse at primary level of care have the required knowledge to manage diseases of life style with its accompanying complications?” Hence, the researcher will look at the role of the registered nurse in the prevention of physical complications of diseases of life style that could result in the development of impairment/disability.

#### **2.1.6. Role of the registered nurse in the prevention of physical complications of diseases of life style that could result in the development of disability**

The nursing profession is complex and dynamic, responding to changing health needs and to the demands of changing health care systems (Dreyer, Hatting & Lock, 1997).

Diseases arise from interplay of genetic, biological, environmental (physical and socio-economic) and individual and group behavioural influences. Starfield (1992), stresses that nurses, utilising functions unique to their profession, e.g., managing physical illness, caring, helping and teaching can curb diseases through prevention. This prevention is divided into three categories related to stages of disease onset and progression, and to the objectives of the action being taken. These three categories are primary, secondary and tertiary prevention (Warren, 1985).

- Through *primary prevention* the registered nurse focuses on health promotive measures, i.e. health education regarding certain aspects pertaining to a condition, for example providing information to a diabetic regarding foot care and a balanced diet. Specific protective measures, e.g., personal hygiene and the avoidance of causative factors, e.g., avoiding smoking in the hypertensive are addressed at this level of prevention (Grimes & Schulz, 2002).
- Through *secondary prevention* the nurse aims to prevent and cure the disease processes, to prevent the spread of communicable diseases, to prevent the complications and sequelae of

diseases, thereby shortening the period and extent of disability and preventing chronicity and death. Dealing with health crises can do it either directly or by referral to suitable agencies, or case finding and screening surveys, e.g., testing people for diabetes who have a strong family history of diabetes. Early diagnosis and prompt treatment are important secondary preventive measures. Screening means identifying unrecognised diseases in people who are asymptomatic, by means of tests (Grimes *et al.*, 2002).

- Through *tertiary prevention* the nurse aims to limit advanced disease by rehabilitation and maintenance in the community. It may take the form of retraining and re-education after loss of ability due to ageing, illness or accident, for maximum use of remaining capacities. The success of rehabilitation will depend on the education of the community to utilise the potential of the rehabilitated person as fully as possible. Another aspect of tertiary prevention is out-patient clinics and clubs where patients with chronic diseases are treated to maintain the patient in the community and to prevent complications, e.g., diabetic and hypertensive clinics and clubs (Vlok, 1996). All the abovementioned levels of prevention can be rendered at a primary level of care (Grimes *et al.*, 2000).

The registered nurse in South Africa today is a professional with many tasks to fulfil as mentioned, making her a master of many skills (Mariner-Tombay, 1988). These skills are a sought-after commodity, not only in South Africa, but also abroad. Currently registered nurses do not receive any incentive for special skills obtained, which leads to dissatisfaction and demotivation. The South African nursing profession finds itself in a precarious position as scores of professionals seek alternative employment or opt to leave the country in search of lucrative work abroad. The current salary for a registered nurse in the public sector is approximately R8 500 per month before tax. In a country such as Saudi Arabia, one of the countries that lures large numbers of nurses, the monthly salary is R34 000, with benefits such as free accommodation and two return air tickets every year. The SANC estimates that there are currently approximately 2 300 registered nurse working overseas. They receive about 200 applications on a monthly basis for overseas registration. During 1999, a total of 3 300 nurses left South Africa (Thom, 2003).

In addition to the burden on the health services with the constant drain of nurses, it is estimated that by the year 2015 approximately 40% of student nurses and 21% of registered nurses will be HIV positive, placing even further pressure on the country's capacity to deliver health care (Thom, 2003).

In order for the registered nurses to render the services discussed above, it was necessary for them to go through a process of evolution and training. The next section of the literature study addresses these processes.

### **2.1.7 Evolution of the nursing profession, globally, nationally and in the field of training**

Nursing, in some form or another, is as old as the history of man. The development of nursing probably began in response to primitive man's need for nurture or for care when his health deteriorated as a result of disease or injury. The history of the evolution of nursing runs parallel with the history of the evolution of medicine (Mellish *et al.*, 1998).

Globally, Ms Florence Nightingale is seen as the matriarch of modern nursing (Marriner-Tombay, 1988). Throughout her years of practice as a nurse, she highlighted essential points for securing the health of a client, namely –

- clean air
- pure water
- efficient drainage
- cleanliness
- light.

It is clear that these five points that Ms Nightingale emphasised, approximately 120 years prior to the *Alma Ata Declaration* in 1978, form the basis of the eight principles and nine elements which comprise the cornerstone of PHC as known today. The history of the development of nursing in South Africa is tied up with the history of the country (Mellish *et al.*, 1998).

Ms Henrietta Stockdale had a profound effect on the development of nursing as well as nurse training in South Africa (Searle & Pera, 1992). She was considered the founder of nursing education in South Africa.

The education of nurses has evolved with the development of the profession. It progressed from rudimentary training to the current course that was introduced in 1984. The registered nurse graduates with a qualification in general nursing, psychiatric nursing, community nursing and midwifery (Mellish *et al.*, 1998). A Combined Curriculum is currently presented to nurses at a registered nursing college, namely the Western Cape College of Nursing in the Western Cape. The duration of the course is four academic years. One academic year comprises a minimum of 40

weeks. When reviewing the curriculum, it was found that the grand total of hours spent during the four years of training adds up to 5 108 hours. When the number of hours spent on conditions that may lead to disability and rehabilitation are calculated, it amounts to approximately 216 hours. Calculated to a percentage, the learners spend less than 15% of their training devoted to conditions that may lead to disability (Western Cape College of Nursing (WCCN), 2002). This number of hours is by far too little time to equip the nurse with the knowledge needed to render an effective service to the client at primary level of care.

Regardless of the quality of training that the nurse has received, or her current work situation, she cannot function alone. Teamwork as an approach to the provision of health care services is a relatively modern phenomenon. Today almost no health professional can imagine what it would be like to work outside some type of team structure (Purtilo, 1988).

Teamwork helps all those working in health care, both professional and lay, to achieve their objectives better and more economically. Once people are involved in a team, the aims and ideas of others have to be considered. An effective team will be flexible and able to adapt to new activities and challenges that are part of the turbulent environment that we all experience (Pritchard & Pritchard, 1994).

Above mentioned author goes further to say that when members function in a team, they are always available to each other, in body and in knowledge. Team members can tap each other's resources and knowledge to the optimal benefit of the client. In the chain of communication, the nurses, an integral link in the chain, are the first link with the client in identifying possible complications of diseases of life style that may lead to disability and they can refer the patient to an appropriate source.

### **2.1.8 Conclusion**

Reviewing the factors discussed in this chapter, namely the perspectives on PHC internationally, nationally, provincially and at local level, the evolution of PHC, the evolution of the nurse, the recommendations of the BTT, the diminishing staff numbers and the current curriculum for the basic training of nursing students and lastly the increase in diseases of life style, the researcher felt compelled to investigate the knowledge of the registered nurse working at the primary level of care in the Helderberg area in respect of skin integrity, foot care and nutritional needs of a diabetic client

with a stroke. It is a desire of the researcher, a training officer, to develop a one-day in-service training programme dependent on the results of the study.

## CHAPTER 3

### METHODOLOGY

#### 3.1 Primary aim of the study

The aim of the study was to assess the knowledge of registered nurses working at primary level of care in the Helderberg area in respect of skin integrity, foot care and nutritional needs of a diabetic client with a stroke.

#### 3.2 Objectives of the study

1. To describe the demographic details of the registered nurses working within the Helderberg area.
2. To assess the overall % knowledge score obtained by these registered nurses regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.
3. To compare the difference in the % knowledge score obtained by –
  - (a) registered nurses working at the eight CHC's/clinics regarding skin integrity, foot care and nutrition of a diabetic client with a stroke;
  - (b) registered nurses with and without the qualification of curative skills for PHC regarding skin integrity, foot care and nutrition of a diabetic client with a stroke;
  - (c) registered nurses who have a degree and a diploma qualification regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.
4. To assess whether the number of years working at primary level of care have an influence on the knowledge of the registered nurses regarding their knowledge of skin integrity, foot care and nutrition of a diabetic client with a stroke.
5. To identify in which of the sections of the questionnaire the registered nurses fared well in and in which they fared poorly.



6. To make recommendations to –
- the registered nurses
  - the area managers of the eight CHC's/clinics
  - the rehabilitation staff working at the eight CHC's/clinics
  - the HRD & T Section of the Department of Health
  - the clients attending the eight CHC's/clinics
  - the Provincial Government of the Western Cape
  - the researcher.

### **3.3 Study design**

This is a descriptive study that made use of quantitative and qualitative methods of data collection.

### **3.4 Study area**

The study area, the Helderberg area, houses the eight CHC's/clinics. These are Macassar CHC, Somerset West clinic, Ikhwezi CHC, Gustrouw/Rusthof CHC, Sir Lowry's Pass clinic, Fagan Street clinic, Strand CHC and Gordon's Bay clinic.

### **3.5 Study population**

The study population consisted of all the registered nurses working at the eight CHC's/clinics. Only registered nurses were used, as they make up the bulk of the staff compliment. They totalled 50 registered nurses. It is expected of the registered nurse to have relevant knowledge in the prevention and management of skin integrity, foot care and nutrition in diabetes and hypertension to prevent the development of complications. The BTT has a vision that by 2010 PHC should be nurse driven, hence the registered nurses should have the knowledge required to manage the client at primary level of care, especially those that suffer from diseases of life style such as diabetes and hypertension.

### **3.6 Inclusion criteria**

**Persons were included in the study population on the basis of the following -**

- registered nurses who agreed to participate;
- registered nurses working at the abovementioned CHC's/clinics, and
- registered nurses actively working with clients.

### **3.7 Exclusion criteria**

**Persons were excluded from the study population on the basis of the following –**

- registered nurses who did not consent to participate. One registered nurse refused, but gave no reason. Two registered nurses were on a course, two registered nurses were on leave and one registered nurse was on maternity leave. The final study population consisted of the remaining forty four registered nurses, meeting the criteria
- registered nurses who did not actively work with clients, e.g., those registered nurses in supervisory or managerial positions, and
- all other categories of nurses except registered nurses.

### **3.8 Instrumentation**

Data was collected by means of completion of a self-compiled, structured self-administered questionnaire. The questionnaire was in English and Afrikaans (see Appendices G and H). The questionnaire consisted of five sections. Section A consisted of the demographic information. Section B tested the knowledge of the registered nurses in respect of the prevention of skin breakdown. In this section the registered nurses only needed to answer *yes* or *no*. This section comprised 18 questions. Section C tested the knowledge of the registered nurses on the maintenance of foot care and skin integrity. In this section the registered nurses was presented with three possible answers and they only had to choose the correct alternative. This section comprised 14 questions. Sections D and E tested the knowledge of the registered nurses in respect of the maintenance of the nutritional status of the client. Section D comprised four questions. The registered nurses were presented with three possible answers and they only had to choose the correct alternative. Lastly, Section E comprised 11 questions and the registered nurses had to answer either *yes* or *no*.

### **3.8.1 Advantages of a self-administered questionnaire**

- the information gained is available immediately;
- any uncertainties could be clarified with registered nurses immediately, and
- the researcher could make sure that all the registered nurses who consented to participate completed the questionnaire.

### **3.8.2 Disadvantages of a self-administered questionnaire**

- time constraints, and
- registered nurses could feel influenced by the presence of the researcher (obsequiousness bias).

## **3.9 Pilot study**

After obtaining written permission from the management of the Oostenberg Administration (see Appendix D), the researcher conducted a pilot study with five registered nurses working for the Administration to assess the wording and the clarity of questions/statements in the questionnaire. Three of the registered nurses were Afrikaans-speaking and two were English-speaking. The pilot study took place in November 2002 and it took the registered nurses between 20 to 25 minutes to complete the questionnaire.

Changes were made to question 9 of Section B and question 6 of Section E of the English version of the questionnaire. English grammar was changed to make the question more understandable (see Appendix G for a copy of the modified version of the questionnaire).

## **3.10 Procedure**

Written permission was obtained from the management of the Helderberg area (see Appendices C, E, and F) before administering the English and Afrikaans questionnaires. The researcher made appointments with all the registered nurses at the eight different CHC/clinics in February 2003, and explained the procedure to them. Written permission was obtained from each registered nurse (see Appendices A and B), and any queries they had, were clarified. Due to their high workload, it was impossible for the registered nurses to complete the questionnaire during working hours. They

committed themselves to completing the questionnaires either during their lunchtime, which is one hour, or after hours. The registered nurses who were not willing to sacrifice their lunchtime, undertook to complete the questionnaire after hours. Completing the questionnaire took between 20 to 25 minutes. The researcher collected the completed questionnaires the following day. The researcher spent four days in the field distributing and collecting 44 questionnaires at the following clinics: Macassar CHC 15, Sir Lowry's Pass clinic 4, Strand CHC 3, Fagan Street clinic 1, Somerset West clinic 4, Ikhwezi CHC 6, Gustrouw/Rusthof CHC 6, and Gordon's Bay clinic 5.

### **3.11 Data analysis**

Responses from the questionnaires were captured on an Excel spreadsheet. The assistance of a statistician was used for the analysis of the data of the questionnaire. The statistician made use of line graphs, bar graphs and scatter plot graphs to illustrate the results of the data from the questionnaires.

Statistics was used to test whether there was any significance between the variables tested. The hypothesis was tested in objective 3a, 3b and 3c at a significance level of 5%.

Objectives 2, 3a, 3b, 3c, 4 and 5 were tested quantitatively, making use of percentages to illustrate the objectives, and testing the significance levels, while objective 1 was tested qualitatively as well as qualitatively. Qualitatively a comparison was made in respect of the years working at primary level of care, between the diploma qualification versus the degree qualification, and the post-basic qualification of curative skills for PHC for those registered nurses who do not have the qualification.

## CHAPTER 4

### PRESENTATION OF RESULTS

The primary aim of the study was to assess the knowledge of registered nurses at primary level of care, regarding skin integrity, foot care and nutrition of a diabetic client with a stroke working in the Helderberg area.

#### **4.1 Presentation of the results of the six objectives as set out in Chapter 3 in order to reach the primary aim of the study:**

##### **4.1.1 Objective 1: To describe the demographic details of the registered nurses working within the Helderberg area**

Demographic information made up the first section, Section A of the questionnaire. The following data was collected:

1. the eight CHC's/clinics at which the registered nurses currently work;
2. the gender of the registered nurses;
3. the current age of the registered nurses;
4. number of years that the registered nurses has been working at a primary setting after completion of her basic training;
5. number of registered nurses that have a degree qualification compared to the number of registered nurses that have a diploma qualification;
6. year in which basic training was completed, and
7. number of registered nurses that have a post-basic qualification in curative skills for primary health care or an equivalent qualification.

Table 8 illustrates the answer to the first question for the number of registered nurses working at the eight CHC's/clinics.

**Table 8. Number of registered nurses working at the eight CHC's/clinics**

<b>COMMUNITY HEALTH CENTRES</b>	
Macassar CHC	15
Sir Lowry's Pass Clinic	4
Strand CHC	3
Fagan Street Clinic	1
Somerset West Clinic	4
Ikhwezi CHC	6
Gustrow/Rusthof CHC	6
Gordon's Bay Clinic	5
<b>TOTAL</b>	<b>44</b>

Table 8 shows that 44 registered nurses completed the questionnaire. The majority of the registered nurses, namely 34% (n = 15) worked at Macassar CHC, while one registered nurse worked at Fagan Street clinic.

The second question related to the gender of the registered nurses. Ninety seven percent (n = 43) of the registered nurses who completed the questionnaire were female and 3 % (n = 1) registered nurse was male.

The third question related to the age of the registered nurses at the time of the interview. Table 9 indicates the different age groups of the registered nurses.

**Table 9. Age groups of the registered nurses at the time of the interview**

<b>AGE OF THE REGISTERED NURSES</b>	
Between 20 and 29 years	4
Between 30 and 39 years	18
Between 40 and 49 years	16
Between 50 and 59 years	6

Table 9 shows that the majority of the registered nurses, namely 41% (n = 18) are between 30 and 39 years of age, while the smallest number, namely 9% (n = 4) falls into the age group between 20 and 29 years.

With the fourth question the researcher wanted to determine how many years the registered nurses had been working at a primary level of care after the completion of their basic training. Table 10 presents the number of years the registered nurse had been working at primary level of care.

**Table 10. Years worked at primary level of care**

<b>YEARS AT PRIMARY LEVEL OF CARE</b>	
Between 0 and 10 years	35
Between 11 and 19 years	6
Between 20 and 29 years	3

Table 10 shows that the largest number of registered nurses, namely 80% (n = 35) had been working at primary level of care for less than 10 years.

Question 5 requested the registered nurse to indicate whether they had completed a degree course or a diploma course in nursing. Ninety percent (n = 40) registered nurses had completed a diploma course and 10% (n = 4) a degree course in nursing.

Question 6 requested the registered nurses to indicate the year in which they completed their basic nursing training. This is presented in Table 11 below.

**Table 11. Year in which post-basic training was completed**

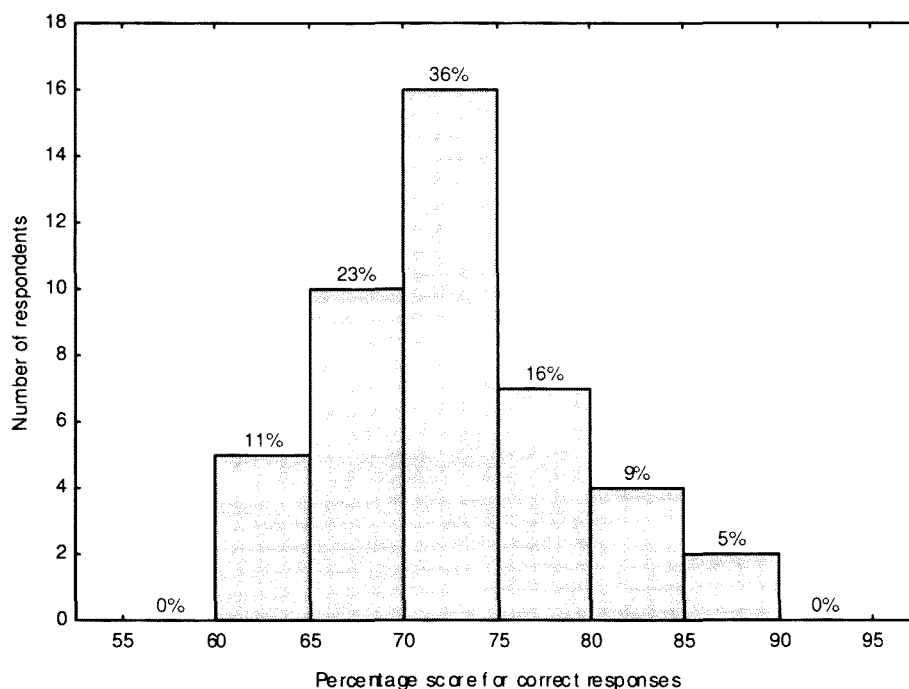
<b>YEAR OF COMPLETION</b>	
Between 1960 and 1969	3
Between 1970 and 1979	6
Between 1980 and 1989	18
Between 1990 and 1999	16
Between 2000 and 2003	1

Table 11 indicated that the majority of the registered nurses, namely 77% (n = 34) completed their basic training in the period between 1980 and 1999. These registered nurses make up the bulk of the nursing force in the research area.

Question 7 requested the registered nurses to indicate whether they were in possession of the post-basic qualification of curative skills for primary health care or a similar qualification. Out of the 44 registered nurses, 77% (n = 34) have the post-basic qualification and 23% (n = 10) did not.

#### 4.1.2 Objective 2: To assess the overall % knowledge score obtained by registered nurses regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.

Figure 3 presents the % score obtained by the registered nurses working at the eight CHC's/clinics regarding their knowledge of prevention of skin breakdown. **In this section eighteen questions were asked (Section B of the questionnaire).**

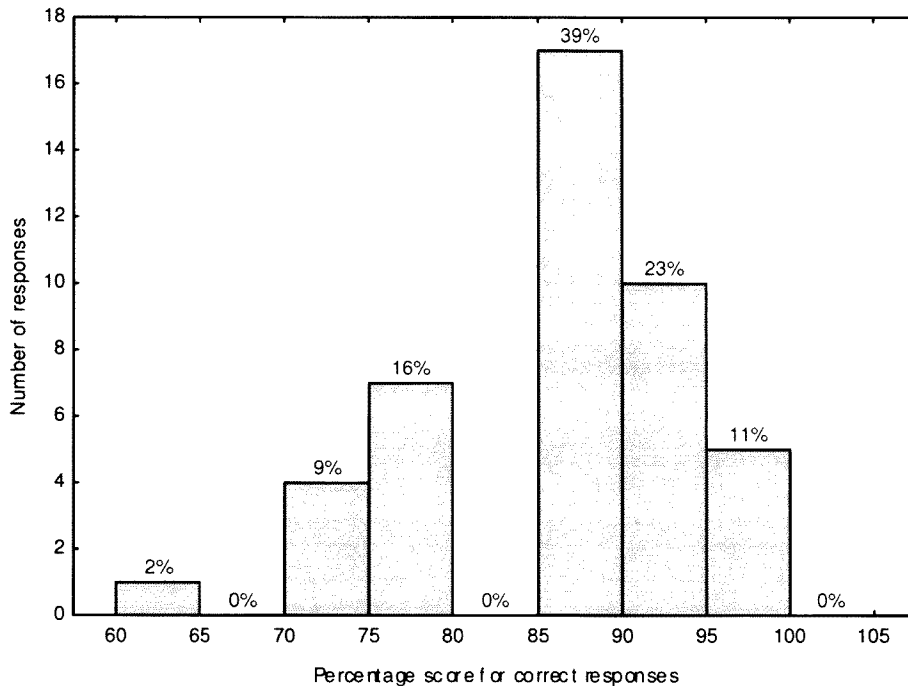


**Figure 3. Overall % score obtained for correct responses, re: knowledge of prevention of skin breakdown**

Figure 3 show that all the participants (n = 44) completed this section. Eleven percent (n = 5) of the registered nurses scored between 60% and 65%. Twenty three percent (n = 10) scored between 65% and 70%. Thirty six percent (n = 16) of the registered nurses scored between 70% and 75%. Sixteen percent (n = 7) scored between 75% and 80%, 9% (n = 5) and lastly 5% (n = 2) of the study population scored between 80% and 85%. No registered nurse scored more than 90% in this section. The figures presented show that only two registered nurses have an exceptional knowledge base, while the majority, just over 60% of the registered nurses demonstrated a wide variation knowledge base of between 65% and 75% correct responses.



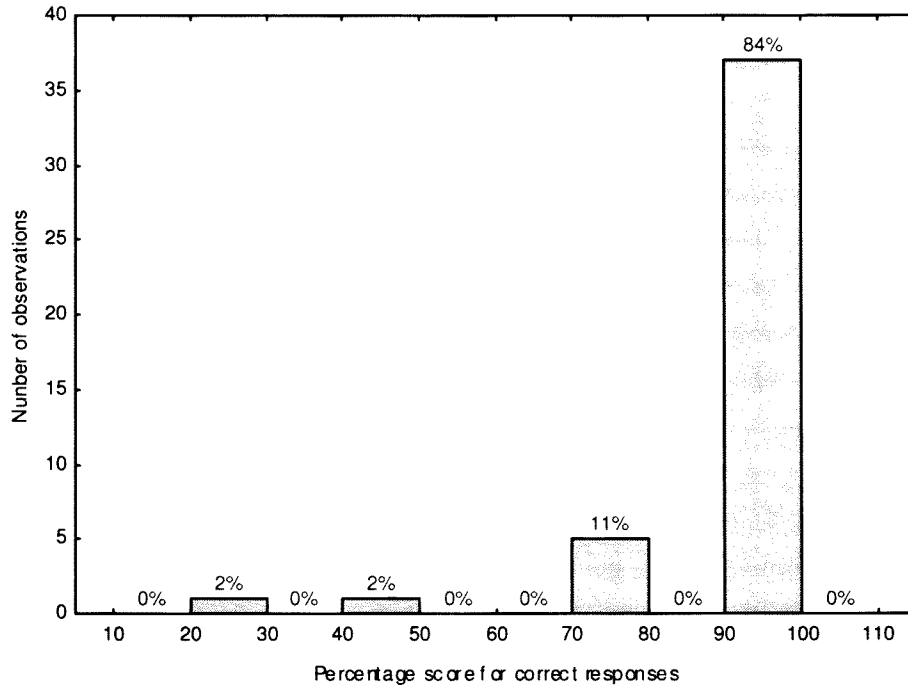
Figure 4 presents the % score obtained by the registered nurses working at the eight CHC's/clinics regarding their knowledge of maintenance of foot care and skin integrity. **In this section fourteen questions were asked (Section C of the questionnaire).**



**Figure 4. Overall % score obtained for correct responses, re: knowledge of maintenance of foot care and skin integrity**

Figure 4 show that one registered nurse scored between 60% and 65%. The number that scored between 65% and 70% and between 80% and 85% was zero (n = 0). Nine percent (n = 4) scored between 70% and 75%, while 16% (n = 7) scored between 75% and 80%. Thirty nine percent (n = 17) scored between 85% and 90%. Twenty-three percent (n = 10) scored between 90% and 95% and lastly 11% (n = 5) scored between 95% and 100%. The figures presented show that 25% (n = 11) of the registered nurses demonstrated a wide variation knowledge base of between 65% and 75% correct responses, while 73% (n = 32) of the registered nurses have demonstrated a wide exceptional knowledge base of between 85% and 100% correct responses.

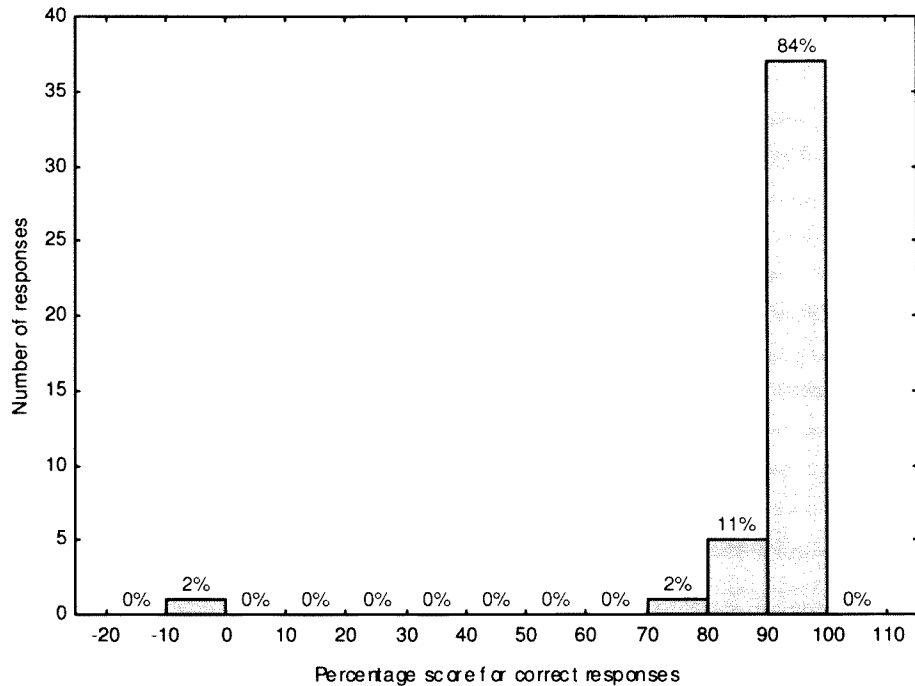
Figure 5 presents the % score obtained by the registered nurses working at the eight CHC's/clinics regarding their knowledge of maintenance of nutritional status. **In this section four questions were asked (Section D of the questionnaire).**



**Figure 5. Overall % score obtained for correct responses, re: knowledge of maintenance of nutritional status**

Figure 5 shows that 84% (n = 36) of the registered nurses have obtained a % score between 90% and 100%. Eleven percent (n = 5) of the registered nurses obtained a % score of between 70% and 80%, while two percent (n = 2) registered nurses scored between 20% to 30% and 40% and 50% respectively

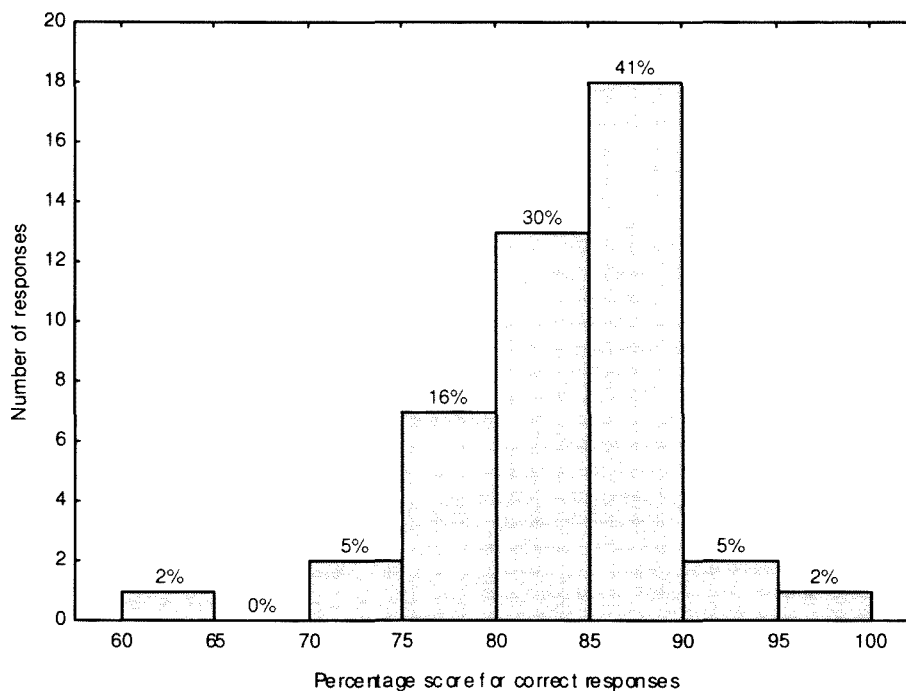
Figure 6 presents the % obtained by the registered nurses working at the eight CHC's/clinics regarding their knowledge of maintenance of nutritional status. **In this section eleven questions were asked (Section E of the questionnaire).**



**Figure 6. Overall % score obtained for correct responses, re: knowledge of maintenance of nutritional status**

Figure 6 shows that 84% (n = 36) of the registered nurses have demonstrated an exceptional knowledge base of between 90% and 100% correct responses. Eleven percent (n = 5) of the registered nurses have demonstrated a knowledge base of between 80% and 90% correct responses, while 2% (n = 2) of the registered nurses have demonstrated a knowledge base of between 70% to 80%. Two percent (n = 1) registered nurse failed to answer this section of the questionnaire.

Figure 7 presents the % score obtained by all the registered nurses working at the eight CHC's/clinics regarding their knowledge of the prevention of skin breakdown, the maintenance of foot care, skin integrity and the maintenance of nutritional status. **(Section B, C, D and E of the questionnaire, totalling forty-seven questions).**



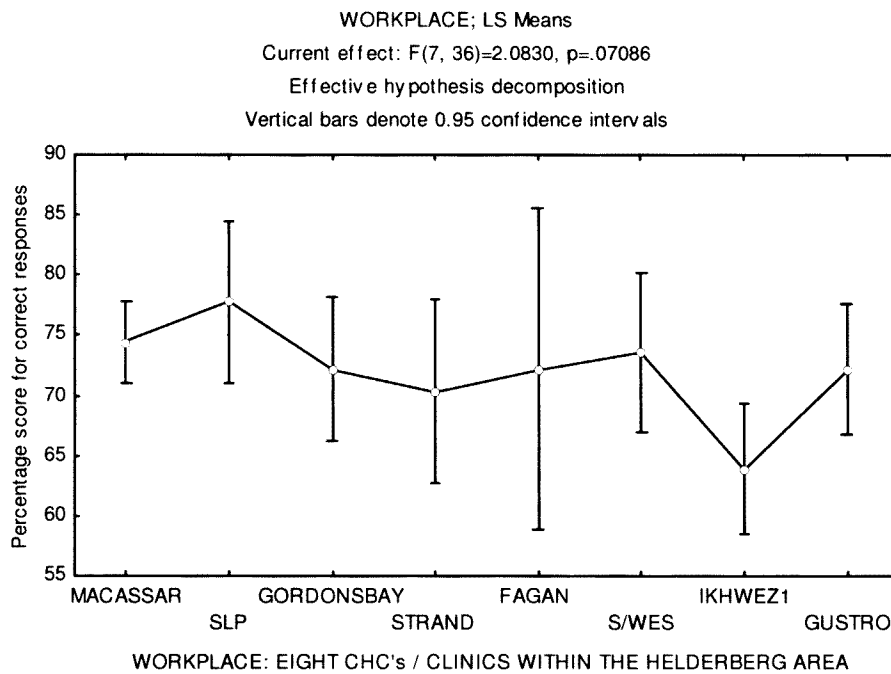
**Figure 7. Overall % score obtained for correct responses, re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status**

Figure 7 shows that the majority of the registered nurses, 41% (n = 18), obtained between 85% and 90%. Thirty percent (n = 13) obtained between 80% and 85%, while 5% (n = 4) obtained between 70% and 75% and 90% and 95% respectively. Sixteen percent (n = 7) obtained between 75% and 80% and two percent (n = 1) obtained between 60% and 65% and 95% and 100% respectively. The figures presented demonstrate that the outright majority of the registered nurses, namely 92% (n = 40) demonstrated a wide variation knowledge base of between 70% and 90% correct responses. Seven percent (n = 3) demonstrated an exceptional knowledge base of between 90% and 100% correct responses.

**4.1.3 Objective 3(a): To compare the difference in the % knowledge score obtained by registered nurses at the eight CHC's/clinics regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.**

**All hypotheses tested at a significance level of 5%.**

Figure 8 presents the % score obtained by the 44 registered nurses working at the eight CHC's/clinics regarding their knowledge of prevention of skin breakdown (Section B of the questionnaire).



**Figure 8. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of prevention of skin breakdown**

Figure 8 show that there is a difference in the knowledge of the registered nurses working at the different facilities. These differences are not significant since the p value is 0,07, which is larger than  $p = 0,05$ . The lowest % score obtained was at Ikhwezi CHC, with approximately 64%, and the highest % score was at Sir Lowry's Pass clinic, with approximately 77%.

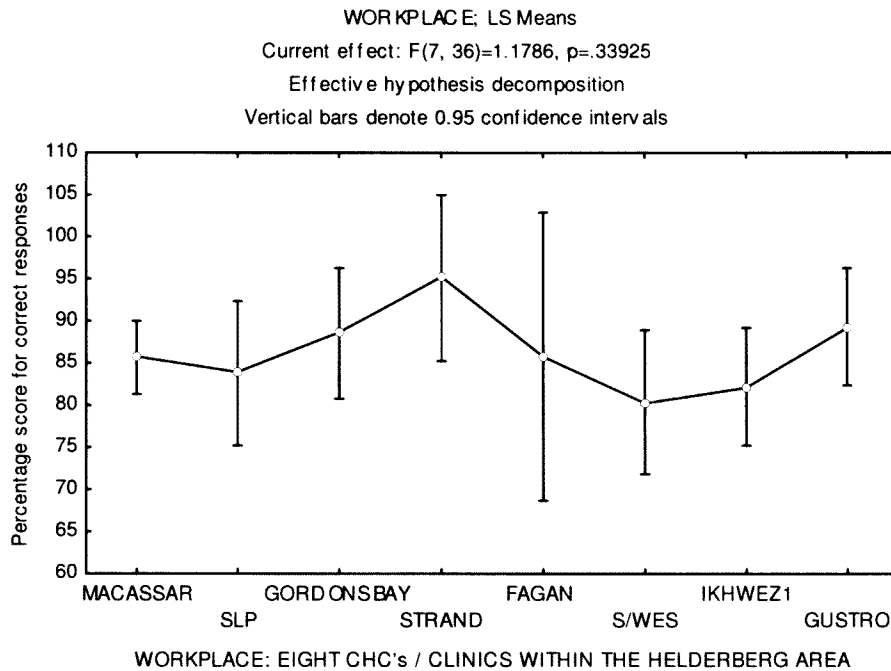
The researcher would like to further comment on the overall performance of the registered nurses regarding section B of the questionnaire. The registered nurses answered the following questions incorrectly:

- (1) Question fourteen required the registered nurses to indicate whether a diabetic client with a stroke should bath or shower once a week. Seventy five percent ( $n = 3$ ) of the nurses working at Somerset West clinic, 83% ( $n = 5$ ) of the registered nurses working at Ikhwezi CHC, 60% ( $n = 3$ ) registered nurses working at Gordons Bay clinic, 50% ( $n = 2$ ) of the registered nurses working at Sir Lowry's Pass clinic and 40% ( $n = 6$ ) of the registered nurses working at Macassar CHC answered this question incorrectly.

- (2) Question fifteen required the registered nurses to determine whether detergents and perfume in soap destroy the natural oils in the skin. Hundred percent of the registered nurses working at Gordons Bay clinic and Somerset West clinic answered this question incorrectly. Eighty-three percent (n = 5) of the registered nurses working at Gustrow/Rusthof CHC, 75% (n = 3) of the registered nurses working at the Strand CHC, 66% (n = 4) of the registered nurses working at Ikhwezi CHC, 53% (n = 8) of the registered nurses working at Sir Lowry's Pass clinic answered this question incorrectly.
- (3) Question sixteen required the registered nurses to indicate whether exposure to the sun makes the skin of a diabetic client with a stroke tougher. Eighty-three percent (n = 5) of the registered nurses working at Ikhwezi CHC, 75% (n = 3) of the registered nurses working at the Strand CHC, 60% (n = 3) of the registered nurses working at Gordons Bay clinic, 50% (n = 3) of the registered nurses working at Gustrow/Rusthof CHC, 50% (n = 2) of the registered nurses working at Sir Lowry's Pass clinic and 40 % (n = 4) of the registered nurses working at Macassar CHC answered this question incorrectly.

Looking at the questions that the registered nurses answered exceptionally well, a pattern emerges for all eight CHC's/clinics. All the registered nurses answered question one, ten, eleven and twelve correctly. Question one required the registered nurses to indicate whether a diabetic client with a stroke should spend as much time during the day out of bed as possible. Question ten and eleven required the registered nurses to indicate whether wearing tight clothes with visible folds could damage the skin and whether to change wet linen of a diabetic client with a stroke immediately. Question twelve required the registered nurse to indicate whether crumbs in a bed could lead to the damage of the skin of a diabetic client with a stroke.

Figure 9 presents the % score obtained by the 44 registered nurses working at the eight CHC's/clinics regarding their knowledge of maintenance of foot care and skin integrity (Section C of the questionnaire).



**Figure 9. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of maintenance of foot care and skin integrity**

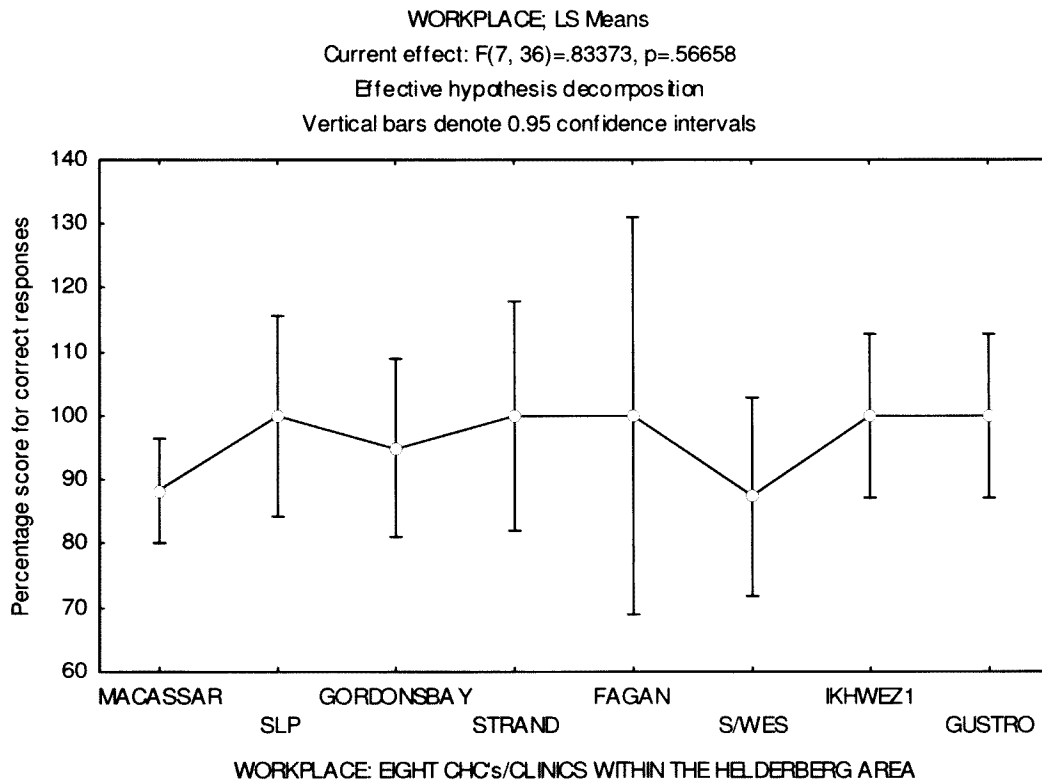
Figure 9 show that the % score obtained ranged between 90% at the Strand CHC, which was the highest, to 80% at Somerset West clinic, which was the lowest. The % score obtained are however not significant since  $p = 0,33$ .

The researcher would like to further comment on the overall performance of the registered nurses regarding section C of the questionnaire.

For this section of the questionnaire, all the registered nurses working at the CHC's/clinics answered all the questions correctly, with the exception of question eleven.

Question eleven, which required the registered nurses to indicate whether a diabetic client with a stroke should soak his feet on a daily basis, a weekly basis or never was answered poorly by the following registered nurses. The only registered nurse working at Fagan Street clinic, 100% of the registered nurses working as Gordons Bay clinic and Gustrow/Rusthof CHC, answered this question incorrectly. Seventy five percent ( $n = 3$ ) of the registered nurses working at Sir Lowry's Pass clinic, 73% ( $n = 11$ ) of the registered nurses working at Macassar CHC, while 66% ( $n = 4$ ) working at Ikhwezi CHC and 50% ( $n = 2$ ) of the registered nurses working at the Strand CHC answered this question incorrectly.

Figure 10 presents the % score obtained by the 44 registered nurses working at the eight CHC's/clinics regarding their knowledge of maintenance of nutritional status (Section D of the questionnaire).

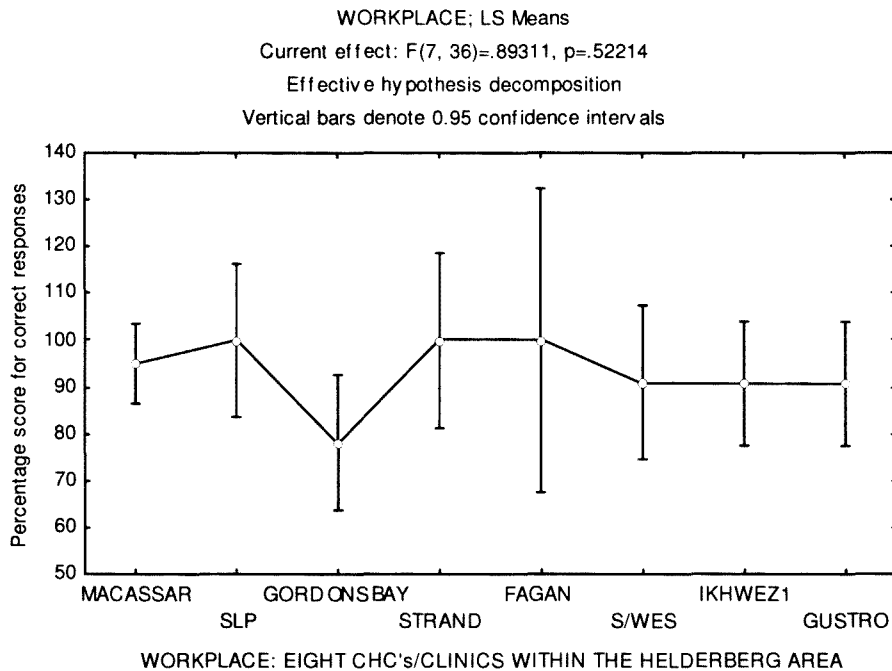


**Figure 10. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of maintenance of nutritional status**

Figure 10 show that the % score obtained for this section was 100% at Sir Lowry's Pass clinic, Strand CHC, Fagan Street clinic, Ikhwezi CHC and Gustrouw/Rusthof CHC. The lowest % score obtained was 88% at Macassar CHC and Somerset West clinic. The differences in scores are however not significant since  $p = 0,57$ . Overall the registered nurses demonstrated an exceptional knowledge base for this section of the questionnaire.

Figure 11 presents the % score obtained by the 44 registered nurses working at the eight CHC's/clinics regarding their knowledge of maintenance of nutritional status (Section E of the questionnaire).

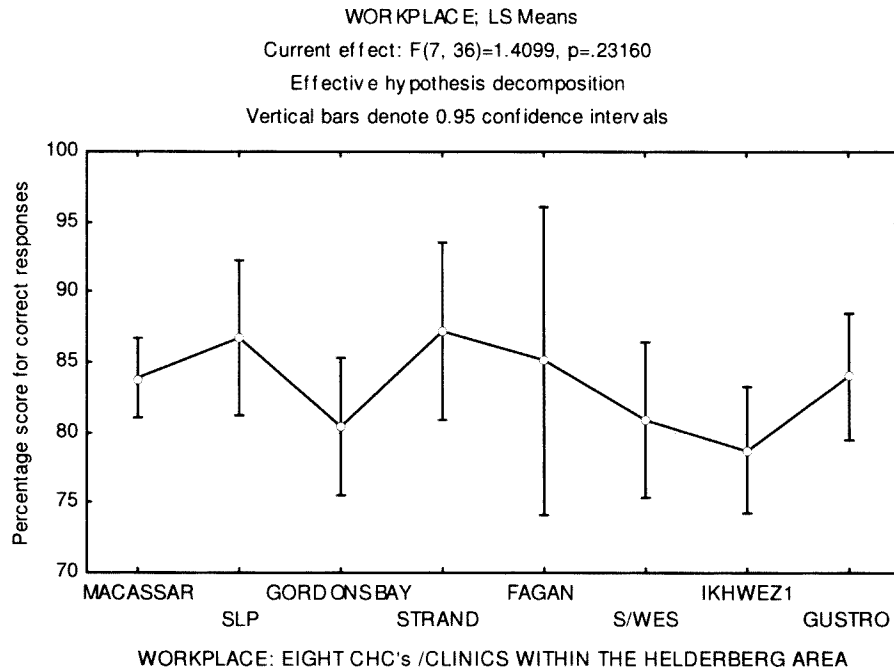




**Figure 11. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of maintenance of nutritional status**

Figure 11 show that the highest % score obtained was at Sir Lowry's Pass clinic, Strand CHC and Fagan Street clinic with 100%. The lowest % score was obtained by Gordon's Bay clinic, with 78%. The difference in scores are however not significant since  $p = 0,52$ . Overall the registered nurses demonstrated an exceptional knowledge base for this section of the questionnaire. Although the registered nurses scored exceptionally well in this section, a pattern of correct and incorrect answers could not be detected. One registered nurse working at Gordons Bay clinic failed to complete this section of the questionnaire.

Figure 12 presents the % score obtained by all the registered nurses working at the eight CHC's/clinics regarding their knowledge of the prevention of skin breakdown, the maintenance of foot care, skin integrity and the maintenance of nutritional status (Section B, C, D and E of the questionnaire).



**Figure 12. Overall % score obtained by the registered nurses working at the eight CHC's/clinics re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity, and maintenance of nutritional status**

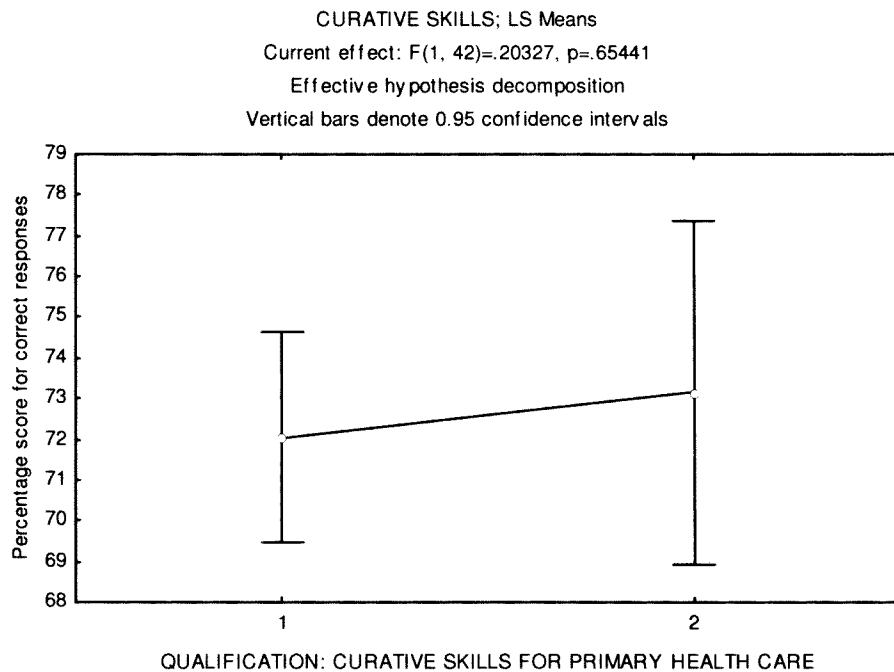
Figure 12 show the % scores obtained by all the registered nurses at the eight CHC's/clinics regarding the prevention of skin breakdown, the maintenance of foot care, skin integrity and the maintenance of nutritional status. The Strand CHC obtained the highest % score with approximately 87% and Ikhwezi CHC % scored obtained was the lowest with approximately 78%. The difference in scores is however not significant since  $p = 0,23$ .

**4.1.4 Objective 3(b): To compare the difference in % knowledge score obtained by registered nurses with and without the qualification of curative skills for PHC regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.**

**All hypotheses tested at a significance level of 5%.**

Twenty three percent ( $n = 10$ ) of the registered nurses do not have the qualification of curative skills for PHC, while 77% ( $n = 34$ ) of the registered nurses have the mentioned qualification.

Figure 13 presents the % score obtained by the registered nurses with and without curative skills for PHC regarding their knowledge on the prevention of skin breakdown (Section B of the questionnaire).



**Figure 13. Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills qualification re: knowledge of prevention of skin breakdown**

**Key:** 1 = In possession of the qualification: Curative skills for PHC.  
 2 = Not in possession of the qualification: Curative Skills for PHC.

Figure 13 show that the % score obtained by the registered nurses without the qualification of curative skills for PHC was 73%. The registered nurses with the qualification of curative skills for PHC % scores were 72%. The registered nurses without the mentioned qualification of curative skills for PHC thus obtained a higher % score. The difference in scores is however not significant since  $p = 0,05$ .

The researcher would like to further comment on the overall performance of the registered nurses regarding section B of the questionnaire. The 23% ( $n = 10$ ) of the registered nurses without the qualification of curative skills for PHC, answered question three, sixteen and seventeen of this section of the questionnaire incorrectly.

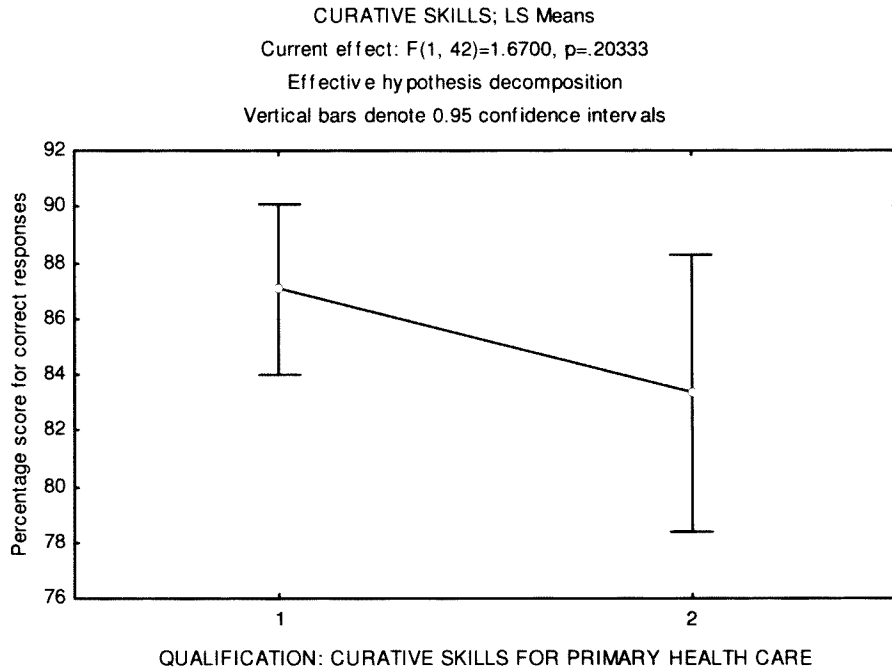
- (1). Question three required the registered nurses to indicate whether a diabetic client with a stroke should sit in the smallest wheelchair possible. Seventy percent ( $n = 7$ ) registered nurses answered this question incorrectly.
- (2). Question sixteen required the registered nurses to indicate whether exposing the skin of a diabetic client to the sun, made it tougher. Ninety percent ( $n = 9$ ) of the registered nurses answered this question incorrectly.
- (3). Question seventeen required the registered nurses to indicate whether hot bathwater for a diabetic client with a stroke promoted circulation. Ninety percent ( $n = 9$ ) of the registered nurses answered this question incorrectly.

All 23% ( $n = 10$ ) of the registered nurses who are not in possession of the qualification of curative skills for PHC answered question one, ten, twelve and thirteen correctly. Question one required the registered nurses to indicate whether a diabetic client with a stroke should spend as much time during the day out of bed. Question ten and twelve required the registered nurses to indicate whether a diabetic client with a stroke should avoid using sharp objects or pins in his clothing and whether wet linen should be changed immediately. Question thirteen required the registered nurse to indicate whether crumbs in the bed of a diabetic client with a stroke could damage his skin.

The 77% ( $n = 34$ ) of the registered nurses who are in possession of the qualification of curative skills for PHC, had the same questions incorrect as the registered nurses without the qualification of curative skills for PHC. Eighty-three percent ( $n = 29$ ) of the registered nurses answered question three incorrectly, 70% ( $n = 24$ ) answered sixteen incorrect and 47% ( $n = 16$ ) answered question seventeen incorrectly.

A pattern emerged in the answering of this section of the questionnaire. The registered nurses with the qualification of curative skills for PHC answered all the same questions correctly as their counterparts without the mentioned qualification.

Figure 14 presents the % score obtained by the registered nurses with and without curative skills for PHC regarding their knowledge on the maintenance of foot care and skin integrity (Section C of the questionnaire).



**Figure 14. Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills qualification re: knowledge of maintenance of foot care and skin integrity**

**Key:** 1 = In possession of the qualification: Curative skills for PHC.  
 2 = Not in possession of the qualification: Curative Skills for PHC

Figure 14 show that the % score obtained by the registered nurses without the qualification of curative skills for PHC was 83%. The registered nurses with the qualification of curative skills for PHC % scored obtained were 87%. The registered nurses without the mentioned qualification of curative skills for PHC thus obtained a lower % score. The difference in scores is however not significant since  $p = 0,02$ .

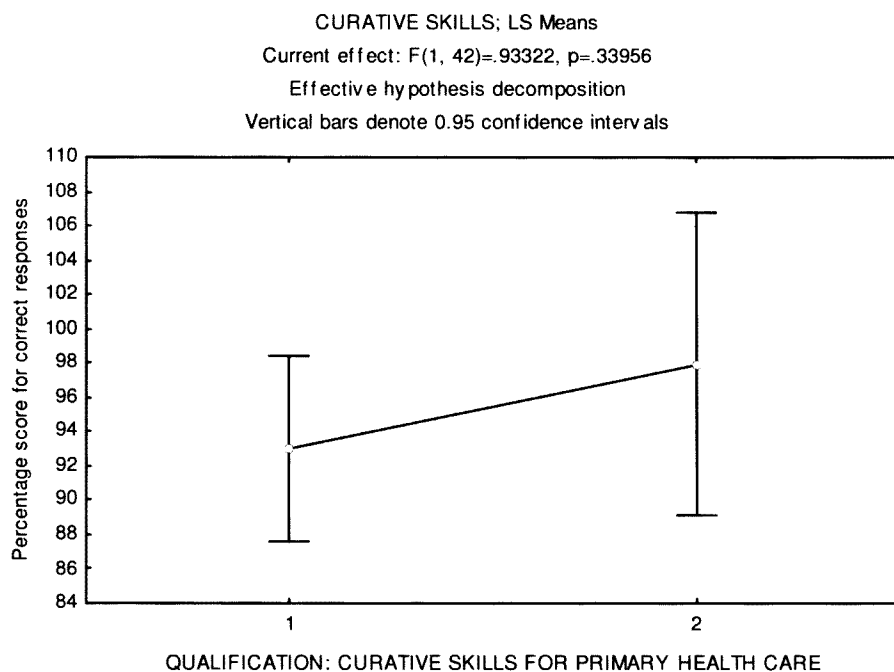
Question eleven required the registered nurse without the qualification of curative skills for PHC to indicate whether to soak the feet of a diabetic client with a stroke on a daily basis, monthly basis or never. Eighty percent ( $n = 8$ ) of registered nurses answered this question incorrectly.

All the registered nurses without the qualification of curative skills for PHC answered the questions of this section correctly, with the exception of question eleven as already discussed.

The registered nurses with the qualification of curative skills for PHC, had the same question incorrect as the registered nurses without the qualification of curative skills for PHC, namely question eleven. Eighty two percent (n = 28) of the registered nurses answered this question incorrectly.

Only one question, namely question one was answered correctly by all the registered nurses with the qualification of curative skills for PHC. Question one required the registered nurses to indicate whether a diabetic client with a stroke should check his feet and toes on a daily basis, a weekly basis or when he suspects something wrong with his feet.

Figure 15 presents the % score obtained by the registered nurses with and without curative skills for PHC regarding their knowledge of the maintenance of nutritional status (Section D of the questionnaire).



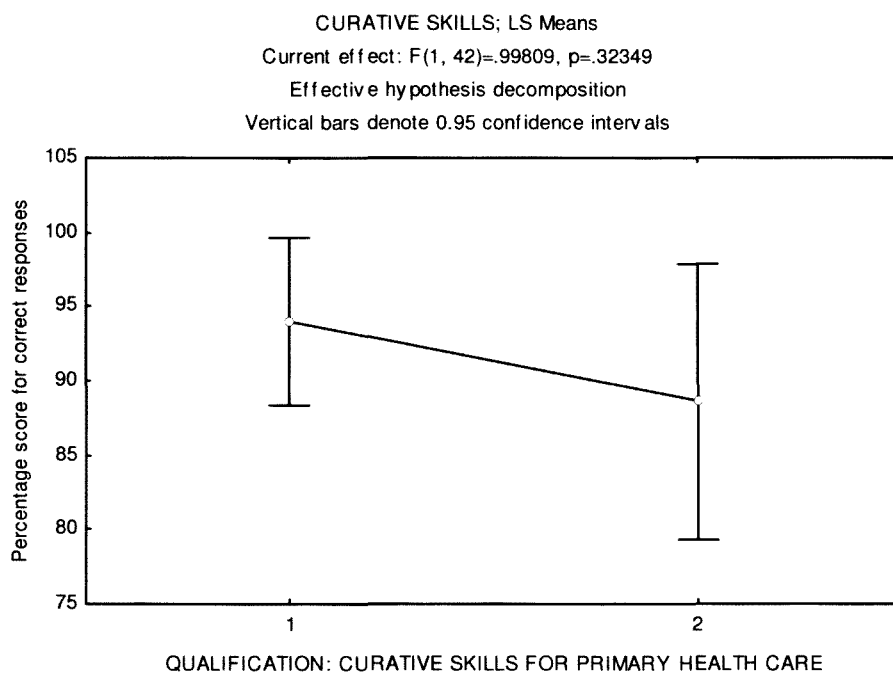
**Figure 15. Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills for knowledge re: knowledge of maintenance of nutritional status**

**Key:** 1 = In possession of the qualification: Curative skills for PHC.  
 2 = Not in possession of the qualification: Curative Skills for PHC

Figure 15 show that the % score obtained by the registered nurses without the qualification of curative skills for PHC was 98%. The registered nurses with the qualification of curative skills for PHC % scored obtained were 93%. The registered nurses without the mentioned qualification of curative skills for PHC thus obtained a higher % score. The difference in scores is however not significant since  $p = 0,34$ .

Both the registered nurses with the qualification of curative skills for PHC and those without the qualification demonstrated an exceptional knowledge base for this section of the questionnaire. Although the registered nurses scored exceptionally well in this section, a pattern of correct and incorrect answers could not be detected.

Figure 16 presents the % score obtained by the registered nurses with and without curative skills for PHC regarding their knowledge of the maintenance of nutritional status (Section E of the questionnaire).



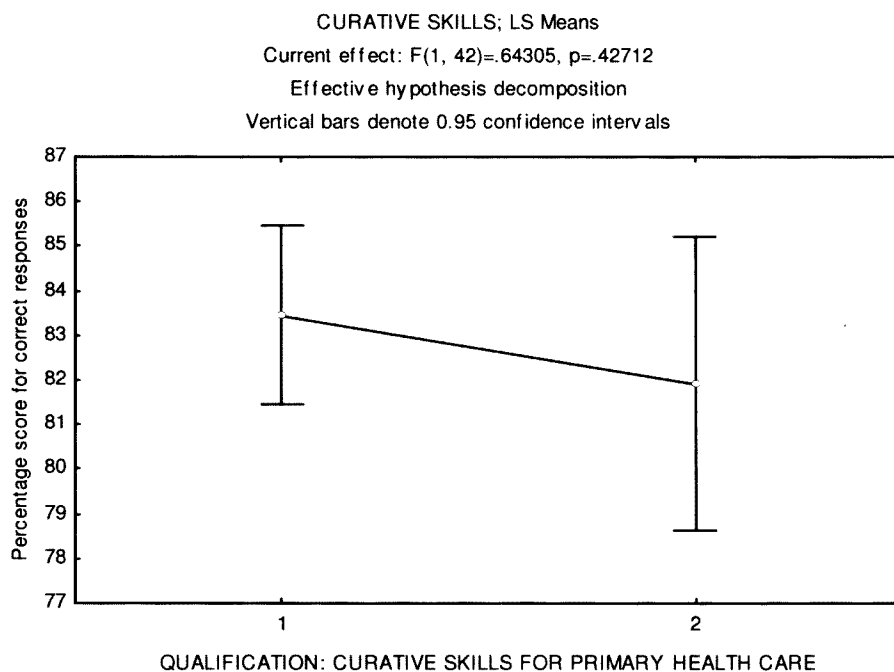
**Figure 16. Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills for knowledge re: knowledge of maintenance of nutritional status**

- Key:** 1 = In possession of the qualification: Curative skills for PHC.  
 2 = Not in possession of the qualification: Curative Skills for PHC

Figure 16 show that the % score obtained by the registered nurses with the qualification of curative skills for PHC was 94%. The registered nurses without the qualification of curative skills for PHC % scored obtained were 88%. The registered nurses with the mentioned qualification of curative skills for PHC thus obtained a higher % score. The difference in scores is however not significant since  $p = 0,32$ .

Both the registered nurses with the qualification of curative skills for PHC and those without the qualification demonstrated an exceptional knowledge base for this section of the questionnaire and no pattern of correct and incorrect answers could be detected. One registered nurse without the qualification of curative skills for PHC did not complete this section of the questionnaire.

Figure 17 presents the % score obtained by the registered nurses with and without curative skills for PHC regarding their knowledge of the prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status (Section B, C, D and E of the questionnaire).



**Figure 17. Comparison between the % score obtained by registered nurses. Curative skills qualification versus no curative skills re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status**



**Key:** 1 = In possession of the qualification: Curative skills for PHC.

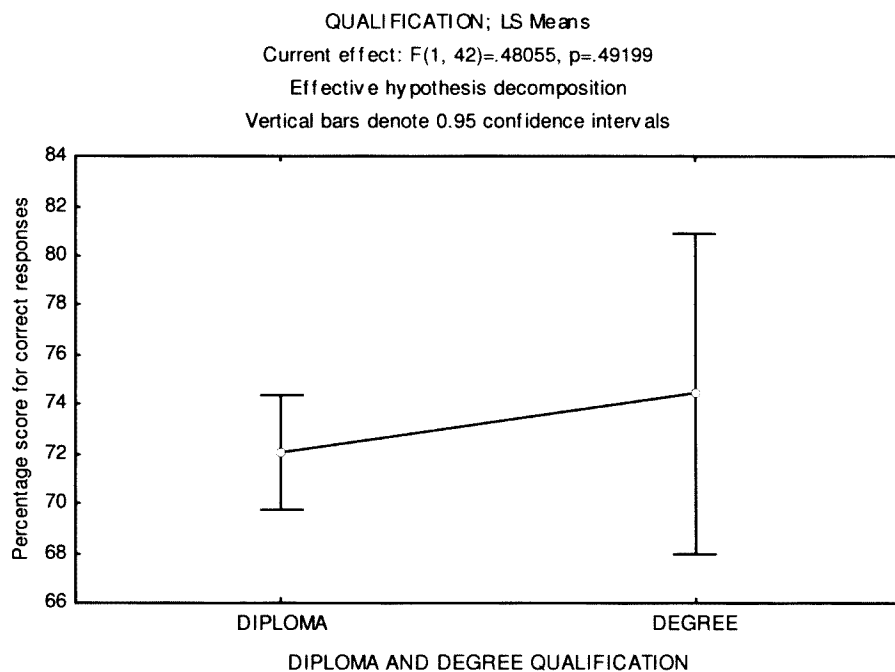
2 = Not in possession of the qualification: Curative Skills for PHC

Figure 17 show that the registered nurses with the qualification of curative skills for PHC obtained an overall higher % score, namely 84% than their colleagues without the mentioned qualification. The registered nurses without the qualification of curative skills for PHC obtained 82%. These differences are however not significant since  $p = 0.42$ .

**4.1.5 Objective 3(c): To compare the difference in the % knowledge score obtained by registered nurses who have a degree and a diploma qualification regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.**

**All hypotheses tested at a significance level of 5%.**

Figure 18 presents the % score obtained by registered nurses with a degree and those with a diploma qualification regarding their knowledge of prevention of skin breakdown (Section B of the questionnaire).



**Figure 18. Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of prevention of skin breakdown**

Figure 18 show that the registered nurses who have a degree qualification obtained a higher % score compared to that of their counterparts with a diploma qualification. The registered nurses with the degree qualification obtained just over 74%, compared to the 72% score obtained by the registered nurses with a diploma qualification. The differences in scores are however not significant since  $p = 0,49$ .

The researcher would like to further comment on the overall performance of the registered nurses regarding this section of the questionnaire. The registered nurses answered the following questions incorrectly:

Ten percent ( $n = 4$ ) registered nurses are in possession of the degree qualification. Questions sixteen and seventeen of this section of the questionnaire were answered incorrectly.

- (1) Question sixteen required the registered nurse to indicate whether exposure of the skin of a diabetic client with a stroke to the sun, makes it tougher. One hundred percent of the registered nurses answered this question incorrectly.
- (2) Question seventeen required the registered nurses to indicate whether hot bathwater promotes the circulation of a diabetic client with a stroke. Seventy five percent ( $n = 3$ ) of the registered nurses answered this question incorrectly.

Due to the fact that there were only four registered nurses with a degree qualification, a pattern emerged. Out of the eighteen questions posed in this section, all four registered nurses answered ten questions in this section correctly.

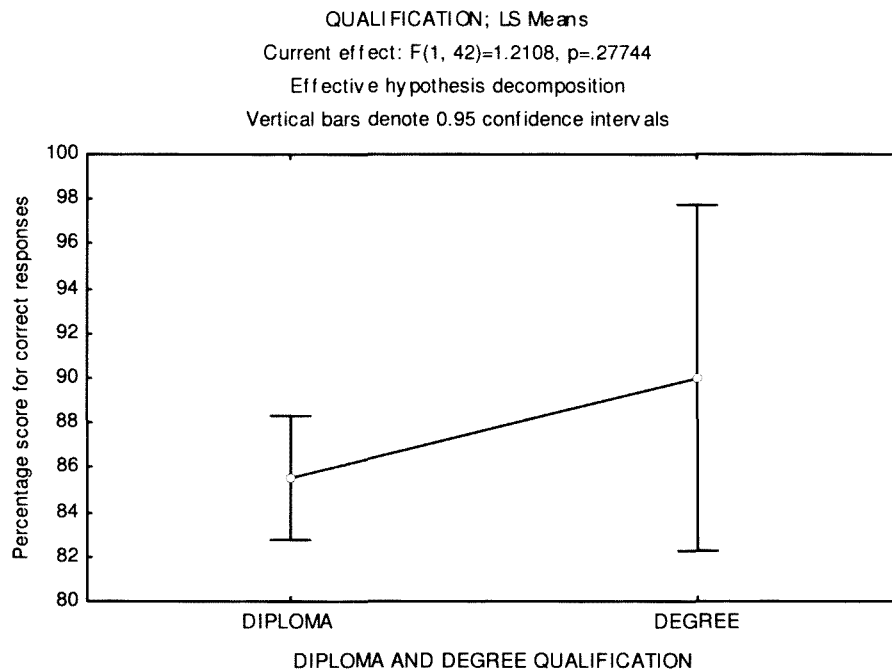
Ninety percent ( $n = 40$ ) registered nurses are in possession of a diploma qualification. Questions sixteen and seventeen of this section of the questionnaire were also answered incorrectly.

Sixty five percent ( $n = 26$ ) of the registered nurses answered question sixteen and 53% ( $n = 21$ ) of the registered nurses answered question seventeen incorrectly.

The registered nurses with a diploma qualification all answered question ten, eleven, twelve and thirteen correctly. Question ten and twelve required the registered nurses to indicate whether a diabetic client with a stroke should avoid using sharp objects or pins in his clothing and whether wet linen should be changed immediately. Question eleven required the registered nurse to indicate

whether wearing tight clothing with visible folds could damage the skin of a diabetic client with a stroke. Lastly, question thirteen required the registered nurse to indicate whether crumbs in the bed of a diabetic client with a stroke could damage his skin.

Figure 19 presents the % score obtained by registered nurses with a degree and those with a diploma qualification regarding their knowledge of maintenance of foot care and skin integrity (Section C of the questionnaire).



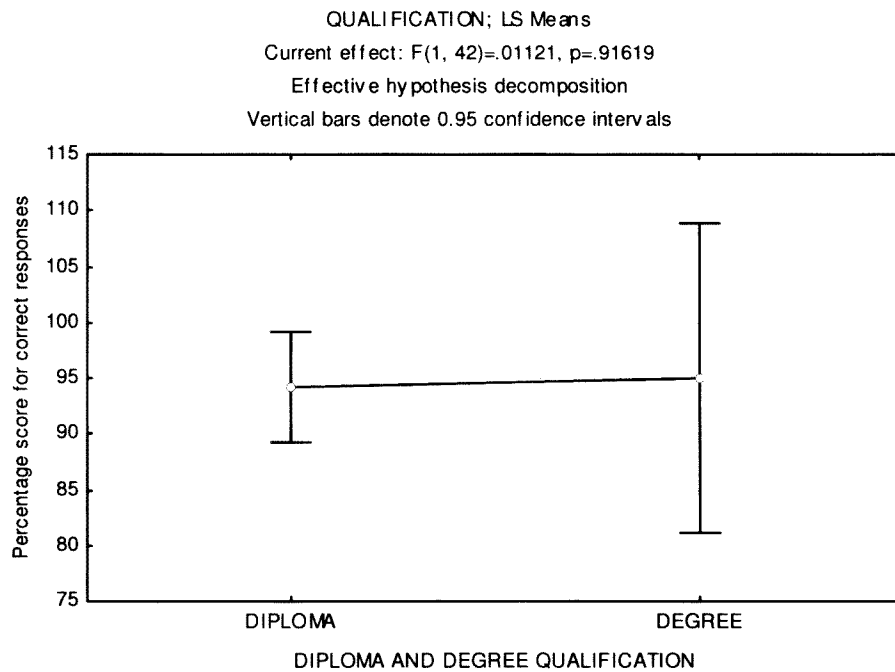
**Figure 19. Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of maintenance of foot care and skin integrity**

Figure 19 show that the registered nurses who have a degree qualification obtained a higher % score than their counterparts with a diploma qualification. The registered nurses with a degree qualification obtained a % score of 90%, compared to the 85% score of the registered nurses with a diploma qualification. These differences in scores are however not significant since  $p = 0,28$ .

Overall the registered nurses with a degree qualification demonstrated an exceptional knowledge base. Only one question, namely question eleven was answered incorrectly.

Question eleven required the registered nurse to indicate whether a diabetic client with a stroke should soak his feet on a daily basis, a weekly basis or never. Seventy five percent (n = 3) of the registered nurses with a degree qualification answered this question incorrectly, while 82% (n = 33) of the registered nurses with a diploma qualification answered this question incorrectly. A pattern of correct answers for both categories of registered nurses could be detected.

Figure 20 presents the % score obtained by registered nurses with a degree and those with a diploma qualification regarding their knowledge of maintenance of nutritional status (Section D of the questionnaire).

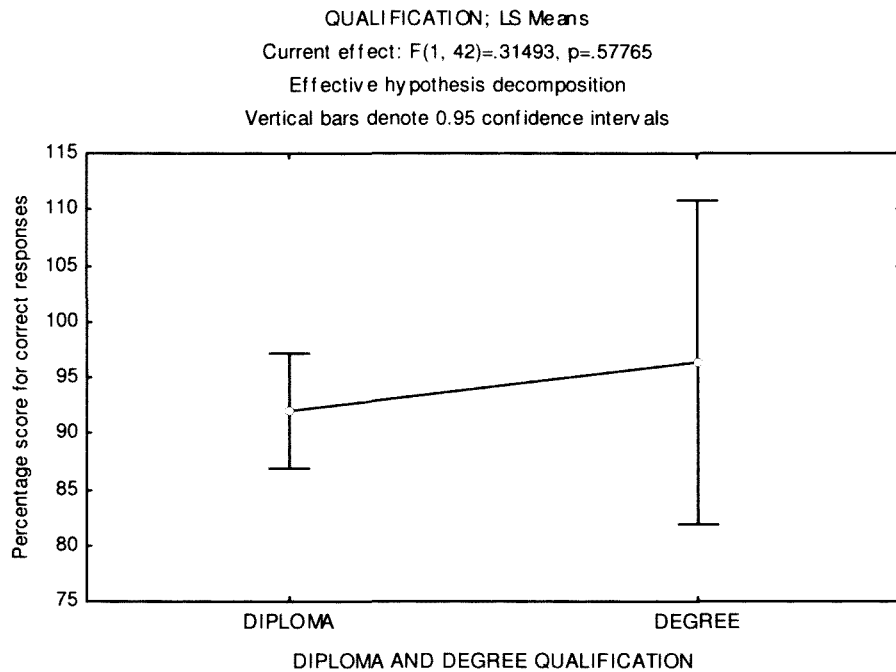


**Figure 20. Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of maintenance of nutritional status**

Figure 20 show that there is less than one percent difference in the % score obtained by registered nurses who have a degree qualification and those with a diploma qualification. The registered nurses with a degree qualification obtained 95%, and the registered nurses with a diploma qualification obtained just below 95%. These differences in scores are however not significant since  $p = 0,92$ .

Overall the registered nurses with a degree qualification as well as the diploma qualification demonstrated an exceptional knowledge base. A 100% score was obtained in this section by both the registered nurses with a degree qualification.

Figure 21 presents the % score obtained by registered nurses with a degree and those with a diploma qualification regarding their knowledge of maintenance of nutritional status (Section E of the questionnaire).

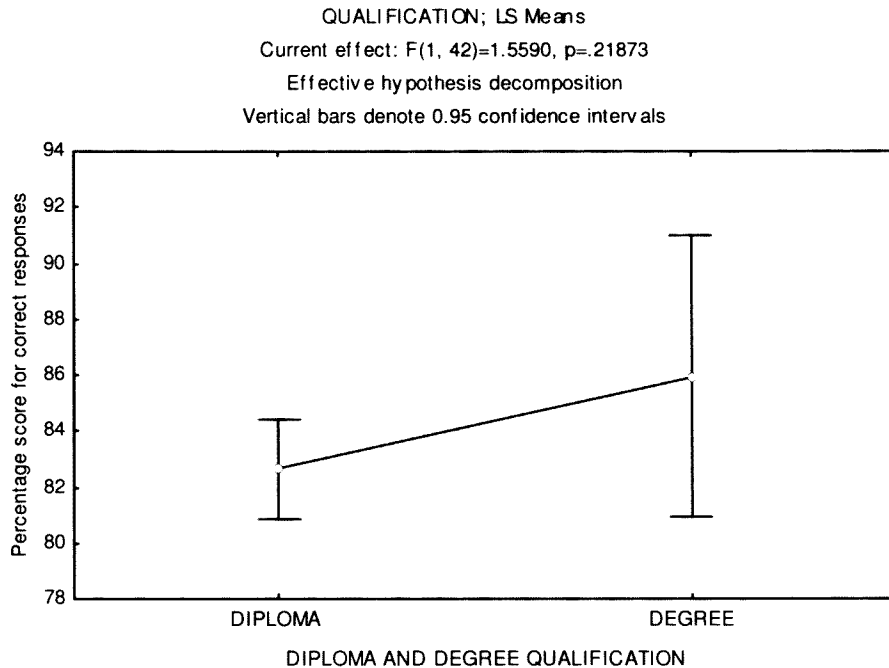


**Figure 21. Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of maintenance of nutritional status**

Figure 21 show that the registered nurses who have a degree qualification obtained a higher % score for this section than their counterparts with a diploma qualification. The registered nurses with a degree qualification obtained 96%, compared to the 93% score obtained of the registered nurses with a diploma qualification. These differences in scores are however not significant since  $p = 0,58$ .

Overall the registered nurses with a degree as well as the diploma qualification demonstrated an exceptional knowledge base and no pattern of correct and incorrect answers could be detected. One registered nurse with a diploma qualification failed to answer this section of the questionnaire.

Figure 22 presents the overall % score obtained by registered nurses with a degree and those with a diploma qualification regarding their knowledge of the prevention of skin breakdown, maintenance of foot and skin integrity and maintenance of nutritional status (Section B, C, D and E of the questionnaire).



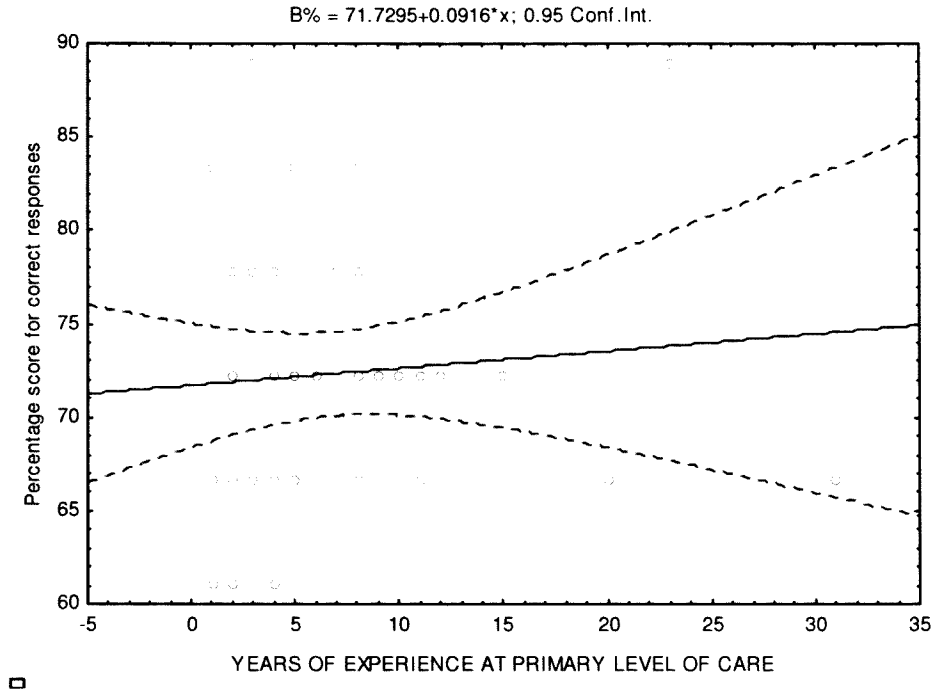
**Figure 22. Comparison between knowledge of registered nurses with a degree qualification and a diploma qualification re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status**

Figure 22 show that the registered nurses who have a degree qualification obtained a higher % score all sections. The registered nurses with a degree qualification obtained 86%, compared to the 83% score obtained by the registered nurses with a diploma qualification. These differences in scores are not however significant since  $p = 0,22$ .

In summary, both the two categories of registered nurses answered the same questions correctly and incorrectly

**4.1.6 Objective 4: To assess whether the number of years working at primary level of care have an influence on the knowledge of the registered nurses regarding their knowledge on skin integrity, foot care and nutrition of a diabetic client with a stroke.**

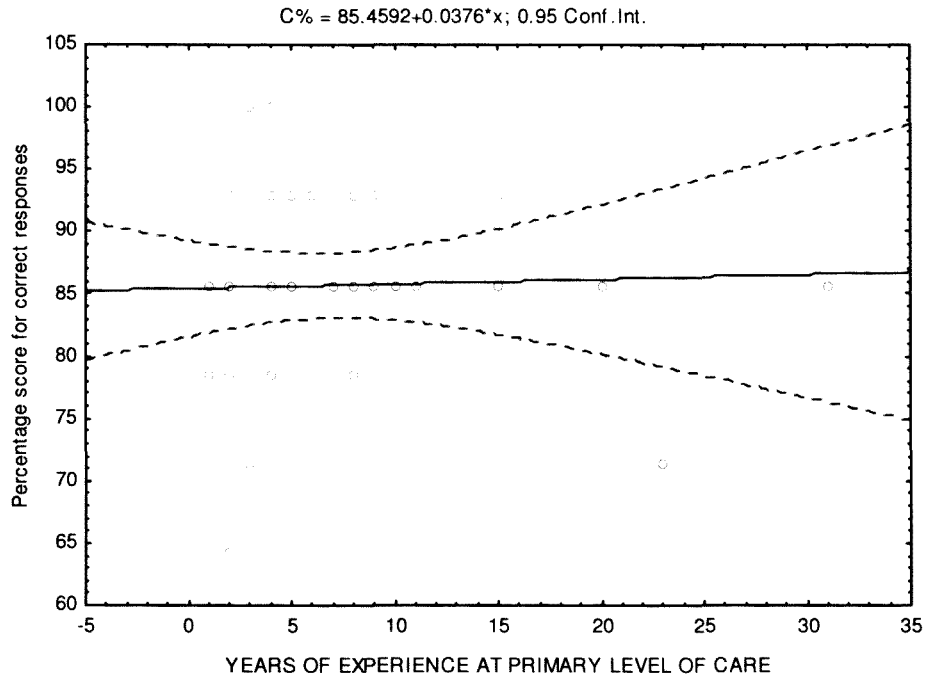
Figure 23 presents the knowledge of the registered nurses, with different years of experience at primary level of care for knowledge regarding the prevention of skin breakdown (Section B of the questionnaire).



**Figure 23. Years of experience of registered nurses at primary level of care re: knowledge of prevention of skin breakdown**

A plot of the data in Figure 23 indicates that there is almost no relationship between the number of years worked at primary level of care and the percentage obtained. The regression line is almost horizontal since the average expected experience increases only from 72% for no experience to about 75% for 35 years and explains only 0,66% of the variation observed.

Figure 24 presents the knowledge of the registered nurses, with different years of experience at primary level of care for knowledge regarding the maintenance of foot care and skin integrity (Section C of the questionnaire).

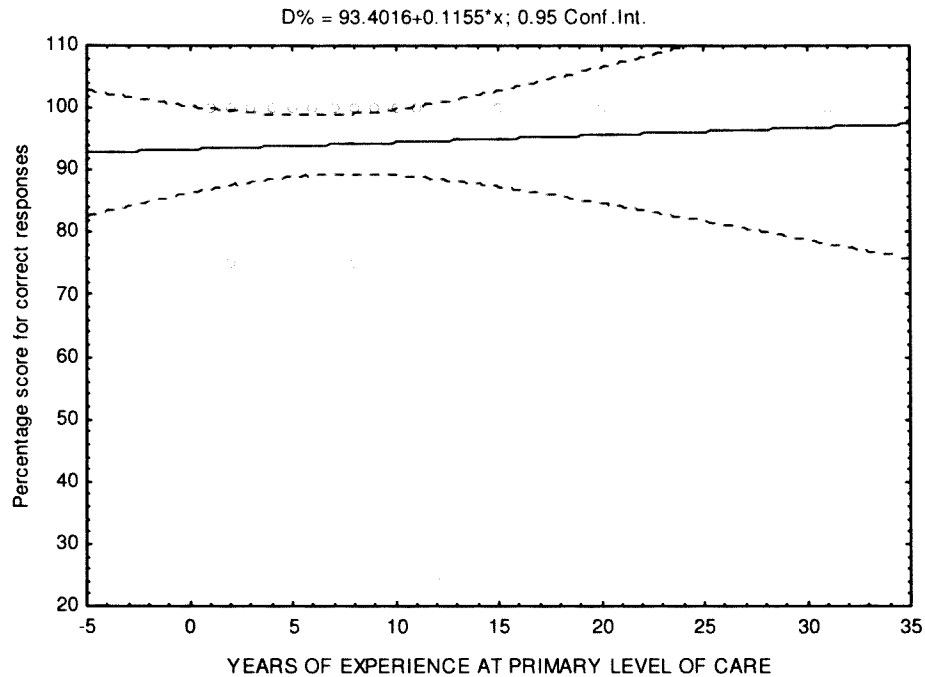


**Figure 24. Years of experience of registered nurses at primary level of care re: knowledge of maintenance of foot care and skin integrity**

A plot of the data in Figure 24 indicates that there is almost no relationship between the number of years worked at primary level of care and percentage obtained. The regression line is almost horizontal. The average for 35 years of experience is 85%.

Figure 25 presents the knowledge of the registered nurses, with different years of experience at primary level of care for knowledge regarding the maintenance of nutritional status (Section D of the questionnaire).

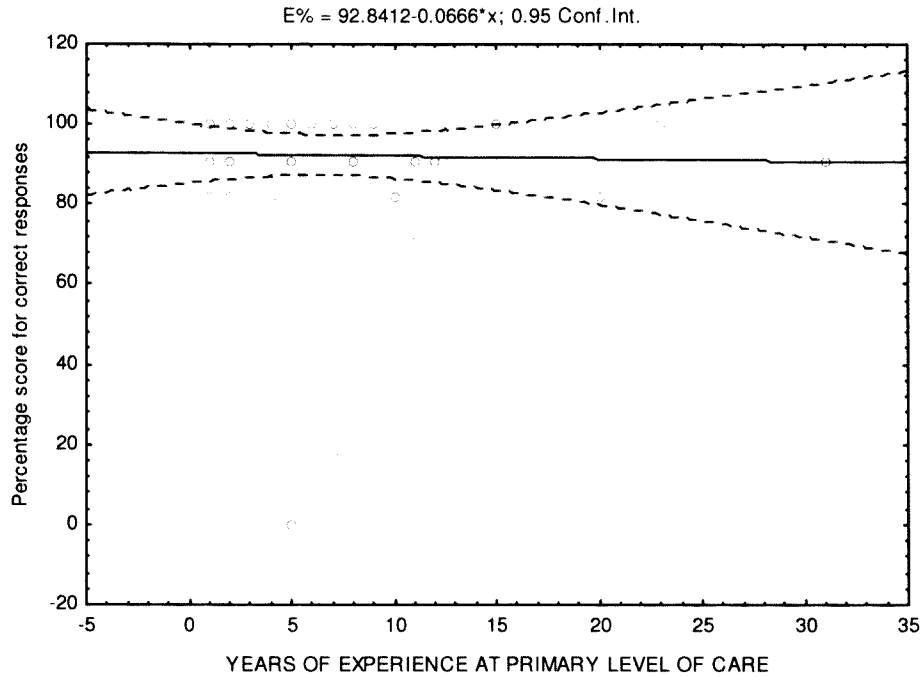




**Figure 25. Years of experience of registered nurses at primary level of care re: knowledge of maintenance of nutritional status**

A plot of the data in Figure 25 indicates that there is almost no relationship between the number of years worked at primary level of care and percentage obtained. The regression line is almost horizontal. The average of 93% for knowledge of Section D is noted for the years experience ranging from 0 to 35 years.

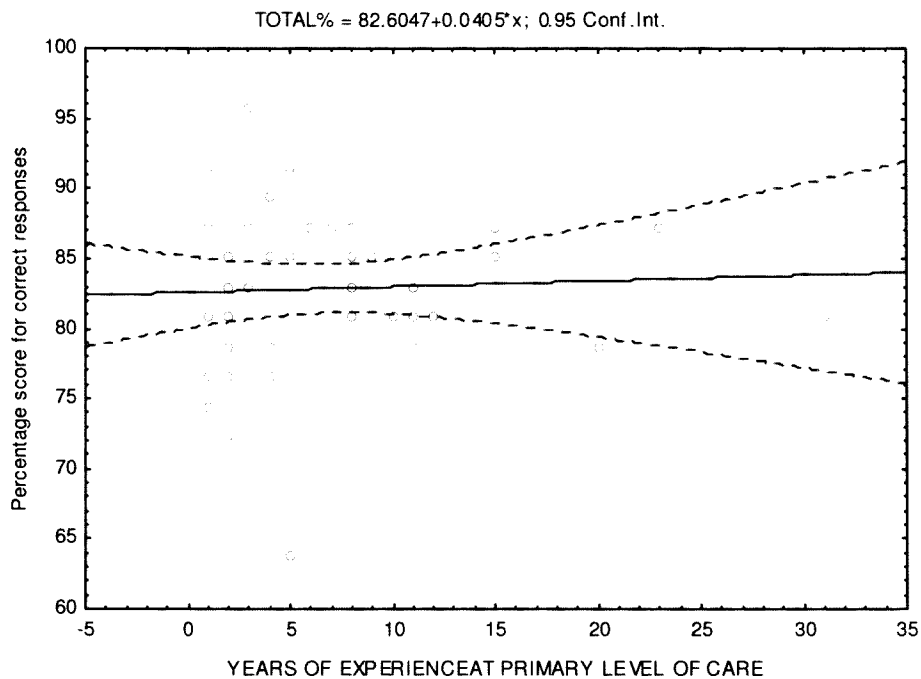
Figure 26 presents the knowledge of the registered nurses, with different years of experience at primary level of care for knowledge regarding the maintenance of nutritional status (Section E of the questionnaire).



**Figure 26. Years of experience of registered nurses at primary level of care re: knowledge of maintenance of nutritional status**

A plot of the data in Figure 26 indicates that there is almost no relationship between the number of years worked at primary level of care and percentage obtained. The regression line is almost horizontal. The average of 93% for knowledge of Section E is noted for the years experience ranging from 0 to 35 years

Figure 27 presents the knowledge of the registered nurses, with different years of experience at primary level of care for knowledge regarding the prevention of skin breakdown, the maintenance of foot care, skin integrity and nutritional status (Section B, C, D and E of the questionnaire).



**Figure 27. Years of experience of registered nurses at primary level of care re: knowledge of prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status**

A plot of the data in Figure 27 indicates that there is almost no relationship between the number of years worked at primary level of care and the % score obtained. The regression line is almost horizontal. The average of 83% for overall % scored is noted for the years experience ranging from 0 to 35 years.

**4.1.7 Objective 5: To identify in which of the sections of the questionnaire the registered nurses faired well in and in which they faired poorly.**

The results of the questionnaire regarding the prevention of skin breakdown, maintenance of foot care, skin integrity and maintenance of nutritional status show that the registered nurses obtained the following % score for each of the sections of the questionnaire.

Section B tested the knowledge of the registered nurses regarding the prevention of skin breakdown of a diabetic client with a stroke. The overall % score obtained for the section was 72 %.

Section C tested the knowledge of the registered nurses regarding the maintenance of foot care and skin integrity of a diabetic client with a stroke. The overall % score obtained for the section was 86%.

Section D tested the knowledge of the registered nurses regarding the maintenance of nutritional status of a diabetic client with a stroke. The overall % score obtained for the section was 90%.

Section E also tested the knowledge of the registered nurses regarding the maintenance of nutritional status of a diabetic client with a stroke. The overall % score obtained for the section was 91%. From these results, it can be derived that the registered nurses obtained the highest % score for section D and the lowest % score for Section B of the questionnaire.

#### **4.1.8 Recommendations**

From the results of the study, recommendations are made in Chapter 6 to the following people or instances:

- the registered nurses working at the eight CHC's/clinics in the Helderberg area;
- the area managers of the eight CHC's/clinics in the Helderberg area;
- the rehabilitation staff working at the eight CHC's/clinics in the Helderberg area;
- the HRD & T Section of the Department of Health;
- the clients attending the eight CHC's/clinics in the Helderberg area;
- the PGWC, and
- the researcher.

These recommendations will be discussed fully in Chapter 6.

#### **4.2 Comments on findings**

This chapter attempted to map out the research findings. The knowledge of registered nurses on aspects of skin integrity, foot care and nutrition of a diabetic client with a stroke at primary level of care in the Helderberg area was investigated by making use of a self-compiled, structured, self-administered questionnaire. Quantitative methods (objectives 2, 3a, 3b, 3c, 4 and 5) as well as qualitative methods (objective 1) of data collection were used at both the level of data collection and analysis of the findings. The findings were illustrated in the form of line graphs, bar graphs and

scatter plot graphs and were calculated to a percentage form. The results will be discussed in full in Chapter 5 of the study.

### **4.3 Limitations**

Due to the high workload of the registered nurses taking part in the study, the registered nurses were unable to complete the questionnaire at work and committed to completing it after hours. It possibly gave them the opportunity to look up answers out of fear of appearing incompetent. To minimise the possibility of this, the researcher explained that the knowledge required had to be existing knowledge and not researched answers. Researched answers could have given a clouded view of their knowledge, thus influencing the end result of the study. When planning the methodology, and during the pilot study, the researcher did not foresee that the questionnaires had to be completed after hours, and this could have influenced the outcome of the study.

In addition to the above, only the Helderberg area was targeted, the results of this study are only applicable to the registered nurses in that area. The information gained can therefore not be generalised to other registered nurses working in other areas of the metropole region.

Registered nurses being on leave, maternity leave and courses was also perceived as a limitation. It was impossible to include these registered nurses in the study. Out of the 50 registered nurses actively working in the Helderberg area, 44 registered nurses participated in the study.

### **4.4 Validity**

The validity and reliability of the questionnaire were tested by means of the following:

- two rehabilitation specialists scrutinised the questionnaire. They indicated that the instrument appeared suitable for testing what it was supposed to test (face validity), and;
- in comparing the scores of the pilot study and the actual study, there were no major differences in the scores obtained by the two groups.

Negative points influencing the validity of the questionnaire were the following:

- too many structured, closed-ended questions were asked, which might have failed to explore the complexities that arose from management of complications from diseases of life style;
- due to the high workload, some of the registered nurses opted to complete the questionnaire after hours. Out of fear of appearing incompetent, the registered nurses could have looked up the answers to the questionnaire, influencing the results, and
- the questionnaire was compiled making use of current national and provincial protocols on diabetes and hypertension. These protocols are in current use in the CHC's/clinics. There is a possibility that the knowledge contained in these protocols were known to the registered nurses, as a result of being in use currently.

## CHAPTER 5

### DISCUSSION

In order to achieve the primary aim of the study, namely to assess the knowledge of registered nurses at primary level of care in the Helderberg area in respect of skin integrity, foot care and nutritional needs of a diabetic client with a stroke, the researcher set six objectives as stated in Chapter 3 of the study.

Arising from the analysis and presentation of the results of the study, key issues have been identified for discussion. The researcher will present these in the same format as the presentation of results in Chapter 4 of the study.

#### **5.1 Objective 1: To describe the demographic details of the registered nurses working within the Helderberg area.**

Eight CHC's/clinics were identified within the boundaries of the Helderberg area, namely Macassar CHC, Somerset West clinic, Strand CHC, Ikhwezi CHC, Fagan Street clinic, Gordon's Bay clinic, Rusthof/Gustrouw CHC and Sir Lowry's Pass clinic. Fifty registered nurses are currently working at these CHC's/clinics. Of the 50 registered nurses, 88% (n = 44) completed the questionnaire. Ninety eight percent (n = 43) of the registered nurses were female and 2% (n = 1) one was male.

The age of the registered nurses who completed the questionnaire, ranged from 20 years to 59 years, 41% (n = 18) of the registered nurses are in the age group 30 to 49 years. The years working at primary level of care ranged from 0 to 29 years service. Eighty percent (n = 35), which is the majority of the registered nurses, have been working at primary level of care for between 0 and 10 years. Ninety percent (n = 40) of the registered nurses had a diploma qualification, while 10% (n = 4) registered nurses had a degree qualification.

Seventy seven percent (n = 34), which is the majority of the registered nurses, completed their basic training during the 1980s and the 1990s. The last part of the demographic data collected was in respect of the post-basic qualification of curative skills for PHC. Seventy seven percent (n = 34) of the registered nurses, who completed the questionnaire, have the qualification of curative skills for PHC, while 23% (n = 10) did not.

The training of registered nurses in curative skills for PHC is in line with both the provincial and national principles of the National Health Plan. The major thrust of the curriculum is of curative nature, but emphasis is placed on the prevention and promotion aspects of health as well. This is reflected in the numbers of registered nurses, namely seventy seven percent (n = 34), who have the qualification. The researcher feels the knowledge that the registered nurses received throughout the duration of the course should have equipped them better in managing clients with diseases of life style plus its accompanying complications.

Objective 2 looked at the overall knowledge of the registered nurses on aspects such as skin integrity, foot care and nutrition of a diabetic client with a stroke, two conditions of life style.

## **5.2 Objective 2: To assess the overall % knowledge score obtained by registered nurses regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.**

All the participants completed these sections of the questionnaire. Percentage score obtained ranged from an exceptional knowledge base, namely 100%, to an average knowledge base, namely 60%.

The registered nurses obtained the highest % score for section E of the questionnaire. Section E tested the knowledge of the registered nurses regarding the nutritional status of a diabetic client with a stroke. Section D tested the knowledge of the registered nurse on the maintenance of the nutritional status of the diabetic client with a stroke. The % score obtained for this section was 90%. Section C tested the knowledge of registered nurses regarding the maintenance of foot and skin care. The % score obtained for this section was 86%. The lowest % score obtained by the registered nurses were for section B of the questionnaire. Section B tested the knowledge of the registered nurses regarding their knowledge of the prevention of skin breakdown. The questions in this section were of a rehabilitative nature and the researcher feels that the registered nurse should have knowledge of these aspects, plus the aspects covered in the other sections. The registered nurses do not function alone, but are part of a team, rendering a service to the benefit of the client. (Pritchard *et al*, 1994), state that when members function in a team, they share aims and ideas; they can tap into each other's resources and is always available for each other. It is thus imperative that the registered nurses gain this knowledge, for a problem that is currently perceived as a rehabilitative problem, could flow over into a problem concerning the registered nurse, e.g., if a registered nurse does not know how to position a diabetic client with a stroke in a wheelchair, he could develop pressure sores. Treating pressure sores is a task of the registered nurses. The %



scores obtained in this objective for the four sections of the questionnaire, ranging from between 72% to 90% could be attributed to the following three factors:

- the registered nurses actively working in the field gained their knowledge through working with clients on a daily basis;
- the knowledge currently available in the form of national and provincial protocols is known to the registered nurses, and implemented, and
- the type of questions that were asked, e.g., closed-ended questions, could have had an influence on the outcome of the results.

**5.3 Objective 3(a): To compare the difference in the % knowledge score obtained by registered nurses at the eight CHC's/clinics regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.**

Of the 44 registered nurses who completed the questionnaire, 15 worked at Macassar CHC, 4 at Sir Lowry's Pass clinic, 3 at the Strand CHC, 1 at Fagan Street clinic, 4 at Somerset West clinic, 6 at Ikhwezi CHC, 6 at Gustrouw/Rusthof CHC, and 5 at Gordon's Bay clinic.

The registered nurses working at the Strand CHC obtained the highest % score, namely 87%, while the registered nurses working at Ikhwezi CHC obtained the lowest % score, namely 78%. There is a demographic difference between these two CHC's. The three registered nurses working at the Strand CHC render a service to a smaller, more affluent community. This area is a popular holiday destination, with holidaymakers making use of the facility when needed. In contrast, the six registered nurses working at Ikhwezi CHC, render a service to clients from two big informal settlements, namely Nomzamo and Lwandle. On a daily basis, clients are turned away due to the excessive numbers. The inhabitants of these settlements are mostly of African origin.

Key issues, namely the size of the CHC's/clinics and the CHC's/clinics where the registered nurses work, arose when scrutinising the results obtained in this objective. Geographically Macassar CHC, Rusthof/Gustrouw CHC and Ikhwezi CHC are the CHC's with the highest concentration of registered nurses working there. These three CHC's in addition render a service to a vast number of clients living within the geographical boundaries.

At the time of data collection, 5% (n = 2) registered nurses of African origin completed the questionnaire. They had English and Afrikaans as second and third languages. Both these registered nurses work at Ikhwezi CHC. The questionnaire administered to all the registered nurses was in English and Afrikaans and contained closed-ended questions only. It was possible that these registered nurses experienced problems in interpreting the meaning of the questions in the questionnaire, which could have altered the outcome of the results of the questionnaire, but due to the fact that they were only two out of forty four, the outcome of their questionnaire could possibly not have an impact on the study results.

Registered nurses working at the eight CHC's/clinics repeatedly answered certain questions throughout the questionnaire incorrectly. The questions frequently answered incorrectly in the section testing the knowledge of the registered nurses on the prevention of skin breakdown (section B), were question sixteen and seventeen. These two questions required the registered nurse to indicate whether the sun makes the skin of a diabetic client with a stroke tougher and whether hot bathwater promotes the circulation of a diabetic client with a stroke

Although these aspects are not all directly related to nursing, it is important for the registered nurse, as part of a team, to have the knowledge to manage these clients. Having the knowledge in managing these clients effectively could prevent the development of further complications, such as bedsores, ulceration and gangrene.

**5.4 Objective 3(b): To compare the difference in % knowledge score obtained by registered nurses with and without the qualification of curative skills for PHC regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.**

The results showed that the registered nurses with the post-basic qualification of curative skills for PHC (PGWC, 2000), demonstrated better knowledge base on the aspects in question. They obtained 84% compared to the registered nurses without the qualification who obtained 82%. Seventy seven percent (n = 34) of the registered nurses who completed the questionnaire were in possession of the mentioned qualification while 23% (n = 10) were not.

In respect of the aspects of skin breakdown, foot care, skin integrity and nutritional status that were covered in the questionnaire, a pattern emerged. Both categories of registered nurses answered the same questions incorrectly and correctly in each section.

The major thrust of the curriculum of curative skills for PHC is curative, preventive and promotive care (PGWC, 2000). Although the registered nurses with the mentioned qualification showed a better knowledge base it is evident that there is a deficiency in the curriculum, which will have to be addressed in order to produce registered nurse with a comprehensive knowledge base to the benefit of the client.

**5.5 Objective 3(c): To compare the difference in the % knowledge score obtained by registered nurses who have a diploma and a degree qualification regarding skin integrity, foot care and nutrition of a diabetic client with a stroke.**

Ninety percent (n = 40) of registered nurses, who completed the questionnaire, have a diploma qualification and 10% (n = 4) have a degree qualification.

Reviewing the curriculum of the basic nursing training, only 216 out of a total of 5 018 hours are spent on conditions such as diabetes and hypertension that can lead to disability (WWCN, 2002). There is also an unproven assumption that the degree qualification has more theoretical input than the diploma qualification, leaving the newly qualified registered nurse with a degree less equipped to render a comprehensive service to the client, i.e. has a stronger knowledge base. The findings in this objective tend to support this. However, practical and clinical competencies are not addressed.

In summary, the registered nurse with a degree qualification obtained a higher % score, although both categories of registered nurses found the same questions problematic. Additional factors to keep in mind are that the majority of registered nurses with both types of qualification have been actively working at primary level of care for less than 10 years. In this period an abundance of knowledge on conditions of life style, in the form of national and provincial protocols have been published, which is freely available to all those working at a primary level of care.

**5.6 Objective 4: To assess whether the number of years working at primary level of care have an influence on the knowledge of the registered nurses regarding their knowledge of skin integrity, foot care and nutrition of a diabetic client with a stroke.**

The majority, namely 85% (n = 35) of registered nurses who completed the questionnaire have been working at primary level of care for between 0 and 10 years. The scatter plot graph, used to illustrate the results of this objective, indicated a horizontal line throughout, i.e. the results showed that there was no statistical significance in respect of the number of years that the registered nurse

had been working at primary level of care and the knowledge base that she/he has acquired during the period. The results obtained for the amount of years working at primary level of care in comparison to the knowledge base that the registered nurse acquired can be due to the following five factors:

- the registered nurses acquired knowledge and experience on a daily basis while working with the client at primary level of care;
- the training material, in the form of national and provincial protocols available to all health care workers, constantly updates the knowledge of the registered nurses, regardless of the period of time worked at primary level of care;
- the knowledge gained during the post-basic qualification, curative skills for PHC, equipped the registered nurses with the knowledge to treat the client, regardless of the period of time spent at primary level of care;
- the knowledge gained during the basic nursing training, be it for the diploma or the degree, is sufficient for the registered nurses to render a service to a client at primary level of care, and
- the type of questions asked in the questionnaire and the design of the study could have had an influence on the outcome of the result of the objective.
- in addition, those with curative skills qualification work in the same environment as those who do not, and knowledge transference could have taken place from one to another.

**5.7 Objective 5: To identify in which of the sections of the questionnaire the registered nurses faired well in and in which they faired poorly.**

The registered nurses obtained the highest %, namely 91% for section E of the questionnaire. This section tested the knowledge of the registered nurse on aspects of maintenance of the nutritional status of a diabetic client with a stroke. Possible reasons for the high % score obtained may be the following:

- Training material, in the form of national and provincial protocols are available to all health care workers.
- Updates on conditions of life style were presented to registered nurses throughout the year at HRD & T. A qualified dietician covered nutritional aspects broadly.
- This section of the questionnaire required the registered nurse to answer only *yes* or *no*. The registered nurse had a 50% chance in answering correctly, even though they did not know the correct answer.

The section, in which the registered nurses obtained the lowest % score, was for section B of the questionnaire. The % score obtained for this section was 72%. This section tested the knowledge of the registered nurses on prevention of skin breakdown of a diabetic client with a stroke. A possible reason for the poorer performance of the registered nurses is the fact that this section is predominantly rehabilitation orientated. As mentioned previously, the registered nurse is part of a team and it is imperative that they work together with the rehabilitation staff in acquiring this knowledge to the benefit of the client.

## **5.8 Conclusion**

The highest % score obtained by one of the registered nurses for her overall knowledge on aspects of prevention of skin breakdown, the maintenance of foot care, skin integrity and the maintenance of the nutritional status of a diabetic client with a stroke, was between 95% and 100%. The lowest % score obtained ranged from between 60% to 65% and was also obtained by only one registered nurse. The majority of the registered nurses, namely 92% (n = 40) showed an acceptable level of knowledge in respect of the 3 aspects mentioned, namely between 60% and 90%. No registered nurse scored 100% in respect of all three aspects tested, i.e. skin integrity, foot care and nutrition.

The overall average % score obtained by the registered nurses on skin integrity, foot care and nutrition of a diabetic client with a stroke was 80%. The highest % score obtained by the registered nurses working at the eight CHC's/clinics was 78%. The registered nurses with the post- basic qualification of curative skills for PHC obtained 84%, while their colleagues without the qualification obtained 82%. Registered nurses with a diploma qualification obtained 83% and their colleagues with a diploma qualification obtained 86%. On average the registered nurses have an accepted knowledge base of 80%, the highest % score obtained being 91% for section E of the

questionnaire that covered aspects of nutrition, while the lowest % score obtained was 72% for section B of the questionnaire that concentrated on skin breakdown, leaving a knowledge deficit of 20%. To render an effective, comprehensive service to the client at primary level of care, it is necessary that the registered nurse have a 100% knowledge base.

In the light of the results of the study to assess the knowledge of registered nurses at primary level of care working in the Helderberg area in respect of skin integrity, foot care and nutritional needs of a diabetic client with a stroke, the researcher made recommendations that will be discussed fully in Chapter 6.

## CHAPTER 6

### RECOMMENDATIONS

Al-Turaiki (1997), in his provocative paper on disability, argued that serving humanity through prevention and early detection should be the first line of defence in the global quest for prevention of disease. In the Helderberg area it has been detected that diseases of life style are on the increase, and even though there are clubs at the CHC's to address the issues of diseases of life style, little education takes place between the registered nurse and the client in the management of the conditions and the prevention of the development of complications (observation of researcher). In addition, only 15% of the nurse's curriculum covers conditions of life style that could lead to the development of disability. It appears from this study that the majority of the registered nurses have the required knowledge regarding skin integrity, foot care and nutrition. On average the registered nurses obtained 80%, the highest % score obtained being 91% for section E that tested the knowledge of the registered nurses on aspects of nutrition and the lowest % score obtained being 72% for section B that tested the knowledge of registered nurses on the prevention of skin breakdown, leaving a knowledge deficit of 20%. No registered nurses obtained 100% for the aspects regarding the prevention of skin breakdown, the maintenance of foot care, skin integrity and the maintenance of the nutritional status of a diabetic client with a stroke covered in the questionnaire. Hence the following recommendations are made.

#### 6.1 In respect of registered nurses

Throughout the presentation of the results it was stated that although there was a difference in the results, it was of no statistical significance. These results although of no statistical value, are of clinical value to the registered nurse. The registered nurses answered an important aspect such as skin breakdown poorly. In the management of a diabetic client with a stroke, it is of utmost importance that the registered nurses have a comprehensive knowledge base on these aspects as well as aspects regarding the maintenance of foot care, skin integrity and the maintenance of the nutritional status. This knowledge is essential for the management of a diabetic client with a stroke at primary level of care. To be able to deliver a comprehensive service at primary level of care the registered nurses should:

- encourage the clients to report any uncertainties regarding their disease before it is too late and complications have set in;

- develop a sense of awareness regarding the diseases of life style, and should pay attention to the prevention of the development of complications of such diseases;
- develop skills of being life long learners in the field of education, in order to manage any new diseases that present at the CHC's/clinics (such as the increase of diseases of life style), and
- see to it that the prevention strategy as set out by the Alma Ata, is the first line of defence in the prevention of the development of complications of diseases of life style, and that it is implemented at primary level of care (Al-Turaiki, 1997).
- The registered nurses should be made aware of the deficit(s) in their knowledge base regarding the aspects of prevention of skin breakdown, the maintenance of foot care, skin integrity and the maintenance of the nutritional status of a diabetic client with a stroke. In line with the principles set out by the ANC in 1994 in the National Health Plan, it is the responsibility of the registered nurse to cover the deficit with the relevant knowledge needed to render a comprehensive service at primary level of care.

## **6.2 In respect of area managers of the eight CHC's/clinics:**

The registered nurses working at the CHC's/clinics have a right to access knowledge regarding rehabilitation and the complications that may develop if the client is not properly managed. It is assumed that such knowledge will enable the nurses to render optimal service to the benefit of the client. Management therefore should try to:

- develop a comprehensive strategy with the trainers to promote in-service training programmes in areas of deficiency;
- tap into the existing structures (hospitals and training centres) for knowledge on rehabilitation and the possible complications, especially in high risk groups such as diabetics.



- develop a conducive environment, e.g., supplying enough staff, where the staff will be able to learn about the different aspects of disability and the possible complications that may result from the incorrect treatment e.g., insufficient health education, not changing or modifying high risk health behaviour, e.g., stopping smoking or lack of knowledge.

### **6.3 In respect of the rehabilitation staff**

It is not the responsibility of the rehabilitation staff only to render a service to the clients at primary level of care. All health professionals, within their professional boundaries, as members of a team have a responsibility towards the clients to render a service that is conducive to promoting health and wellbeing (Pritchard *et al.*, 1994). In the light of this the rehabilitation staff should try to:

- develop a comprehensive strategy with the trainers, the clients and the registered nurses at the health facility to promote in-service training programmes in areas in the knowledge and skills base where there are deficiencies. This strategy could be beneficial to the registered nurses, the rehabilitation staff as well as the clients. Due to the minimal number of rehabilitation staff, the registered nurses can help the rehabilitation staff with their workload. By lightening the burden of the rehabilitation staff, clients that would have been turned away due to the minimal number of rehabilitation staff can be managed by the registered nurses.

### **6.4 In respect of the HRD and T Section of the Department of Health**

The vision of the WGWC: HRD & T, is to train registered nurses to be competent, independent practitioners, who will fulfil a central role at primary level in rendering holistic, secondary preventive health care within a comprehensive health service, as well as primary and tertiary preventive care (PGWC, 2000). HRD and T therefore should try to:

- develop a one-day in-service training programme, involving all the relevant role players, e.g., physiotherapists, doctors, and occupational therapists from the rehabilitation unit stationed at the metropole region, in order to develop a comprehensive programme that would cover all the deficiencies that were exposed by the study in objective 3a, 3b and 3c.

## **6.5 In respect of the clients**

According to Al-Turaiki (1997), the world economy and the present state of our natural resources simply cannot cope with the curative and rehabilitative sides of the medical sciences. Not all disabilities are preventable, but for those that are preventable, let prevention and early detection be the first line of defence in the global quest for healthy citizens. With this in mind the researcher recommends that the clients should develop:

- a sense of responsibility towards their own health. This will lead the clients to taking charge of their own lives, preventing the development of complications as a result of diseases of life style, and inevitably enhance a health status that will be beneficial to them
- a sense of assertiveness regarding the type of service that they should receive at the CHC's/clinics. They should strive towards developing a partnership with the health facilities and the staff rendering a service to them, in which dissatisfaction can be discussed in an environment of commitment to health for the maintenance health and well being.

## **6.6 In respect of PGWC**

PGWC's mission is to expand and improve the personal and professional capacity of professional nurses at primary level of care to render holistic, effective and efficient health services, characterised by a caring ethos. PGWC therefore strives to develop an informed, motivated and committed multi-disciplinary team member who will enable people at community level to have access to efficient, affordable care, within the context of their health needs, from pre-conception to death (PGWC, 2000).

The BTT has a vision that by the year 2010 services at primary level of care should be nurse-driven, but as stated in the literature review, there is currently a major drain on health personnel, especially the nursing profession, to foreign countries. The most popular reasons given for the migration are improved working conditions and better remuneration.

As stated earlier, the researcher has noted that little education takes place between the client and the nurse during the sessions at the chronic clubs. On the other hand, the study has demonstrated that

the registered nurses have sufficient knowledge regarding the three aspects tested. The question arises as to whether conditions of service could be impacting on how the registered nurses deliver services at primary level of care. In South Africa medical officers who specialise in a specific field, are compensated for their knowledge and skills. This is not the case in the nursing profession, especially not at primary level of care. PGWC should therefore strive to:

- investigate the remuneration package of the registered nurses, making it more competitive when compared to those of the medical officers and their counterparts in the private sector in order to retain current staff and to recruit applicants to the public service. The vision of the BTT, based on the *Alma Ata Declaration*, will only be realised when the government commits to a partnership with the relevant role players, e.g., the registered nurses at primary level of care, and to compensate them in both monetary ways and improved working conditions.

## **6.7 In respect of the researcher**

Throughout this chapter the researcher has made recommendations to other bodies in order to equip the registered nurses with the necessary knowledge for managing a diabetic client with a stroke at primary level of care. The researcher feels that recommendations should not only apply to others, but to her self as well. With the possibility of further studies, the following recommendations can be applied to achieve a higher level of reliability and validity:

- make use of a wider spectrum of participants, e.g., not only registered nurses, but also other categories of nursing staff. All categories of nurses at primary level of care should be sensitised to prevention strategies;
- administer questionnaires in all three official languages of the Western Cape, namely Afrikaans, English and Xhosa, giving the participants who have English and Afrikaans as second and third languages an equal opportunity to express themselves;
- make use of a wider spectrum of question types, e.g., closed-ended questions as well as open-ended questions, giving the participants the opportunity to interpret and answer the questions more accurately;

- make use of interviews as a method of data collection, thus avoiding situations where participants are compelled to complete questionnaires at home. This eliminates all possibilities of irregularities, and
- conduct further studies in the researcher's first language, which is Afrikaans. This will give the researcher the opportunity to conduct discussions more eloquently.

## **CLOSING REMARKS**

As a closing remark to the study, the researcher thought it suitable to use an unreferenced old Chinese saying to emphasise the importance of knowledge. It reads as follows:

*Give a man a fish and he has food for a day.*

*Teach him to catch a fish and he has food for life.*

To substantiate the saying, Kuan-Tzu states:

*If you plan for a year, sow a seed.*

*If you plan for a decade, plant a tree.*

*If you plan for a century, educate the people.*

## REFERENCES

- African National Congress. (1994a). *A National Health Plan for South Africa*. World Health Organisation and Unicef.
- African National Congress. (1994b). *The Reconstruction and Development Programme*. Pretoria: Umanyano Publications.
- Allers, E. (2002). Families and Illness. *Continuing Medical Education Journal*, 20 (11): 720-723.
- Al-Turaiki, M.H.S. (1997). Rehabilitation International Global Policies and the Plan of Action on Disability Prevention. *Saudi J. Disabil Rehabil*, 3(3): 119-129.
- Beaglehole, R, Bonita, R. & Kjellstrom, T. (1993). *Basic Epidemiology*. World Health Organisation.
- Beeves, G, Lip, G. & O'Brian, E. (2001). *ABC of Hypertension*. London: BMJ Publishing Group.
- Bloom, A. (1986). *Life with Diabetes*. London: British Medical Association.
- Burgess, A. (1992). *Nutrition for developing countries*. London: Oxford University Press.
- Clarke, A. (1995). Treading Carefully. *Diabetes Focus*, an Official Publication of the South African Diabetes Association, 1 (1): 11-12.
- Denhill, K, King, L. & Swanepoel, T. (1999). *Aspects of Primary Health Care; Community Health Care in Southern Africa*. Cape Town: Oxford University Press.
- Department of Health. (1996). *National Drug Policy for South Africa*. Cape Town.
- Department of Health. (1998a). *National Programme for Control and Management of Diabetes Type 2 at Primary Level*. Pretoria.
- Department of Health. (1998b). *National Programme for Control and Management of Hypertension at Primary Level*. Pretoria.
- Department of Health. (2000). *National Guideline on Foot Health at Primary Level*. Pretoria.

Department of Health. (2001a). *A Comprehensive Primary Health Care Service Package for South Africa*. Pretoria.

Department of Health. (2001b). *The Primary Health Care Package for South Africa – A Set of Norms and Standards*. Pretoria.

Department of Health. (2002a). *Branch Operations: Chief Directorate Metro Region: Directorate Community Health Services Organization: Investigation into the creation of posts of Clinical Nurse Practitioners at Community Health Centres: Project 90/2002*. Cape Town.

Department of Health and Social Services. (2000). *Report of the Bi-Ministerial Task Team on the Implementation of a Municipality-Based District Health System*. Cape Town.

Dreyer, M, Hatting, S. & Lock. M. (1997). *Aspects of Community Nursing*. South Africa: King Edward Trust.

Ellis, J.R. & Nowlis, E.A. (1989). *Nursing: A Human Needs Approach*. Boston: Houghton Mifflin Company.

Grimes D.A. & Schulz, K.F. (2002). The Lancet. Epidemiology Series: *Family Health International*, (359): 57–61.

Haas, J. (1993). Ethical Considerations of Goal Setting for Patients in Rehabilitation Medicine. *American Journal of Physical Medicine and Rehabilitation*, 77 (1): 16-20.

Helderberg Administration, 2002. Random Monthly Statistics. August to October 2002.

Human, L. (1996). Diversity during Transformation. *Human Resource Management*, 12 (2): 4-12.

Katzenellenbogen, J.M, Joubert, G. & Abdool Karim, S.S. (1997). *Epidemiology: A Manual for South Africa*. Cape Town: Oxford University Press.

Krentz, A.J. (1997). *Colour Guide to Diabetes*. New York: Churchill Livingstone.

Lewis, B. (1989). *Cholesterol and Coronaries*. London: Family Doctor Publications.

Marriner-Tombay, A. (1988). *Nursing Theorists and Their Work*. St Louis: C.V. Mosby.

Mellish, J. M, Brink, H.I.L. & Paton, F. (1998). *Teaching and Learning the Practice of Nursing*. Cape Town: University Press.

- Maseko, J. (1995). Managing Controversy in Diversity. *Human Resource Management*, 11 (5): 23-28.
- Mohammed, H. (1997). Rehabilitation International Global Policies and the Plan of Action on Disability Prevention. *Saudi J Disability Rehabilitation*, 3 (3): 119-129.
- Netter, F.N. (1995). *The Ciba Collection of Medical Illustrations: Endocrine Systems and Selected Metabolic Diseases*. New York: Ciba Pharmaceutical Company.
- Pritchard, P. & Pritchard, J. (1994). *Teamwork for Primary and Shared Care*. England: Oxford Medical Publications.
- Provincial Government of the Western Cape (1999). *Guidelines for Primary Care Evaluation and Management of Common Medical Problems in Adults*. Cape Town.
- Provincial Government of the Western Cape (2000). *Certificate Course Curriculum: Curative Skills for PHC*. Cape Town
- Purtilo, B. (1988). Ethical Issues in Teamwork: The Context of Rehabilitation. *Arch Phys Med Rehabil*, (69): 318-322.
- Searle, C. (1988). *Aspects of Selected Nursing Issues*. Durban: Butterworth Publishers.
- Searle, C. & Pera, S. (1992). *Professional Practice: A South African perspective*. Butterworth: Durban.
- Silman, A.J. (1988). *You and Your Blood Pressure*. London: William Clowes.
- SmithKline Beecham Pharmaceuticals. (1992). *Primary Clinical Care Manual*. South Africa: Jacana Education.
- South Africa (1996). *The people of South Africa, Population Census*. Pretoria.
- Starfield, B. (1992). *Primary Care. Concept, Evaluation and Policy*. New York: University Press.
- The Constitutional Assembly (1996). *The constitution of the Republic of South Africa*. Type face Media, Cape Town.
- Thom, A. (2003). Fewer Doctors, Nurses to Tend to our Sick. *Argus*, March 26: 5.
- UWC. (2002). *Population Gauge, Population Data*. Cape Town: School of Public Health.



- Vlok, M. (1996). *Manual of Community Nursing*. Cape Town: Juta.
- Warren, E. (2001). Management of Stroke in Primary Care: *Update Curriculum*, 15 (3): 17-20.
- Warren, M. (1985). Promoting Health and Preventing Disease and Disability – An Introduction to the Concepts, Opportunities and Practice. *Physiotherapy Practice*, 82 (12): 57-63.
- Watkins, P. (1998). *ABC of Diabetes*. London: BMJ Publishing Group.
- Western Cape College of Nursing (2002). *Introduction and orientation: Academic Personnel*.
- World Health Organisation. (1994). *Community-Based Rehabilitation and the Health Care Referral Services: A Guide for Program Managers*. Geneva.
- World Health Organisation. (2001). *International Classification of Functioning, Disabilities and Health*. Geneva.
- Winberg, C. (1996). *Teaching Primary Health Care*. Cape Town: The Abet training series.
- Young, M. (1997). Management of Diabetic Foot Ulceration. *The Journal of Continuing Education for Nurses*, (1): 7-11.

## **APPENDIX A**

### **PARTICIPANT INFORMATION AND CONSENT FORM.**

**An assessment of the knowledge of registered nurses at primary level of care working in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.**

#### **OF PARTICIPANT STATEMENT BY OR IN LIEU:**

I, the undersigned,....., Registered nurse working in the Helderberg area confirm that:

1. I am invited to participate in the above mentioned research project that is initiated through the University of Stellenbosch.
2. It has been explained to me that the objective of this study is to:

#### **ASSESS:**

- The level of qualifications of each registered nurse.
  - The knowledge of registered nurses working at primary level of care in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.
3. It has been explained that a questionnaire regarding my knowledge of the above needs to be completed.
  4. I am aware that this is a once off procedure that will be implemented in 2003 at a time convenient to me.
  5. It has been explained that all information will be handled confidentially. Information may be used for a thesis, a publication in scientific journals and presentation of professional presentations.

6. It has been explained that findings from this study may be brought to the attention of the Local Authorities and Community Health Centres.
7. It has been explained that I may have full access to information that has been gathered in this study.
8. I have been informed that I may refuse to participate in this study, and that such refusal will not in any way negatively influence me in my place of work.
9. The information above has been explained to me by ....., and that my questions have been answered satisfactorily.
10. There has been no force placed on me to consent to my participation in this study and that I realize that I may stop at any time.
11. Participation in this study will not lead to additional costs for myself and that I will not benefit from it financially.

**I HEREBY DECLARE THAT I WILL VOLUNTARILY PARTICIPATE IN THE ABOVE STUDY:**

Signed at ..... on .....20.....

.....

Participant's signature.

.....

Witness.

**STATEMENT BY RESEARCHER:**

I, Danielle Jordaan, state that:

1. I have explained the information in this document to .....
2. I have invited her/him to ask me questions in the case of uncertainty:

**Signed at ..... on .....20....**

.....  
Researcher (Danielle Jordaan)                      Witness  
Student number: 12836478

**IMPORTANT INFORMATION:**

Dear participant

Thank you very much for your participation in this study. Should you have any questions during the duration of this study regarding:

- Problems as a result of the research, or
- Questions regarding information about the project

Please contact me at the following telephone number:

- Home:                                      021 981 9587
- Work:                                        021 918 1653
- Cell:                                         083 564 9589

Ms Danielle Jordaan.

## **APPENDIX B**

### **DEELNEMER INLIGTINGS - EN TOESTEMMINGSVORM**

**'n Onderzoek na die kennis van geregistreerde verpleegkundiges werkende op primêre vlak in die Helderberg area met betrekking tot velintegriteit, voetsorg en voeding van 'n diabeet met 'n beroerte.**

#### **VERKLARING DEUR OF NAMENS DEELNEMER:**

Ek, die ondergetekende, ....., Geregistreerde Verpleegkundige werksaam in die Helderberg area bevestig dat:

1. Ek uitgenooi is om deel te neem aan bogenoemde navorsingsprojek wat deur die Universiteit van Stellenbosch onderneem word.
2. Daar aan my verduidelik is dat die doel van die studie is om te:

#### **BEPAAL:**

- Die vlak van kwalifikasies van elk van die geregistreerde verpleegkundiges.
  - Die kennis van die geregistreerde verpleegkundiges werksaam op primêre vlak in die Helderberg area met betrekking tot velintegriteit, voetsorg en voeding van 'n diabeet met 'n beroerte.
3. Daar aan my verduidelik is dat daar 'n vraelys aangaande bogenoemde ingevul moet word.
  4. Ek bewus is daarvan dat dit 'n eenmalige prosedure is wat in 2003 uitgevoer sal word op 'n tyd wat vir my geleë is.
  5. Daar aan my verduidelik is dat alle inligting vertroulik is en konfidensieel hanteer sal word.
  6. Inligting kan aangewend word in 'n tesis, publikasie in vaktydskrifte of 'n professionele voordrag.

7. Daar aan my verduidelik is dat bevindings van hierdie studie onder die aandag van die Plaaslike Owerhede en die Gemeenskapsgesondheid sentras gebring mag word.
8. Daar aan my verduidelik is dat ek volle toegang mag hê tot inligting wat tydens die studie ingewin word.
9. Ek is meegedeel dat ek mag weier om deel te neem aan die studie, en dat sodanige weiering nie 'n negatiewe invloed mag hê in my werksplek nie.
10. Die inligting hierbo weergegee is deur .....en dat ek die geleentheid gegee is om vrae te vra en dat al my vrae tot my bevrediging beantwoord is.
11. Daar geen dwang op my geplaas is om toe te stem tot my deelname aan hierdie studie nie en dat ek besef dat ek deelname enige tyd mag staak.
12. Deelname aan hierdie projek geen addisionele koste vir my inhou nie en dat ek ook nie finansiële daarby sal baat vind nie.

**EK STEM HIERMEE VRYWILLIG IN OM DEEL TE NEEM IN BOGEMELDE STUDIE:**

Geteken te ..... op .....20.....

.....

Deelnemer se handtekening.

Getuie.

**VERKLARING VAN DIE NAVORSER:**

Ek, Danielle Jordaan, verklaar dat ek:

1. Die inligting vervat in hierdie dokument aan ..... verduidelik het;
2. Hom/haar versoek het om vrae aan my te stel indien enigiets onduidelik was;

Geteken te .....op.....20.....

.....  
Navorsers (Danielle Jordaan)

.....  
Getuie

Studente nommer: 12836478

**BELANGRIKE INLIGTING:**

Geagte deelnemer. Baie dankie vir u deelname aan hierdie studie. Indien daar te enige tyd tydens die duur van die projek:

- Probleme ondervind word wat spruit uit die navorsing, of
- u verdere inligting aangaande die projek verlang, kontak my asseblief per telefoon by
- Huis: 021 981 9586
- Werk: 021 918 1653
- Sel: 083 564 9589

Me Danielle Jordaan

## APPENDIX C

The Town Clerk  
City of Cape Town  
Helderberg Administration  
P.O. Box 3  
Strand  
7140

Attention: Ms A Fox

**An assessment of the knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.**

As a part-time masters student at the Faculty of Health Sciences at the University of Stellenbosch, I plan to conduct a research project in the Helderberg geographical area in 2003. The aims of the study are as follows:

**To access:**

- The level of qualifications of each registered nurse.
- The knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.

I would like to ask your permission for the registered nurses to complete a questionnaire. It would take about twenty-five (25) to thirty (30) minutes to complete it. I am planning to conduct the study at the beginning of 2003.



Should you have any questions regarding the proposed study, please do not hesitate to contact me at any of the following numbers:

- Work: 021- 9181653
- Home: 021- 9819587
- Cell: 083 564 9589

Yours sincerely

(D. Jordaan, Ms)

(G. Mji, Ms) Supervisor

## APPENDIX D

The Town Clerk  
City of Cape Town  
Oostenberg Administration  
Private Bag X16  
Kuilsriver  
7597

Attention: Ms E van der Merwe

**An assessment of the knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.**

As a part-time masters student at the Faculty of Health Sciences at the University of Stellenbosch, I plan to conduct a research project in the Helderberg geographical area in 2003. The aims of the study are as follows:

**To access:**

- The level of qualifications of each registered nurse.
- The knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.

In order to be able to test the draft questionnaire, I would like to conduct a pilot study in the Oostenberg area.

I would like to ask your permission for five (5) registered nurses of your choice to complete a draft questionnaire. It would take about twenty-five (25) to thirty (30) minutes to complete it. I am planning to conduct the pilot study in the latter part of 2002.

Should you have any questions regarding the proposed study, please do not hesitate to contact me at any of the following numbers:

- Work: 021 - 918 1653
- Home: 021 - 981 9587
- Cell: 083 564 9589

Yours sincerely

(D. Jordaan, Ms)

(G. Mji, Ms) Supervisor

## APPENDIX E

The Medical Superintendent  
Community Health Services Organization  
Private Bag X7  
Woodstock  
7915

Attention: Ms J. Hair and Ms L. Mzilikazi

**An assessment of the knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.**

As a part-time masters student at the Faculty of Health Sciences at the University of Stellenbosch, I plan to conduct a research project in the Helderberg geographical area in 2003. The aims of the study are as follows:

**To access:**

- The level of qualifications of each registered nurse.
- The knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutritional needs of a diabetic client with a stroke.

I would like to ask your permission for the registered nurses to complete a questionnaire. It would take about twenty-five (25) to thirty (30) minutes to complete it. I am planning to conduct the study at the beginning of 2003.

Should you have any questions regarding the proposed study, please do not hesitate to contact me at any of the following numbers:

- Work: 021 - 9181653
- Home: 021 - 9819587
- Cell: 083 564 9589

Yours sincerely

(D. Jordaan, Ms)

(G Mji, Ms) Supervisor

## APPENDIX F

City of Cape Town  
Director: City Health  
Civic Centre  
Cape Town  
8000

Attention: Dr. I. Thoms

**An assessment of the knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.**

As a part-time masters student at the Faculty of Health Sciences at the University of Stellenbosch, I plan to conduct a research project in the Helderberg geographical area in 2003. The aims of the study are as follows:

**To access:**

- The level of qualifications of each registered nurse.
- The knowledge of registered nurses working at primary level in the Helderberg area in respect of skin integrity, foot care and nutrition of a diabetic client with a stroke.

I would like to ask your permission for the registered nurses to complete a questionnaire. It would take about twenty-five (25) to thirty (30) minutes to complete it. I am planning to conduct the study at the beginning of 2003.

Included is a copy of the proposed questionnaire I would like to distribute to the Registered Nurses.

Should you have any questions regarding the proposed study, please do not hesitate to contact me at any of the following numbers:

- Work: 021- 9181653
- Home: 021- 9819587
- Cell: 083 564 9589

Yours sincerely

(D. Jordaan, Ms)

(G. Mji, Ms) Supervisor

## APPENDIX G

PARTICIPANT ID: NUMBER.....

Thank you for agreeing to answer the questionnaire. All answers will be considered confidential. Please answer all the sections.

### QUESTIONNAIRE

#### SECTION A:

##### Demographic information:

1. Clinic/CHC currently working at: .....
2. Gender:      1. Female                      2. Male
3. Age (at time of interview):
4. How many years have you worked at a primary setting after completion of your studies:
5. Which nursing course did you complete? (Please tick only one appropriate option).
- 5.1 3-year diploma course (General and Midwifery)
- 5.2 3-year university degree (General and Midwifery)
- 5.3 4-year university degree (General, Midwifery, Community Health and Psychiatric)
- 5.4 4-year diploma course (General, Midwifery, Community Health and Psychiatric Nursing)
6. In which year did you complete your basic nursing training
7. Do you possess the following post-basic qualification?
- Curative Skills for Primary Health Care or equivalent                      yes                      no



PARTICIPANT ID: NUMBER.....

**SECTION B:**

**A fifty-year old male with diabetes type two (2) has recently had a stroke. He has a left sided hemiplegia. He spends three quarters of his day in bed or in a wheelchair. He can only walk with assistance from a person.**

**Please answer the following statements in respect of the prevention of skin breakdown of a diabetic client with a stroke. Please answer only YES (1) or NO (2) in the first provided square. The second square is for office use (o/u) only.**

1. The client with a stroke must spend as much time during the day out of bed as possible. **o/u**  
1. Yes      2. No
  
2. Allow for dissociation between the legs of a client with a stroke while in bed.  
(dissociation = two legs in different positions)  
1. Yes      2. No
  
3. The client should sit in the smallest wheelchair possible.  
1. Yes      2. No
  
4. The client should sit well back in the chair with his bottom against the backrest.  
1. Yes      2. No
  
5. Do not put anything under the soles of the client's feet when seated, as this will increase spasticity.  
1. Yes      2. No
  
6. The client's feet must make full contact with the wheelchair footrests.  
1. Yes      2. No

7. Inspect skin only when you suspect a pressure sore.

1. Yes      2. No

8. Fair skin is more prone to pressure sores than dark skin.

1. Yes      2. No

9. Avoid applying creams, for example PREP to the skin.

1. Yes      2. No

10. Avoid the use of safety pins or sharp objects in clothes.

1. Yes      2. No

11. Avoid wearing tight clothing or clothes with visible folds that can damage the skin.

1. Yes      2. No

12. Change wet linen immediately.

1. Yes      2. No

13. Crumbs in bed can lead to damage of the skin.

1. Yes      2. No

14. The client should shower or bath once a week.

1. Yes      2. No

15. Detergents and perfumes in soap destroy the natural oils in the skin.

1. Yes                      2. No

16. Expose the skin to the sun, as it makes the skin tougher.

1. Yes                      2. No

17. Bathwater should be nice and hot, as this promotes circulation.

1. Yes                      2. No

18. Antibiotics must be prescribed to all persons with pressure sores.

1. Yes                      2. No

PARTICIPANT ID: NUMBER.....

**SECTION C:**

**Please answer the following statements in respect of the maintenance of foot care and skin integrity in a diabetic client with a stroke. Choose only one option for each question. Write the letter (e.g. 2) in the first square provided. The second square is for office use (o/u) only.**

1. Check the feet and toes on:

**o/u**

- |   |                          |                          |
|---|--------------------------|--------------------------|
| 1. A daily basis.                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. A weekly basis.                      |                          |                          |
| 3. When you suspect something is wrong. |                          |                          |

2. Wash feet with:

- |                              |                          |                          |
|------------------------------|--------------------------|--------------------------|
| 1. Very hot water and soap.  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Luke warm water and soap. |                          |                          |
| 3. Cold water and soap.      |                          |                          |

3. Cut toenails:

- |   |                          |                          |
|---|--------------------------|--------------------------|
| 1. Straight.                              | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Rounded.                               |                          |                          |
| 3. When they hook on clothing or bedding. |                          |                          |

4. When feet are cold at night:

- |                                   |                          |                          |
|-----------------------------------|--------------------------|--------------------------|
| 1. Wear extra socks.              | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Use a hot water bottle.        |                          |                          |
| 3. Switch on an electric blanket. |                          |                          |

5. Improve blood circulation by the client exercising:

- |                                       |                          |                          |
|---------------------------------------|--------------------------|--------------------------|
| 1. On a daily basis.                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. On a weekly basis.                 |                          |                          |
| 3. When they feel they need exercise. |                          |                          |

6. Report any lesions on feet to the health worker:

- 1. Immediately.
- 2. When it is infected.
- 3. When it is painful.

7. The client should preferably wear shoes manufactured from:

- 1. Leather.
- 2. Plastic.
- 3. Synthetic leather.

8. Separate toes lying over each other with only:

- 1. Cotton wool.
- 2. A piece of cloth.
- 3. A piece of folded paper

9. Corns and calluses need to be cut by the following person:

- 1. The client him/herself.
- 2. A family member.
- 3. A chiropodist.

10. When buying shoes, they should be:

- 1. ½ size smaller.
- 2. ½ size larger.
- 3. 1 size larger.

11. Soak the feet:

- 1. On a daily basis.
- 2. Once a week.
- 3. Never.

12. Diabetic clients are prone to:

- 1. Fungal infections.
- 2. Viral infections
- 3. Parasitic infections.

13. A major complication of diabetic feet are:

1. Corns on the feet.
2. Calluses on the feet.
3. Ulceration of the feet.

14. How frequently must a client be turned to prevent skin breakdown?

1. 2- to 3-hourly.
2. 4- to 5-hourly.
3. 6- to 8-hourly.

**PARTICIPANT ID: NUMBER.....**

**SECTION D:**

**Please answer the following statements in respect of the maintenance of the nutritional status of a diabetic client with a stroke. Choose only one option for each question. Write the letter (e.g. 3) in the first square provided. The second square is for office use (o/u) only.**

1. A person should drink the following amount of water:

**o/u**

1. Only when thirsty.

2. 1 to 2 glasses per day.

3. 6 to 8 glasses per day.

2. Food should be:

1. Roasted.

2. Fried.

3. Grilled.

3. Meals should be taken as follows:

1. One large meal per day.

2. Only eat when the client is hungry.

3. At least three meals per day.

4. When constipated the client should:

1. Drink a laxative.

2. Add sugar to the diet.

3. Add roughage to the diet.

PARTICIPANT ID NUMBER.....

**SECTION E: NUTRITION CONTINUED:**

**Please answer the following statements in respect of the maintenance of the nutritional status of a diabetic client with a stroke. Please answer only YES (1) or NO (2) in the first provided square. The second square is for office use (o/u) only.**

			o/u	
1.	Eat small frequent meals.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
2.	Use very little salt in the diet.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
3.	Increase fats and oils in the diet.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
4.	Use margarine instead of butter.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
5.	Eat sugar and sugar containing foods, it gives energy.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
6.	Roughage will help to make you feel satisfied and will help bowels work properly.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
7.	Eat white bread instead of brown bread.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
8.	Do not remove excess fat from meat.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
9.	Only use full cream milk.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
10.	Try to avoid foodstuffs containing preservatives.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>
11.	Avoid peeling vegetables where possible.	1. True      2. False	<input type="checkbox"/>	<input type="checkbox"/>



## APPENDIX H

### VRAELYS:

DEELNEMER ID: NOMMER.....

Baie dankie dat u ingestem het om die vraelys te voltooi. Alle inligting word as konfidensieel beskou. Voltooi asseblief al die afdelings.

### AFDELING A:

#### Demografiese inligting:

1. Kliniek/Daghospitaal waar u huidiglik werk.....
2. Geslag:            1. Vrou                            2. Man
3. Ouderdom (ten tye van die onderhoud):
4. Hoeveel jaar is u werksaam op primêre vlak na voltooiing van u opleiding:
5. Watter verpleegkursus het u deurloop (Merk asb een toepaslike opsie)
- 5.1    3-jaar diploma-kursus (Algemeen en Verloskunde)
- 5.2    3-jaar universiteitsgraad (Algemeen en Verloskunde)
- 5.3    4-jaar universiteitsgraad (Algemeen, Verloskunde, Gemeenskapverpleegkunde en Psigiatrisiese Verpleegkunde)
- 5.4    4-jaar diploma-kursus (Algemeen, Verloskunde, Gemeenskapverpleegkunde en Psigiatrisiese Verpleging)

6. In watter jaar het u u basiese opleiding voltooi

--	--	--	--

7. Is u in besit van die volgende na-basiese kwalifikasie?

**Kuratiewe Vaardighede vir Primêre Gesondheidsorg of ekwivalent.**

Ja

Nee

'n Vyftigjarige man met diabetes tipe twee (2) het onlangs 'n beroerte gehad. Hy het 'n linkerkantse hemiplegie. Hy spandeer driekwart van sy dag in die bed of in 'n rolstoel. Hy kan slegs loop met ondersteuning van 'n persoon.

DEELNEMER ID: NOMMER.....

**AFDELING B:**

Antwoord asseblief die volgende stellings ten opsigte van die voorkoming van velafbraak van 'n diabeet met 'n beroerte. Kies slegs een opsie per antwoord. Antwoord asb slegs JA (1) of NEE (2) in die eerste blokkie voorsien. Die tweede blokkie is slegs vir kantoorgebruik (k/g).

- |    |  |        |   |
|----|--|--------|---|
| 1. | 'n Kliënt met 'n beroerte moet soveel tyd as moontlik buite die bed spandeer.  |        | <b>k/g</b>  |
|    | 1. Ja  | 2. Nee | <input type="checkbox"/> <input type="checkbox"/> |
| 2. | Laat dissosiasie tussen die bene van 'n kliënt met 'n beroerte wanneer in die bed.<br>(dissosiasie = twee bene in verskillende posisies) |        |   |
|    | 1. Ja  | 2. Nee | <input type="checkbox"/> <input type="checkbox"/> |
| 3. | Die kliënt moet in die kleinste moontlike rolstoel sit.  |        |   |
|    | 1. Ja  | 2. Nee | <input type="checkbox"/> <input type="checkbox"/> |
| 4. | Die kliënt moet terugsit in die rolstoel met sy boude rakende aan die rugstut.   |        |   |
|    | 1. Ja  | 2. Nee | <input type="checkbox"/> <input type="checkbox"/> |
| 5. | Moet niks onder die kliënt se voetsole plaas wanneer sittend in die rolstoel, dit vererger spastisiteit.                                 |        |   |
|    | 1. Ja  | 2. Nee | <input type="checkbox"/> <input type="checkbox"/> |

6. Die kliënt se voete moet ten volle kontak maak met die voetstukke van die rolstoel.
1. Ja                      2. Nee
7. Inspekteer slegs die vel wanneer u 'n drukseer vermoed.
1. Ja                      2. Nee
8. Kliënte met ligte velle is meer geneig tot druksere as donker velle.
1. Ja                      2. Nee
9. Vermy die aanwending van rome byvoorbeeld PREP aan die vel.
1. Ja                      2. Nee
10. Vermy die gebruik van hakspelde of skerp voorwerpe in klere.
1. Ja                      2. Nee
11. Moenie stywe klere of klere met sigbare voue dra wat die vel kan beskadig nie.
1. Ja                      2. Nee
12. Wissel nat linne onmiddellik
1. Ja                      2. Nee
13. Krummels in die bed kan lei tot besering van die vel.
1. Ja                      2. Nee
14. Die kliënt behoort een maal per week te bad of stort.
1. Ja                      2. Nee

15. Reinigingsmiddels en parfume in seep vernietig die natuurlike olies van die vel.

1. Ja

2. Nee

16. Stel vel bloot aan die son, aangesien dit die vel sterker maak.

1. Ja

2. Nee

17. Badwater behoort lekker warm te wees, aangesien dit sirkulasie bevorder.

1. Ja

2. Nee

18. Antibiotika moet aan alle kliënte voorgeskryf word met druksere.

1. Ja

2. Nee

DEELNEMER ID: NOMMER.....

**AFDELING C:**

**Antwoord asseblief die volgende vrae ten opsigte van die instandhouding van voetsorg en die voorkoming van velafbraak by 'n diabeet met 'n beroerte. Kies slegs een opsie per antwoord. Skryf die korrekte letter, (bv. 1) in die eerste blokkie voorsien. Die tweede blokkie is slegs vir kantoorgebruik (k/g)**

k/g

1. Kontroleer voete en tone op:

1. 'n Daaglikse basis.

2. 'n Weeklikse basis.

3. Wanneer u iets verkeerd vermoed.

2. Was voete met:

1. Baie warm water en seep.

2. Lou warm water en seep.

3. Koue water en seep.

3. Sny toonnaels:

1. Gelyk.

2. Gerond

3. Wanneer dit haak aan klere of beddegoed.

4. Indien voete koud is saans:

1. Dra 'n ekstra paar sokkies.

2. Gebruik 'n warmwaterbottel.

3. Maak gebruik van 'n elektriese kombes.

5. Verbeter bloedsirkulasie van die kliënt deur middel van oefening:
1. Op 'n daaglikse basis.
  2. Op 'n weeklikse basis.
  3. Wanneer die kliënt voel hy/sy het oefening nodig.
6. Rapporteer enige letsels aan die voete aan die gesondheidswerker:
1. Onmiddellik.
  2. Wanneer dit infektief is.
  3. Wanneer dit pynlik is.
7. Die kliënt moet verkieslik skoene dra wat vervaardig is van:
1. Leer.
  2. Plastiek.
  3. Sintetiese leer.
8. Skei tone wat oor mekaar lê slegs met:
1. Kapok (watte).
  2. 'n Stukkie lap.
  3. 'n Stukkie gevoude papier
9. Eelte en liddorings moet gesny word deur:
1. Die kliënt self.
  2. 'n Familielid.
  3. 'n Voetkundige (*chiroprodist*).
10. Met aankoop van skoene, behoort hulle:
1. ½ nommer kleiner te wees.
  2. ½ nommer groter te wees.
  3. 1 grootte groter te wees.

11. Week die voete:

1. Op 'n daaglikse basis.
2. Op 'n weeklikse basis.
3. Nooit

12. Diabetiese voete is geneig tot:

1. Swam-infeksies.
2. Virale infeksies.
3. Parasitiese infeksies.

13. 'n Major komplikasie van diabetiese voete is:

1. Eelte op die voete.
2. Liddorings op die voete.
3. Ulserasie van die voete.

14. Hoe gereeld moet 'n kliënt gedraai word om velafbraak te voorkom?

1. 2- tot 3-uurliks.
2. 4- tot 5-uurliks.
3. 6- tot 8-uurliks.



DEELNEMER ID: NOMMER.....

**AFDELING D:**

Antwoord asseblief die volgende vrae ten opsigte van die instandhouding van 'n diabeet met beroerte se voedingsbehoefte. Kies asseblief slegs een opsie per antwoord. Skryf die nommer (bv. 2) in die eerste blokkie voorsien. Die tweede blokkie is slegs vir kantoorgebruik (k/g).

k/g

1. 'n Kliënt behoort die volgende hoeveelheid water per dag te drink:

1. Slegs wanneer dors.
2. 1 tot 2 glase per dag.
3. 6 tot 8 glase per dag.

--	--

2. Voedsel behoort:

1. Gebraai te word.
2. Gebak te word.
3. Gerooster te word.

--	--

3. Maaltye behoort as volg te wees:

1. Een groot maal per dag.
2. Eet slegs wanneer die kliënt honger is.
3. Ten minste 3 maaltye per dag.

--	--

4. Indien die kliënt hardlywig is:

1. Drink 'n lakseermiddel.
2. Voeg suiker by die dieet.
3. Voeg grofheid (*roughage*) by die dieet.

--	--

DEELNEMER ID: NOMMER.....

**AFDELING E:**

Antwoord asseblief die volgende vrae ten opsigte van die instandhouding van 'n diabeet met 'n beroerte se voedingsbehoefte. Kies asseblief slegs een opsie per antwoord. Antwoord asb. JA (1) of NEE (2) in die eerste blokkie voorsien. Die tweede blokkie is slegs vir kantoorgebruik (k/g).

- |    |   |       |        | k/g                      |                          |
|----|---|-------|--------|--------------------------|--------------------------|
| 1. | Eet klein gereelde maaltye.   | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. | Maak gebruik van min sout in die dieet.   | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. | Verhoog die vet en olie inhoud in die dieet.  | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. | Gebruik margarien in plaas van botter.  | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. | Eet suiker en suikerbevattende kosse, aangesien dit energie gee.                    | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. | Grofheid ( <i>roughage</i> ) in die dieet gee 'n vol gevoel en stimuleer die derms. | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. | Eet bruin brood in plaas van witbrood.  | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. | Moenie oortollige vet van vleis verwyder nie.                                       | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. | Gebruik slegs volroom melk.   | 1. Ja | 2. Nee | <input type="checkbox"/> | <input type="checkbox"/> |

10. Probeer om voedsel wat preserveermiddels bevat vermy.

1. Ja            2. Nee

11. Vermy die afskil van groente waar moontlik.

1. Ja            2. Nee