UNIVERSITY OF ZULULAND

AN EVALUATION OF PROFESSIONAL NURSES' PERFORMANCE IN THE PREVENTION OF BLINDNESS AND REHABILITATION OF THE BLIND IN REGION H OF KWAZULU-NATAL

BY

BUSISIWE MAYA ZUNGU

AN EVALUATION OF PROFESSIONAL NURSES' PERFORMANCE IN THE PREVENTION OF BLINDNESS AND REHABILITATION OF THE BLIND IN REGION H OF KWAZULU-NATAL

BY

BUSISIWE MAYA ZUNGU

A Thesis Submitted to the Faculty of Arts, Univerity of Zululand, in fulfilment of the Degree of Doctor of Philosophy in the field of Ophthalmological Nursing Science

March 1998

Promoters:

The late Professor T.G. Mashaba

Professor J.N. Mekwa (University of the North)

TABLE OF CONTENTS

CHAPTER ONE : STATEMENT OF THE PROBLEM

CHAPTER TWO : LITERATURE REVIEW

PAGE

CHAPTER THREE : METHODOLOGY

PAGE

LIST OF TABLES

LIST OF FIGURES **PAGE**

LIST OF APPENDICES

DECLARATION

I hereby declare that this Thesis is my own original work. It is submitted to the University of Zululand in fulfilment of the requirements for the degree of Doctor of Philosophy in the field of ophthalmological nursing science.

BUSISIWE MAYA ZUNGU

Signature: B.M. Zungu

Date : 20/07/98

COPYRIGHT AND PUBLICATION OF THIS THESIS

In presenting this thesis in fulfilment of the requirement of the Doctoral degree at the University of Zululand, I agree that the Library shall make its copies freely available for inspection. I further agree that extensive copying of this thesis is allowable only for scholarly purposes. Requests for copying or reproduction of this thesis may be referred to the University of Zululand.

SIGNATURE : B. M. Zungu

DATE : 20/07/98

DEDICATION

This work is dedicated to the following persons, each of whom have inspired my confidence, buttressed my focus and made an invaluable contribution towards the completion of this study: My late parents, Mr Alfred and Mrs Evelyn Latha, for instilling in me an insatiable desire for learning; my late daughter, Nontobeko, for her encouragement in the early inception of this study; my husband Mbongiseni Zungu, for his unconditional love and support; my children, Bonisile, Celumusa, Mlamuli and Cebisile, for their patience and understanding under the most trying circumstances; and finally, my grandchildren Londiwe, Lesego and Tebogo, for offering the rare occasion of lighthearted support and laughter.

ACKNOWLEDGEMENTS

This serves to acknowledge the vision that the late Professor T.G. Mashaba espoused, which inspired the initiative to undertake this ophthalmological study. Having been my initial supervisor, I am especially indebted to her for facilitating a fruitful engagement within a field otherwise neglected; Professor J.N. Mekwa, my supervisor who has always been dedicated, sparing no effort in our shared determination to this thesis to its completion; Mr T.P. Mhlongo and Miss M.E. Dube who assisted me with the gathering and collection of information which made this study a success.

The University of Zululand also deserves special mention for its financial support as does the KwaZulu-Natal Department of Health, for granting permission to conduct crucial parts of the study in its various clinics.

Similarly, the Medical superintendents, Directors of Nursing Services, Professional nurses and patients for their co-operation.

Many thanks should by right go to the Director of Health Services in Region H, Dr Mhlongo, whose willingness to allow me undertake my research demonstrably shows eagerness to support relevant research.

A debt of gratitude is owed to Mrs S.N. Dlamini, who executed the somewhat difficult task of the preliminary typing during the inception stage of this dissertation.

A vote of thanks is due to Mr S.S. Chonco and his dutiful staff; Sphiwe, Bongi, Catherine and Dudu who strove to have my thesis timeously and assiduously type-written. Similarly, Mr K. Masemola for his co-operation in editing the thesis.

It is very much in order that my indebtness be dispensed in the direction of the many authors who in the form of either comprehensive works or journal publications, shared their expertise and thoughts with people who could have otherwise been marginally involved in the scholarly

discussions attending my thesis.

The office of the Dean Faculty of Arts for it resourcefulness, keenness to see this study completed; Professor H.W. Vilakazi and Jabulani Hulumende S. Maphalala, for their guidance and unwavering support.

ABSTRACT

TITLE: PROFESSIONAL NURSES' PERFORMANCE IN THE PREVENTION OF BLINDNESS AND THE REHABILITATION OF THE BLIND IN REGION H OF KWAZULU-NATAL

Blindness in humans is one of the most feared disabling handicaps. Over the last two decades blindness has come to be regarded as a worldwide condition that is largely preventable or curable (Taylor, Katala, Munoz and Turner, 1991). Preventable blindness, however, is a bigger problem since throughout the world, health resources are mostly used for treatment rather than for prevention of disease.

The incredible role played by vision is never fully appreciated until it is compromised. The fact is that, if anything occurs to decrease or destroy vision, it also alters the efficiency of interaction with the environment. The lost vision can never be recovered.

The concern is that despite the fact that blindness is one of the common disabilities in South Africa, eye care is inadequately recognized as an important field of nursing. This is possibly due to the fact that eye disorders are not life-threatening. The South African Nursing Council 1997 statistics on post basic qualifications reveal that there are 455 registered nurses of all races holding on ophthalmic qualification. The KwaZulu-Natal Department of Health statistics (1994) also reveal that there are only 53 professional nurses in KwaZulu-Natal qualified in ophthalmic nursing. It has been established that even these nurses are practising in such a way that they cannot be in a position to be directly involved and / or specialise in eye care services. They therefore do no maximally contribute to the prevention of blindness and the rehabilitation of the blind. This further suggest that ophthalmic nursing is not a popular nursing sub-discipline.

The great concern is that deterioration in eye function may end up in total blindness which is often avoidable through preventive and promotive care. At community level, prevention of blindness requires that simple but adequate eye care and guidance on eye health be made available within

the context of primary health care (Thylefors 1991). This vital work can be performed much better by nurses since their training and orientation is towards the community and the patient not just the disease (Perry & Tullo, 1990).

The clinics are the important initial points between the clients with eye problems and the health services. It is therefore significant that nurses working at the clinics be competent and skilled in the prevention of blindness and the rehabilitation of the blind.

The descriptive study was undertaken in KwaZulu-Natal region H. The purpose was to evaluate the professional nurses' performance in the prevention of blindness and rehabilitation of the blind.

The target population was the professional nurses practising in clinics. The sample size consisted of 50 professional nurses.

The approaches used for collecting the information were the observation checklists, questionnaires and patient interviews.

The study proceeded in three phases namely:

(i) the pre-intervention performance phase,
(ii) the intervention phase
(iii) the post-intervention phase

The findings revealed that both ophthalmic trained and non-ophthalmic trained professional nurses who practised in general clinics performed at a "below satisfactory" level. Their extent of performance was also low. The ophthalmic trained and non-ophthalmic trained nurses who practised in eye clinics performed generally at satisfactory level in most activities. However, on community-based nursing activities, the performance of all professional nurses was "below satisfactory".

The post-intervention performance of professional nurses who participated at a workshop was generally satisfactory.

The conclusions drawn from the study were that:

- professional nurses, both ophthalmic and non-ophthalmic trained, who practised in general clinics performed at "below level"

- professional nurses both ophthalmic and non-ophthalmic, trained who practised in eye clinics performed at "satisfactory level" in most activities

- all professional nurses' performance pertaining to community based eye care activities, was "below satisfactory"

- a form of education, or training on eye care improves professional nurses' performance in the prevention of blindness and rehabilitation of the blind.

The recommendations from the study were that;

- ophthalmic trained nurses be allocated in general clinics (at least one ophthalmic qualified nurse per clinic) to work along side with non-ophthalmic trained nurses, and that basic eye care facilities and equipment be made available in general clinics.

- professional nurses working at the clinics including those with DCHAC to receive formal or informal training on eye care. Seminars, workshops, in-service education and short courses on eye care be undertaken to improve eye care services.

- community based services on eye care should be encouraged.

CHAPTER ONE

1.1 STATEMENT OF THE PROBLEM

Humans rely very much on their sense of sight to interact with their environment. So, if anything occurs to decrease or destroy vision, it also alters the efficiency of interaction with the environment. Blindness may therefore, be regarded as one of the most feared disabilities.

According to Rendall (1990), preventative aspects of blindness are side-lined and most welfare staff time is spent on rehabilitation of the blind. Blindness is also considered by some people as an inevitable sign of old age or an outcome of fate that one must accept. However, over the last two decades blindness has come to be regarded as a worldwide condition that is largely preventable or curable (Taylor, Katala, Munoz & Turner, 1991). It must also be pointed out that the incredible role played by vision is never fully appreciated until it is compromised or lost.

The great concern is that deterioration in eye function may end up in total blindness which is often avoidable through preventive and promotive care. Another concern is that despite the fact that blindness is one of the common disabilities in South Africa, eye care is inadequately recognized as an important field of nursing. This is possibly due to the fact that eye disorders are not life-threatening. According to Van der Walt & Lombard (1987), a study on the significance and prevalence of visual impairment in South Africa, conducted by Hadley in 1986, showed that the overall rate of blindness in South Africa

is not lower than 2.37% per 1 000 of the population. He further pointed out that though the information is inadequate, the Black population has a high rate of blindness. Cook, Knight and Crofton-Briggs (1992), conducted a study on **"The prevalence and causes of low vision and blindness in Northern KwaZulu-Natal".** They examined 268 subjects, 241 (90%) were found to have visual impairment. Out of 241 (90%) subjects 61 (25,3%) were blind, 85 (35.3%) had low vision, 61 (25.3%) were blind in one eye. They identified that the prevalence of blindness was 1,0% (95%) confidence interval (0.7-1.2%) and the prevalence of impaired vision was 1.4% (95%) confidence interval 1.1-1.7%.

Cook & Stulting (1995) conducted a study on **"The prevalence, incidence and causes of low vision and blindness in KwaZulu-Natal".** The findings revealed that in a rural population of 5 317 000, the prevalence of blindness was 1.00% (53 170); the estimated annual incidence of cataract blindness was 6 380; and the estimated prevalence of childhood blindness was 0,02% (1 063). The prevalence of low vision was 11,4% (74 438). In an urban population of 3 280 000, the blindness prevalence was estimated as being 0.60% (19 686), and the estimated annual incidence of cataract blindness was 2 362. They identified that the 1991 population figure for Northern KwaZulu-Natal was 81 901 and amongst these people 819 were blind and 322 were blind due to cataracts.

According to Empangeni Eye Clinic statistics for 1995, the following were identified: About 580-700 clients/patients were seen per day. Amongst these patients, about 4 (0.6%-0.7%) were blind, the main causes were cataracts and glaucoma. About 2 (0.3%) had unilateral blindness due to eye injuries such as assault, industrial accidents and home

accidents. Home accidents were reported mainly amongst children. About 1 (0.14-0.2%) reported unilateral blindness due to corneal opacities and were booked for corneal transplant. The information already stated shows that blindness appears to be one of the increasing health problems that require attention.

Although some health professionals may not view blindness as one of the health problems, the researcher perceives it as one of the important health problems. In 1994, the researcher noted five (5) families, (two (2) at Eshowe and three (3) at Empangeni) with five (5) one in each family) blind persons, adults and children, whose blindness was regarded by family members as fate. Some blind people are found at the street corners of every town/city in South Africa begging for money in order to meet their financial needs. This indicates that there are a number of people, especially in rural areas with unreported blindness.

Though according to the Bureau for the Prevention of Blindness, the statistics for blindness for the Black population are inadequate in South Africa, blindness is one of the common problems. This is supported by the fact that various strategies are undertaken in order to fight against blindness. The Bureau for the Prevention of the Blindness, for example, provides preventive and curative eye care services to the rural indigent people of South Africa, more especially to fight against cataract blindness.

A primary health care train which operates throughout the Republic of South Africa as the Phelophepha started in 1993 as the eye care train. The launching of a fully fledged primary health care train was in 1994. This service provides eye care as part of primary

health care. Eye care activities in this service involves screening of patients for eye disorders, refraction and supplying eye spectacles and referring those who need expert treatment. The eye clinic services also include school visits for education and screening performed by nurses and/or ophthalmology students (Transnet-Phelophepha News, 1997).

According to Cook & Stulting (1995), blindness is one of the health problems in KwaZulu-Natal. As a result they suggested principal strategies for the blindness prevention programme for the improvement of facilities. Nurses in general, and ophthalmic nurses in particular, appear to fall short in playing their role in the prevention of blindness. There are only fifty three (53) professional nurses in KwaZulu-Natal who are qualified in ophthalmic nursing (KwaZulu-Natal Department of Health Statistics, 1994). It has been established that even these nurses are practising in such a way that they cannot be in a position to be directly involved and / or specialise in eye care services. They therefore, do not maximally contribute to the prevention of blindness and the rehabilitation of the blind.

It is further concern that eye care, including prevention of blindness, is not seen as a priority but as secondary to physical health. This is supported by the fact that, in South Africa, the Bureau for the Prevention of Blindness is said to be the most important service responsible for the preventive and curative eye care, especially in rural areas (Cook, Knight & Crofton-Briggs, 1992).

Previous studies in this area have focussed on different aspects of eye problems and their consequences. At international level, Henning, Foster, Shresta & Pokherel (1991)

Preventing Blindness in Children in South-East Nepal". The study revealed that Vitamin A Deficiency is a major cause of blindness and loss of vision among children in Nepal. A study conducted by Limburg, Vaidyanath & Dalal (1995) in India, on **"Cost Effectiveness Screening of School Children for Refractive Errors"**, revealed that uncorrected refractive errors (short sightedness and long sightedness) are the main causes of severely impaired vision in India. Waterman, Hope, Beed, Clayton, McQueen, Owen, Stott & Studley (1995), examined the **"Nature of Ophthalmic Services and the Education and Qualifications of Nurses in the United Kingdom".** The study revealed that there are inadequate numbers of nurses holding relevant ophthalmic qualifications in the United Kingdom, and that this situation affected ophthalmic patients since general nurse education does not prepare nurses to care for the wide range of problems that ophthalmic patients present.

In the Republic of South Africa (RSA) ophthalmic nursing, like all nursing sub-disciplines, resides under the control of the South African Nursing Council (SANC). This body (SANC), according to R425 of 1985 is responsible for setting minimum requirements for the nursing education, and provides guidelines for the teaching of students in the programme leading to registration as a nurse (general, psychiatric, community and midwife). This basic nursing programme - because of its limited scope in the subject content of fundamental ophthalmic nursing science as a sub-discipline, does not enable relevant ophthalmology to provide a scientific basis for the cognitive and effective skills required for comprehensive nursing. In institutional or community setting, the patients presenting with a variety of ophthalmic problems may receive inadequate numbers of nurses holding an ophthalmic qualification and this situation may affect the care they

receive. The South African Nursing Council, 1997 statistics on post basic qualifications reveal that there are 455 registered nurses of all races holding an ophthalmic qualification which further suggest that ophthalmic nursing is not a popular nursing sub-discipline.

At the national level, the study conducted by Cook & Stulting (1995) on the **"Prevalence and Incidence of Blindness Due to Age-related Cataract in South Africa"**, revealed that while the cataract is responsible for fifty nine percent (59%) of blindness in South Africa, fifty percent (50%) of the blindness due to cataract is complicated by the presence of other pathology in the same eye or by incurable pathology causing blindness in the other. A study conducted by Rheeder & Sieling (1991) on: **"Acute, Persistent Quinine-induced Blindness (A Case Report)"** in Cape Town, revealed that quinine-induced blindness may occur during the treatment of malaria. Taylor, Katala, Munoz & Turner (1991), conducted a study on: **"Increase in Mortality Associated with Blindness in Rural Africa"**. The study revealed that the higher mortality rate among the visually impaired suggests that, blindness is not only associated with considerable disability but also associated with a shortened life expectancy, especially for women, but the reason was not stated.

In KwaZulu-Natal, Cook, Knight & Crofton-Briggs (1992) conducted a study on: **"The Prevalence and Causes of Low Vision and Blindness: in Northern KwaZulu-Natal".** The study revealed that the aetiology of low vision and blindness is as follows:

Causes of Low Vision and Blindness in KwaZulu-Natal, 1993

AETIOLOGY OF LOW VISION	PERCENTAGE
Age-related cataract	68.2
Myopia (short sightedness)	9.4
Chronic simple glaucoma	4.7
Inherited maculopathy	2.3
Other causes	7.1
More than one cause in each eye	2.3
Absolute glaucoma	2.3
Secondary trauma and age-related cataract	3.5
TOTAL	**100**

AETIOLOGY OF BLINDNESS IN ONE EYE	PERCENTAGE
Age-related cataract	19.7
Traumatic cataract	13.1
Atrophy of the globe due to secondary trauma	8.1
Corneal scarring due to secondary keratitis	8.2
Eye excised due to trauma	6.6
Optic atrophy - secondary trauma	4.9
Atrophy of globe - secondary kerato-uveitis	3.3
Other causes	14.8
More than one cause	4.9
TOTAL	**100**

Zungu (1993) conducted a study on: **"The Life Experiences of Visually Impaired Adults at Empangeni in KwaZulu-Natal"**. The study revealed the following factors as the major problems experienced by the blind:

* restriction of physical mobility;
* social isolation and segregation;
* economic insecurity, and
* inability to identify monies (coins and notes).

In spite of these studies, there is a noticeable absence of research on prevention of blindness and the rehabilitation of the blind, especially in rural areas of South Africa. The present study will attempt to bridge this gap.

1.2 SIGNIFICANCE OF THE STUDY

The study will indicate the role of professional nurses in ordinary clinical settings, to the prevention of blindness and rehabilitation of the blind. It may influence health authorities in KwaZulu-Natal in establishing programmes for nurses and other health care workers in the care of eyes. The study may positively influence capacity building of KwaZulu-Natal professional nurses by creating awareness to the prevention of blindness and the rehabilitation of the blind.

1.3 PURPOSE OF THE STUDY

The purpose of this study was to investigate the performance of professional nurses with regard to the prevention of blindness and the rehabilitation of the blind.

1.4 SPECIFIC AIM

The aim of the study was to establish whether professional nurses are able to provide services which can prevent blindness and promote rehabilitation of blind people. The study addressed the following questions:

QUESTION 1: "Do professional nurses' with ophthalmic care qualifications demonstrate appropriate performance for the prevention of blindness and the rehabilitation of the blind?"

QUESTION 2: "Does the lack of facilities at clinics affect the professional nurses' performance in respect of the prevention of blindness and the rehabilitation of the blind?"

QUESTION 3: "Do professional nurses at the clinics care for or provide curative eye treatments to patients reporting eye disorders?"

QUESTION 4: "Do professional nurses with no ophthalmic care qualifications, but with adequate exposure to ophthalmic care situations, demonstrate satisfactory performance towards the prevention of blindness and the rehabilitation of the blind"?

QUESTION 5: "Is the extent of performance in the prevention of blindness and the rehabilitation of the blind higher in professional nurses working in eye clinics than those working in general clinics?"

QUESTION 6: "Does lack of professional nurses' awareness of their role in the prevention of blindness and in the rehabilitation of the blind affect their performance?"

1.5 ASSUMPTIONS

The following assumptions were proposed:

1. Professional nurses working in situations that lack the necessary facilities for eye care, will demonstrate **"below satisfactory"** performance towards the prevention of blindness and the rehabilitation of the blind.

2. Professional nurses with ophthalmic care qualifications will demonstrate **"satisfactory"** performance towards the prevention of blindness and the rehabilitation of the blind.

3. Professional nurses with ophthalmic care qualifications who do not work in eye clinic settings will demonstrate **"below satisfactory"** performance towards prevention of blindness and the rehabilitation of the blind.

4. Professional nurses with no ophthalmic care qualifications but with adequate exposure to ophthalmic care situations will demonstrate **"satisfactory"** performance in terms of the prevention of blindness and the rehabilitation of the blind.

5. The extent of performance in the prevention of blindness and the rehabilitation of the blind will be higher in professional nurses with relevant exposure to ophthalmic care situations than in those without.

6. Creating awareness for the professional nurses' role in the prevention of blindness and the rehabilitation of the blind will improve their performance in eye care.

1.6 DEFINITION OF TERMS

The following definitions apply to this study:

Blindness

The World Health Organisation defines blindness as: **"vision less than 3/60, that is, inability to see and to count the fingers of a hand at a distance of three (3) metres**

or ten feet (Memorandum from a World Health Organisation (WHO) meeting, 1991:657)". For the purpose of this study, blindness means total loss of vision or absence of usable vision.

Low Vision

Low vision is defined as: **"visual acuity of less than 6/18, but equal to or better than 3/60 in the better eye with best possible correction with spectacles or contact lenses"** (Thylefors, Negrel, Pararajasegaram & Dadzie (1995:116). In this study, low vision refers to poor but usable vision, for an example, the ability to see objects at a distance of three (3) metres.

Visual Impairment

Refers to: **"visual loss that leads to inability to perform some activities that require the use of sight"** (Sussman, 1987:3). For the purpose of this study, visual impairment refers to loss of vision such that the individual must develop alternative techniques for accomplishing those activities that could readily be done with sight. Visual impairment in this study includes but is not limited to legal definitions of blindness.

A Professional Nurse

A professional nurse is any person who is registered with the South African Nursing Council (SANC) as a nurse or a midwife, according to the requirements stipulated in the Nursing Act 50 of 1978 as amended (Nursing Act 50 of 1978). For the purpose of this

study, this registered person should be employed in Region H rural clinics of KwaZulu-Natal. The definition includes professional nurses with or without any additional nursing qualification(s).

An Ophthalmic Nurse

An ophthalmic nurse is any person registered with SANC according to the prescribed requirements of the Nursing Act 50 of 1978 as amended (Nursing Act 50 of 1978), and who in addition, is registered for an additional qualification in Ophthalmological Nursing Science. For the purpose of this study, this person should be employed in Region H rural clinics of KwaZulu-Natal.

Performance

According to the Universal Dictionary (1991:1149) **"performance refers to the act or style of performing work or role."** For the purpose of this study performance refers to execution or carrying out of nursing activities related to the prevention of blindness and the rehabilitation of the blind by the professional nurses working in Region H health services.

Patient

According to the Pocket Oxford English Dictionary (1992:650), a patient is a person accepted by the doctor for treatment. For the purpose of this study a patient is a person

accepted at any clinic of region H for assessment, diagnosis and treatment of any blinding condition or trauma.

Situations

According to the Universal Dictionary (1991:1424) **"a situation refers to a position or *status with regard to conditions* and attendant circumstances."** For the purpose of this study situations are divided into two:

* ophthalmic care situations which are specialised eye clinics with all necessary requirements for the management of eye conditions.

* non-ophthalmic care situations are clinics which do not specialise in eye care and may not have all necessary requirements for the management of eye conditions. They are also known as general clinics.

General Clinics

According to the Universal Dictionary (1991:636) the word general means **"not limited to or dealing with one class of things; diversified or miscellaneous."** For the purpose of this study, general clinics refers to the health care situation that accepts patients presenting with a variety of health problems (including eye problems).

Client

In community health the, client is actually a person at risk or faced with certain health problems or health threats, due to circumstances or conditions under which the individual exist" (Elkins, 1984:165). For the purpose of this study a client is any person in the community of region H who is faced with certain eye problems, or any condition contributing to blindness; or any person who is already blind.

Primary Prevention

Refers to **"prevention of eye diseases/disorders or factors which contribute to eye diseases/ disorders"**(Vlok, 1991:546). In this study primary prevention refers to the prevention of blinding eye diseases/disorders before they occur. It also refers to preventive eye care activities undertaken by professional nurses at the clinics of Region H.

Secondary Prevention

Refers to the **"management or treatment of adiseases or disorders"** (Vlok, 1991:547). In this study secondary prevention refers to the prevention of blindness through assessment, early diagnosis and treatment of eye disorders or injuries. It refers to curative eye care activities undertaken by professional nurses of Region H clinics.

Tertiary Prevention/Rehabilitation

Refers to the **"activities undertaken for the purpose of increasing the quality of life of the blind person as well as his family in order to prevent consequences of disability and to encourage independence"** (Vlok, 1991:549).

Ophthalmic Care Facility

According to Longman Dictionary of Contemporary English (1991:166), **facility means an arrangement or system that makes a particular activity possible.** In this study ophthalmic care facilities refers to a system with basic eye care equipment, eye medications and other pharmaceutical supplies that make aye care nursing activities possible in order to facilitate prevention of blindness and rehabilitation of the blind.

1.7 ORGANISATION OF THE RESEARCH REPORT

Chapter One presents the statement of the problem; significance of the study; purpose of the study; specific aim; definition of terms and organization of the report.

Chapter Two presents a review of literature, that is, books, journals and studies pertaining to blindness and the conceptual framework of this study.

Chapter Three discusses the research methodology that was used.

Chapter Four discusses the analysis of collected data.

Chapter Five reports on findings, conclusions, limitations of findings and recommendations.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 INTRODUCTION

Throughout history, the eye has been viewed as an indispensable sense organ. In the code of Hammurabi, it is documented that the physician, whose treatment caused loss of a person's eye could expect severe punishment in return (Dittmar, 1989). Probably this was so because blindness is one of the most feared disabilities which clearly limits one's ability to function normally (Taylor, Katala, Munoz & Turner, 1991). It is important to define the concept of blindness from the outset.

Normal eye functioning is determined by a visual acuity test. This procedure records the acuteness of central vision for distance, and near or reading vision. The Snellen's test chart is commonly used for testing visual acuity. Visual acuity is expressed as a fraction and abbreviated as VA, the numerator corresponds to the number of metres separating the person from the chart (usually six (6) metres), the denominator corresponds to the number indicating the distance at which the smallest row of letters read by the person should be read by the normal eye. The normal visual acuity is 6/6. Any visual acuity of less than 6/6 is regarded as abnormal (Perry & Tullo, 1990).

2.2 DEFINITION OF BLINDNESS

Various authors have provided various definitions as far as blindness is concerned. Some of these definitions are specific and some are very broad or even vague. Broadly defined, blindness, according to Sussman (1987:3), can be viewed as the "total loss of vision or no usable vision". The more specific definitions include Thylefors, Negrel, Pararajasegaram, and Dadzie's (1995:116), who define blindness as "a visual acuity of less than 3/60 in the better eye with best possible correction with glasses and/or contact lenses". Ellwein and Kupfer (1995:681-682) classify blindness into "unilateral (visual acuity is 6/60 or less in the worst eye), social (visual acuity is 3/60 or less in both eyes - the individual must be guided for walking), and economic (visual acuity is 6/60 or less or more than 3/60 in the better eye) the individual cannot work".

From the above definitions, one can appreciate the many varied definitions of blindness. Hence there is a need for the legal/official (agreed upon) definition of blindness. In South Africa, according to Blind Persons Act 26 of 1968, as amended by the Blind Persons Amendment Act 16 of 1971, the person is legally blind if:

* "visual acuity is so restricted that he is unable to perform work for which sight is essential;

* visual acuity is 3/60 Snellen;

* visual acuity is above 3/60 Snellen, but below 6/60 and field vision is reduced to 50% of the normal field; provided visual defect is not long standing such as in albinism or myopia;

* visual acuity is 6/60 Snellen or better and visual field is contracted to 25% of normal field and the lower part of the field to 50% of the normal" (Vlok, 1996:702).

It can be seen that the vision - the opposite of blindness - is essential to most employment and necessary in countless experiences that make life enjoyable and meaningful. It can also be seen from the observation that blindness is associated with numerous problems which differ in severity from individual to individual.

2.3 CAUSES OF BLINDNESS

Literature reveals that blindness affects people of all age groups with older people forming the majority of the visually disabled population (Kelly, 1993). Blindness appears to increase with age, peaking in the age 50 to 69 years (Newland, Harris, Walland, McKnight, Galabraith, Lwasaki, Momura, 1992). Visual impairment occurs at 61 years of age and above as a result of the normal process of ageing (Vlok, 1996). Defective vision arising from various causes is the most common condition arising in children (Watkinson,, 1989).

Blindness is caused by various factors, which affect people of different age groups. Generally, blindness which is preventable is due to factors such as inadequate nutrition, infections and trauma (Perry & Tullo, 1990).

2.3.1 Common Causes of Visual Impairment/Blindness in Childhood

According to Watkinson (1989) supported by Vlok (1991), the causes of blindness in children can be attributed to:

a) Congenital Factors

Congenital blindness is present at birth or in neonatal period. It may be due to hereditary or intra uterine factors which affect the developing eye. Factors such as rubella, the ingestion of teratogenic drugs, which affect the development of the foetus during the first three months of pregnancy are the common causes of congenital blindness.

b) Acquired Factors

Acquired blindness is commonly caused by trauma and infections. Trauma is caused by poor eye protection. Infection is caused by poor environmental and personal hygiene.

2.3.2 Causes of Blindness Among Adults

Literature reveals that adults are more likely to acquire blindness than children. This is attributed to degenerative processes which occur with age. In addition to normal eye changes, there are a number of visual problems experienced more often by older people which may result in deasese processes (Vlok, 1996). According to Kelly, (1993), the commonest causes of blindness in older persons are:

a) Presbyopia

It is a combination of normal changes such as diminution of pupil size, reduced capacity of accommodation, and reduction in sensitivity of the retina. These all occur with advancing age (Vlok, 1996).

b) Cataract (opacity of the crystalline lens of the eye)

Cataract is considered to be the most prevalent cause of poor vision and blindness among older people in the world (Thylefors, 1991). This is supported by a survey conducted by Cook & Stulting in 1995 on the **"Prevalence and incidence of blindness due to age related cataract in the rural areas of South Africa".** The results showed that in Northern KwaZulu-Natal a blindness prevalence was 1,00% with the cataract being a major cause responsible for 59% of cases. Cook & Stulting (1995) further estimated that for a rural population of approximately 19 million South Africans, there is an untreated backlog of 113 000 cataract blind people and an incidence of 27 000 new cataract-blind

people per year. This indicates that cataract is a major cause of blindness in South Africa, especially for older people.

Although cataract is identified as the leading cause of blindness among older people in the world, it can be removed in a comparatively simple operation (WHO in Action, 1994). A survey conducted by Cook & Stulting in 1995 on the **"Impact of a sight-saver clinic on the prevalence of blindness in Northern KwaZulu-Natal"**, revealed that, cataract extractions for age-related cataracts performed at eight sight-saver clinics in Northern KwaZulu-Natal, reduced blindness due solely to age-related cataract by 25%, from 0, 39% to 0,29%. These findings are supported by WHO in Action (1994) who maintains that blindness prevention programmes emphasizing community awareness and access to cataract surgery should be encouraged.

c) Glaucoma (increased pressure within the eye)

It is stated that progressive increase in intra-ocular pressure is usually related with advancing age. The increase in ocular pressure results in damage to the optic nerve which leads to blindness (Vlok,1996). Although glaucoma can occur at any age, it is considered to be the most prevalent cause of poor vision among older people in the world. A study conducted by Thylefors & Negrel in 1994, on the: **"Global Impact of Glaucoma"** revealed that, globally, primary open angle glaucoma affects about 13,5 million people over the age of 40 years, and that primary angle closure glaucoma accounts for 6 million cases of the total global burden of glaucoma. The study further revealed that 50% cases of primary open angle glaucoma are found in China becuase of its demographic weight

with 28% of the World's over 40 year olds and that 42% of cases were found in Africa south of Sahara, whilst 17% were found in Africa.

A study conducted by Salmon & Mortel (in 1994) in Cape Town on **"The Role of Ethnicity in Primary Angle-closure Glaucoma"**, revealed that primary angle-closure glaucoma was diagnosed in 11 of 63 (17%) whites, 11 of 85 (13%) blacks and 114 of 244 (46,7% coloureds with primary glaucoma. The study highlighted the fact that coloureds are more predisposed to primary angle-closure glaucoma than whites or blacks.

A study conducted by Cook, Knight & Crofton-Briggs on the: **"Prevalence and Causes of Low Vision and Blindness in Northern KwaZulu-Natal"** in 1993, revealed that 26.2% of cases were blind due to primary open glaucoma whilst 3.3% were blind due to secondary glaucoma.

d) **Diabetic Retinopathy (related to diabetes millitus)**

It is secondary to diabetes mellitus and has been estimated to be responsible for up to 10% of cases of blindness in people over 65 years of age. This eye disorder affects the small vessels in the retina, causing them to degenerate (Kelly, 1993).

e) Conditions of the Retina and Cornea

Retinal detachment and senile ocular degeneration are causes of blindness in adults. Keratoconus, corneal scarring and keratomalacia due to Vitamin A deficiency are considered to be other causes of blindness among older people. This is attributed to nutritional problems experienced by some older adults (Watkinson, 1989).

f) Trauma (eye injury)

Trauma is commonly acquired in work situations such as in industries. It may also be attributed to social violence. It is the commonest cause of unilateral blindness in South Africa (Vlok, 1996).

2.3.3 Acquired Blindness of all Age Groups

Blindness can be acquired from a variety of causes affecting people of all age groups. Apart from trauma, drugs such as quinine administered during the treatment of malaria may lead to persistent blindness. For example, a case study conducted by Rheeder & Sieling (1991) revealed that there is a correlation between serum levels and quinine-induced blindness.

In Africa harmful traditional practices in the treatment of eye diseases, cause blindness, especially in developing countries (Klauss & Adala, 1994). Harmful practices may include the application of kerosene, petrol and hot metal probe to ocular surfaces and soft

structures. The substances, particularly those with a high PH or those containing particulate foreign matter are potentially blinding. Among the materials implicated in Africa are sea water, contaminated water, extracts of the roots, bark and leaves of trees, herbs, vegetables, powdered charcoal, human urine and saliva, excreta of cattle and lizards, kerosene and petrol. The substances may cause corneal ulceration, perforation of the eyeball, suppurative keratitis followed by endophthalmitis and eventually blindness.

2.4 CONSEQUENCES OF BLINDNESS

Literature reveals that blindness like any disability has a negative impact on the individual's psycho-social, physical and economical well-being.

2.4.1 Impact on Psycho-social Well-being

It is generally maintained that blindness causes the individual to be uncertain about the future. Uncertainty about the future leads to social isolation of the individual which is a great problem for any disabled person. This can easily produce more problems than the original condition. Social isolation can lead to family problems related to caring for the blind family member, and disruption of family functioning by altering relationships between people (Long & Phipps, 1989).

Negative attitudes of community members towards the blind is an obstacle on effective coping. Blind people feel that they are viewed by some community members as objects to be kept indoors or institutionalised, and not seen moving around and amongst sighted

persons. This attitude is mostly displayed when blind persons have to take transport when visiting any health service for illness. This attitude is viewed as a problem which hinders effective integration of the blind to the community leading to social isolation and eventually ineffective coping and adjustment to blindness (Zungu, 1993).

2.4.2 Loss of Independence

The loss of independent mobility and concomitant isolation is both a result of stress of blindness and a cause of further depression. Blind persons cannot move about quickly, as securely or as easily as sighted persons. They need to rely on other persons, particularly in unfamiliar surroundings. This leads to dependence (Zungu, 1993).

Loss of mobility and orientation further affects communication with others. Ineffective communication also results from the fact that blind people are unaware of gestures or other visual cues to non-verbally communicated messages. They may be prone to misinterpret what is said or may appear slow to respond appropriately, as they are possibly unaware of who is addressing them. Not only are blind people restricted in non-verbal communication, but are also limited in the ways they can process information (Long & Phipps, 1989).

2.4.3 Economic Dependency

Familiar hobbies that require vision such as reading, sewing or crafts may no longer be possible. Decreased ability to read and communicate in conventional ways can lead to

decreased opportunities for learning experiences and may alter established careers for blind adults. Career options, job opportunities and financial security are likely to be adversely affected. The blind person may feel socially insecure and inadequate and eventually become dependent (Phipps, Long & Woods, 1987). It is clear that blindness may lead to family poverty and or destructive change in the social and economic status of the family as a whole. For example, the economic effects resulting from blindness are not limited to the individual. This is supported by a study conducted by Zungu in 1993, on **"The Life Experiences of Visually Impaired Adults in KwaZulu"**. The findings revealed that unemployment and financial insecurity was viewed by most respondents as a major problem resulting from blindness, especially for males. The disability grant was viewed as inadequate by most blind persons who had to support their families and educate their children. According to Taylor, et.al (1991), blindness is associated with a marked loss of economic dependence and social standing together with marginalization of the blind person in family decision-making.

Newly blind people experience a problem of inability to identify monies (coins and notes). Most blind people are cheated by some sighted people. This problem continues until the sense of touch is fully developed, thus enabling the blind to identify monies (Zungu, 1993).

An increase in the incidence of blindness in society will necessitate the establishment of rehabilitation centres for the blind such as schools for the blind, mobility training centres,

sheltered employment and others. The rehabilitation centres require human, financial and other material resources for effective functioning (Goodwill & Chamberlain, 1990; Vlok, 1996). It is therefore essential that blindness be prevented (Thylefors, 1991).

2.4.4 Mortality

Literature reveals that blindness may be associated with mortality. Taylor, Katala, Munoz & Turner (1991), conducted a study on **"An Increase in Mortality Associated with Blindness in Rural Africa"**. The findings confirmed that individuals over the age of 40, who are visually impaired or blind (visual acuity of 6/60 or less in each eye) had 3.33 time risk of dying compared to their normally sighted peers, but the actual causes of death could not be established. Blindness as a disability with various consequences to the individual, family and society, requires prevention (Long & Phipps, 1989).

2.5 PREVENTION OF BLINDNESS

Prevention of blindness involves primary, secondary and tertiary preventive measures. For each level of prevention, health education is utilised as an important tool. These levels are discussed below.

2.5.1 Primary Prevention

At primary level, blindness is prevented before occurrence. In the case of blindness, this entails prevention of eye diseases/disorders before they occur. This may include health promotion and specific protection.

Since blindness is considered to be mainly found in rural communities, where economic development tends to be relatively poor, health promotion focuses on aspects that affect the individual's health. These aspects include personal and environmental hygiene, to prevent eye infections such as trachoma; adequate nutrition to fight against preventable childhood blindness caused by Vitamin A deficiency, marasmus, kwashiokor, and protein-energy malnutrition; vaccination of infants against measles to prevent childhood blindness and mortality; maternal health to prevent infections such as viral infections that might be transmitted by the pregnant mother to the unborn foetus resulting in blindness and eye safety practices to prevent eye injuries (Vlok, 1996).

It is maintained that health promotion should utilise health education of the population in order to improve the most important component of eye care which is self-care. Self-care involves maintenance of high standards of personal and environmental hygiene. The public is educated to provide enough facilities to wash faces and clothes (particularly management in industry) to improve personal hygiene. Young mothers and school children are taught basic rules of hygiene. Safe water supply for the community is

ensured. This is achieved by organising community projects such as pipe water supply projects. Community leaders are involved from the initiation of the projects (Thylefors, 1991).

The environmental hygiene is improved by motivating the community to have safe sanitation. There should be adequate number of toilets and effective system of removal and disposal of household refuse. This may be achieved by initiating community projects such as toilet building projects through community participation and involvement as well as reconstruction and development projects. This aids in controlling vectors such as flies, especially black flies which breed in water (such as in West African rivers) which causes river blindness (onchocerciasis) (Vlok, 1996). The World Health Organization (WHO) maintains that the spraying of the vector black flies breeding in West African rivers has almost succeeded in eliminating the infection reservoir from the human population (WHO in Action, 1994). Good environmental hygiene eliminates common eye blinding infections such as trachoma which is caused by poor personal and environmental hygiene (Perry & Tullo, 1990).

Health promotion also focuses on adequate nutrition. The community is motivated to adopt new nutritional habits (Thylefors, 1991) The community is encouraged to cultivate and eat the correct food such as yellow vegetables like pumpkin and carrots; green leafy vegetables such as spinach; coloured fruits like mangoes and papayas and tomatoes to prevent blindness due to Vitamin A deficiency. Animal foods such as liver, dairy produce and eggs are included in the diet. The mentioned food sources will aid in prevention of Vitamin A Deficiency blindness such as xerophthalmia and night blindness (Schwab,

1987). In order to prevent malnutrition which lowers body resistance mothers of at a risk children are encouraged to breast feed. This will aid in the prevention of blinding conditions which affect the cornea such as measles, conjunctivitis and nutrition corneal ulceration (Perry & Tullo, 1990).

In developing countries where children are at high risk of Vitamin A deficiency blindness (xerophthalmia), supplies of high-potency Vitamin A capsule/oil are made available at all levels of the community health delivery system (Vlok, 1996; WHO News and Activities, 1992). In KwaZulu-Natal supplies of Vitamin A capsules are made available at the clinics for children at risk.

In South Africa, pregnant mothers are given eye health education and advised not to take any unprescribed drugs as they may affect the cells of the developing foetus resulting in congenital blindness (such as congenital cataracts. Health professionals are advised not to give pregnant mothers drugs of known or doubtful teratogenicity during the first three months of pregnancy. Viral infections such as rubella are avoided during this period as they affect the cells of the developing foetus resulting in blindness. Widespread rubella inoculation campaigns which include school girls from twelve years are conducted. This assists in preventing congenital blinding conditions such as congenital cataracts, congenital glaucoma, congenital absence of the eye and others (Vlok, 1996).

Health education in child health clinics, maternity clinics, schools and community meetings are undertaken to emphasize the importance of immunising children against

measles which complicates into blindness especially in malnourished children (Perry & Tullo, 1990; Schwab, 1987). This activity is also undertaken in KwaZulu-Natal Region H by conducting immunisation campaigns.

In preventing blindness due to ocular traumas, public awareness about dangerous situations in daily life and explanation of how to protect the eyes is undertaken. Prevention of home, roads and industrial accidents is emphasised through health education. Facial and ocular injuries in the event of collision, not looking directly at solar eclipse, using safety goggles while hammering metal or grinding metal in machine shops is emphasized. Prevention of road and industrial accidents also require enforced regulation on the use of seat-belts, maintenance of industrial safety and control of manufacture of fire arms (Schwab, 1987; Thylefors, 1991).

Blindness is prevented by protecting the eyes of at risk hospitalised patients such as unconscious patients, premature babies and newborn infants. All midwives, nursery attendants, nurses and doctors are taught proper use of antiseptics such as chloramphenicol eye drops instilled into the swabbed eyes of infants immediately after birth in order to prevent blindness from ophthalmia neonatorum (Perry & Tullo, 1990; Vlok, 1996). The WHO states that ophthalmic neonatorum should be prevented by using timely eye prophylaxis, which is 1% silver nitrate or 1% tetracyclines eye ointment. It is pointed out that the Crede method with silver nitrate provides prophylaxis against Neisseria gonorrhea but not against Chlamydia trachomatous. The suggestion arising from this controversy is that the syndromic approach of preventing ophthalmia neonatorum be followed, whereby both antibiotics (1% silver nitrate and 1% tetracyclines)

should be instilled prophylactically (Van Bogaert, 1997).

Premature infants are given oxygen therapy when it is desperately needed. The ambient oxygen concentration administered to premature infants is never higher than 50%. This will prevent blindness due to retrolental fibroplasia (Vlok, 1996).

It is believed that for some patients quinine toxicity may cause blindness following treatment of malaria. A study conducted by Rheeder & Sieling (1991) on **"Quinine induced blindness"**, in Cape Town, revealed that out of 165 patients with acute ophthalmic quinine toxicity, 19 had persistent visual defects. It was concluded that there is a correlation between high serum levels and quinine induced blindness, and that nurses and medical practitioners should observe and report signs and symptoms of quinine toxicity (disturbed colour perception, photophobia, diplopia, night blindness, scotoma and mydriasis). Presence of these signs and symptoms necessitate discontinuation of the drug immediately. The medical practitioner may prescribe pyrimethamine 75mg plus sulphadoxine 1 500mg to be administered to patients showing signs of quinine toxicity for the treatment of malaria (such as Northern KwaZulu-Natal).

In order to reduce the incidence of quinine induced toxicity, the environmental hygiene practices such as eradicating mosquito breeding sites, spraying houses and using insect repellents is emphasized by nurses on people living in endemic malaria areas. In order to prevent blindness due to heredity, genetic counselling is undertaken. This is important for parents and children with familial blindness or poor sightedness, especially where children are in schools for the blind or partially sighted children. Genetic counselling enables blind

for parents and children with familial blindness or poor sightedness, especially where children are in schools for the blind or partially sighted children. Genetic counselling enables blind young people to make informed decisions as to whether or not they should marry each other and/or have children (Vlok, 1996).

According to Cook, Knight & Crofton-Briggs (1993), a good eye service, such as a full-time surgery service and a training programme for ophthalmic nurses exists in Gazankulu in the Northern Province of South Africa. Ophthalmic nurses' role in the primary prevention of trachoma is by giving health education on raising the standards of personal environmental hygiene, and to convince the community that trachoma is not caused by evil spirits but by poor personal and environmental hygiene. The community is also encouraged to look after itself under the supervision of the clinic ophthalmic nurses (Vlok, 1996). This suggests that it is possible that ophthalmic nurses in KwaZulu-Natal Region H performs their role in the prevention of blindness relevant to the causes of blindness in the area.

In Swaziland, the prevention of blindness is undertaken by a Prevention of Blindness Committee, whose aim is to prevent blindness caused by cataract, trauma, glaucoma, corneal diseases, uveitis and degenerative eye disorders. Ophthalmic nurses working in an eye clinic department, and in a Mobile Unit of this programme are responsible for giving preventive and promotive health care lectures to the community, and to assess and refer patients who require expert surgery to hospital (Swaziland International News, 1990).

2.5.2 Secondary Prevention

Secondary prevention refers to the management or treatment of an eye disease when the person is already ill. This is achieved through early diagnoses, treatment and prevention of disease progress and prevention of complications. It involves clinical activities for the curing of eye diseases (Thylefors, 1991). It is however, pointed out that success in blindness prevention depends to a large extent on the availability and distribution of resources (human and material) needed for prevention of blindness. It is further highlighted that the resources will facilitate the effectiveness of clinical activities for the curing of eye diseases (Perry & Tullo, 1990; Thylefors, 1991).

In secondary prevention of blindness, screening and diagnosis of eye disorders are successfully undertaken in hospital out-patients and various clinics. Screening is undertaken in the community by conducting school visits for screening school children for refractive errors, screening adults from forty (40) years of age for glaucoma and cataracts. Adults with glaucoma and/or cataracts are referred to ophthalmologists for expert advice and treatment. During school visits, school teachers are educated on how to identify and refer school children with refractive errors, jointly with the parents (Murray, 1991). This is supported by a study on **"Cost-effective Screening of School Children for Refractive Errors"**, in India, conducted by Limburg, Vaidyanathan and Dalal in 1995, which revealed that teachers were used successfully in the screening of children for refractive errors after being trained and given eye health education. In the Republic of South Africa the screening, diagnosis and referral of patients with eye problems is undertaken by the Bureau for the Prevention of Blindness as well as the "Phelophepha Health Train"

programme (Transnet-Phelophepa News, 1997).

Early detection, diagnosis and treatment of blinding diseases also depends on the knowledge, competence and skills of health professionals on eye care, hence the emphasis on prevention of blindness is on human resource development on eye health (WHO News and Activities, 1992). Not only are the health personnel expected to be knowledgeable about eye health, community members must also be educated about signs and symptoms of eye disorders and the importance of seeking medical advice and prompt treatment (Thylefors, 1991).

In order to facilitate a reduction in the prevalence of blindness caused by chronic glaucoma in Northern KwaZulu-Natal, ophthalmic nurses for the area have been trained. They are responsible for facilitating and co-ordinating glaucoma case finding in the clinics, as well as follow-up and supervising patients on medical treatment, with referral to the sight-saver clinic for glaucoma surgery, if indicated (Report on eye care services from Bethesda Hospital, 1996).

In the Northern Province, care groups participate in the prevention of blindness caused by trachoma. The care groups undertake community based eye care by visiting the homes of the people for case finding. The mothers of infected families are supplied with tubes of antibiotic ointment such as chloramphenicol or tetracycline and taught how to use it. Care group workers keep records of patients and undertake follow-up care. The people affected and their families are further given health education on the principles of good environmental and personal hygiene and nutrition. Health professionals (including

opthalmic qualified nurses) are responsible for the constant supervision of care group workers (Vlok, 1996).

Blinding conditions such as glaucoma cannot be cured but the disease progress is prevented by prescribing eye medication for the patient. Many older patients attending ophthalmic out patient clinics have eye drops prescribed for long term use to treat glaucoma. The nurses' role in identifying and supporting patients receiving treatment for glaucoma is therefore of significance if the incidence of blindness due to glaucoma is to be reduced (Cook, & Stilting, 1995).

The study on **"Improving Compliance with Glaucoma Eye-drop Treatment"**, conducted by Cooper, in 1996 in Britain, revealed that non-compliance with chronic simple glaucoma eye-drop treatment was caused by lack of patient education. The recommendations from the study were that nurses must support the patients. It was further recommended that nurses need to standardise patient education to avoid giving patients conflicting ideas. The patient education is to be reinforced. It was also suggested that links between the hospital out-patient department and the primary eye care team should be developed to facilitate follow-up care.

Patients suffering from general conditions such as diabetes mellitus have their vision tested and are referred to ophthalmologists for expert assessment and treatment. If the presence of retinopathy is identified, an ophthalmologist may prevent disease progress by performing phototherapy (Vlok, 1996). It is therefore, the nurse's role to test visual acuity for all patients reporting diabetes mellitus at the clinics. The importance of follow-

up care is also emphasized to the patients (Thylefors, 1991).

Since cataracts constitute the greatest eye problem in the Republic of South Africa, Approximately 16 000 people in rural areas could have their sight restored annually if eye care services were adequate. It is further stated that the Bureau for the Prevention of Blindness is responsible for the curative eye services in rural communities in South Africa, where no eye care services are available. It organises tours to respective rural communities, where it performs screening, diagnosis and treatment as well as referral activities for patients presenting with eye problems. The main curative eye service provided by the Bureau for Prevention of Blindness is the performance of cataract surgery (Cook & Stulting, 1995). The nurse's role is early identification and referral of patients with cataracts for surgery, and also to educate the community on the success of cataract surgery (Vlok, 1996).

Although the Bureau for the Prevention of Blindness performs most cataract surgery to the rural communities of South Africa, among a rural population of approximately nineteen (19) million South Africans, there is a backlog of 113 000 unoperated cataract-blind people, hence a need to train general physicians on lens extraction exists (Cook & Stulting, 1995; Murray, 1991). In Northern KwaZulu-Natal the presence of corneal scarring in the same eye precludes the possibility of curing blindness by simple cataract surgery performed at a sight-saver clinic by the Bureau for the Prevention of Blindness. This necessitate referral of a patient to a distant hospital. This is often unacceptable or impractical for elderly, rural, indigent patients. Another problem that has been experienced by patients after cataract surgery, is that after being issued with aphakic

(glasses used for patients who have had lens extraction) later, it is reported that they are either lost or broken. The Bureau has formulated a policy for curing aphakia (absence of the lens) which emphasizes that intra-ocular lenses be offered instead of aphakic glasses

(Cook & Stulting, 1995). The nurse's responsibility is to educate the older adults who have had lens extraction, as well as their family members on the care of eye spectacles and the value of intra ocular lenses (Vlok, 1996).

It is further stated that in KwaZulu-Natal rural areas, especially in Northern KwaZulu-Natal, a considerable resistance to medical intervention among elderly people in communities with low literacy level exists. It is therefore, suggested that marketing of success in cataract surgery as preventing blindness due to cataracts should be undertaken by all health professionals (Cook, Knight & Crofton-Briggs, 1993).

2.5.3 Tertiary Prevention

Tertiary prevention, which is also known as rehabilitation, aims at returning the visually disabled person to his community, and ensuring that his remaining capacities are fully utilised and that further deterioration is prevented. It is also aimed at minimizing the consequences of disability (Dittmar, 1989).

Rehabilitation is defined by Dewar (1990:63) as, **"the continuing and comprehensive team effort to restore an individual to his former functional and environmental status or alternatively to maintain and maximise remaining function."** As a

component of comprehensive health care, it applies the fundamental concepts of preventive and promotive health (Dittmar, 1989). The preventive and promotive concepts viewed within the rehabilitation context, aims at preventing the complications and consequences of disability as well as promoting the health status and self-concept of the disabled individual (Goodwill & Chamberlain, 1990).

Blind persons react to the loss of sight, and their reactions depend very much on whether blindness occurred early in life or at an age that allows the individual to remember what it was to be sighted, those who became blind early in life, do not "miss" sight (Hollins, 1989). Reactions to visual loss is based on the personal meaning of the events surrounding visual loss (Allen, 1989). Allen (1989) undertook a study on twenty five (25) persons who had become visually impaired adults. The study revealed that the first stage of reaction to blindness has three separate phases which are impact, implications of loss and reactions to the loss. The study also revealed that the common reactions to the onset of blindness are shock, disbelief, anger, depression and fear. Fear was shown to be experienced by blind persons on going out alone, learning new skills, getting involved in new situations and uncertainty about their ability to cope with blindness and the future. It is therefore, important to help resolve the emotional problems of the blind person first, before the practical problems of blindness can be tackled (Perry & Tullo, 1990).

a) Counselling

Counselling is the first step in the rehabilitation of the blind person and his intimate family circle. During the process of counselling the blind person and his family are informed

about blindness and available rehabilitation services in the community. Psychological support is given to the blind person and his family by health professionals. Parents of a newly blind child experience frustration since they are inadequately equipped to handle crisis arising from the presence of the blind child. Parent support groups are vital to help the entire family to cope with the impact of the child's blindness (Adams, 1990). The nurse is the first contact person to give special care and support to the blind and his family to help them adjust to blindness (Kirton & Richardson, 1987).

Counselling must be tactful, truthful and quite straight forward. It must give the maximum message of hope that the patient warrants. It should facilitate the early recognition of potential problems of the individuals so that they are prevented (Kemp, 1985).

In KwaZulu-Natal, the Natal Society for the Blind has a Resource Centre manned by trained professional staff who assists the visually impaired people to adjust to their blindness and to develop confidence in orientation, mobility and daily living skills (Berry, 1991). Most Africans are unaware of the available counselling services. This may be attributated to the fact that most services are located in metropolotican areas, and therefore inaccessible to most Africans in rural communities. This results in adequate utilisation of counselling services by most needy Africans (McKendrick & Leketi, 1990). Unfortunately, nurses are not fully involved in the rehabilitation activities as they are still unaware of their role in rehabilitation (Dewar, 1990). The nurse can have a major contribution in counselling blind persons who are trying to cope with everyday living. She can be of an assistance to the affected family by bringing their attention to the facilities

available in the community for helping the blind person (Vlok, 1996).

b) Mobility and Daily Living Skills

Successful counselling of the blind person and his family facilitates the rehabilitation process by motivating a blind person to be ready to re-learn other skills such as mobility and daily living skills as well as communication skills (Berry, 1991).

Mobility and daily living skills training is done at home, with family members functioning as a support system of the blind person. The nurses encourage friends and relatives to allow the blind person to develop at his/her own rate. They must not hastily step in and do things for him/her, since this will make it harder in the long term for him/her to regain independence (Zungu, 1993). The parents of a blind child must be involved in the rehabilitation process and the planning of the child's future. They must be enlightened about the limitations which they impose on their child by over-protecting him or failing to discipline him when necessary (Adams, 1990).

Those supporting the blind person during mobility training, should consider that, the blind person has special powers, in that the other senses are heightened. The blind people also foster this belief as a way of coping with the disability. The congenitally or early blind persons tend to develop an acute sense of hearing and touch, (which are acquired through practice), whilst the person is learning to be mobile and carrying out activities of daily living (Hollins, 1989).

Some blind persons may not be motivated to acquire mobility skills on their own. Sometimes the self-acquired mobility and daily living skills may be inadequate to allow the blind person to function independently. This necessitate referral of the blind person to the available mobility and activities of daily living skills training services (Hollins, 1989).

2.6 CONCLUSION

Prevention of blindness is viewed as one of the major problems in developing countries, especially because health services are mostly used for treatment rather than for prevention of disease (Perry & Tullo, 1990). This may be true in KwaZulu-Natal since there is an increase incidence of blindness caused by preventable and treatable eye diseases (Cook, Knight & Crofton-Briggs).

Preventive eye care should be done by nurses because so much of the nurse's training and orientation is towards the community and the patient and not just the disease. In order to prevent blindness in rural communities, principles of primary health care should be applied. Multidisciplinary as well as primary health care principles of intersectoral collaboration should be emphasised at all levels of prevention of blindness (Dennil, King, Lock & Swanepoel, 1995).

It must be emphasised that some major causes of world blindness are preventable. Prevention of blindness although often neglected, is even more important in developing countries. Educating children about eye care, teaching adults first aid for eye injuries, and campaigning for better health for preventable conditions such as eye injuries, infections

and malnutrition would aid in blindness prevention (Rendall, 1990). The nurses's role is to create community awareness on the prevention of blindness through health education (Thylefors, 1991).

2.6.1 Conceptual Framework

a) Introduction

The World Health Organisation (WHO) concept of primary health care maintains that health care should be planned to relate to resources available. It views primary health care as the most important part of a comprehensive health care system. It also recognises that the public should participate both individually and collectively in the planning, implementation and evaluation of health care (Dennil, King, Lock, & Swanepoel, 1995).

The primary health care approach is centred on the individual, the family and the community. The support received by the people for treating and preventing disease, and protecting, maintaining and improving their health is integrated across health and health related sectors. These include housing, water, sanitation, agriculture, education, social welfare, environment, trade and commerce. Within the health system, the services provide the principal and most direct support to the community. Community services need to be strengthened if health care services are to be accessible to the needy (Bettie, Gott & Jones, 1990).

The study was influenced by the primary health care approach. Principles, namely: equitable distribution of resources, community participation, appropriate technology, multi-sectoral approach, preventive and promotive health care approach guided the study. This approach is community based. Nurses give health education to the community about good environmental and personal hygiene, adequate nutrition, importance of eye care and about success in surgical treatment (Schwab, 1987).

2.6.2 Application of Primary Health Care Approach to the Study

The primary health care approach is relevant to this study since primary health care principles are applicable. The following primary health care principles as applied to the study will be discussed:

* equitable distribution of resources
* community participation
* multi-sectoral approach
* appropriate technology; and
* preventive and promotive health care approach.

2.6.3 Equitable Distribution of Resources

Equitable distribution of resources means that health care and social services are equally distributed, accessible, affordable and available to all people. The services must also do what they were intended to do for the specific community (Dennil, King, Lock &

Swanepoel, 1995). For this study resources referred to are human resources (professional nurses) employed in KwaZulu-Natal Health Services, as they have a major role in the prevention of blindness and rehabilitation of the blind.

All professional nurses possess basic knowledge on eye care acquired during basic nursing education which equips them with basic nursing skills of preventing blindness. Some of the professional nurses have an additional ophthalmic nursing qualification which creates awareness of their role in the prevention of blindness and rehabilitation of the blind. The equitable distribution of resources therefore, refers to the equal distribution and access of the community members in need of eye care, to ophthalmic trained nurses. For the purpose of this study, equitable distribution of resources will refer to the equal distribution and accessibility of professional nurses with an additional qualification in ophthalmic nursing to all people who require eye care expertise. Equitable distribution of resources also refers to equal distribution of basic material resources (basic eye care requirements and transport facilities) needed for eye care at the clinics.

2.6.4 Community Participation

Community participation in health care refers to the mechanism in which the community is acknowledged as a partner in the process of achieving optimal health for all. According to Dennil, King, Lock & Swanepoel, (1995:20) community participation is:

> "self-help, meaning the patient is actively involved in health care; it is demedicalisation, meaning professional care is substituted by lay care, that is, Community Health Workers; it is democratisation, meaning consumers are involved in social policy decision regarding health care."

For the purpose of this study, community participation refers to active participation by the individual, family and community in matters concerning eye care. The professional nurses are viewed as people responsible for encouraging and motivating the community members to take prevention of blindness activity as part of their responsibility. They are viewed as important health professionals for educating the community leaders, older adults, school children and citizens in the importance of eye care. Professional nurses are viewed as primary health care team leaders responsible for giving support, guidance and encouragement to the clients, patients and their families with respect to the prevention of blindness and the rehabilitation of the blind (Thylefors, 1991). The responsibility of professional nurses is to motivate the community to be self-reliant and self-sufficient in matters related to the prevention of blindness and the rehabilitation of the blind (Vlok, 1996).

2.6.5 Appropriate Technology

Primary health care emphasises that the methods and materials used in the system should be socially acceptable and relevant. It is further pointed out that the services should focus on the major health problems of the population and must be affordable and should employ technologies that are locally appropriate and acceptable (Dennil, King, Lock & Swanepoel, 1995). In this study professional nurses are viewed as human resources

rendering eye care services to the community. They are seen as health professionals who focus their activities on common blinding eye disease. The technology is viewed as the professional nurse's knowledge, skills and appropriate use of available basic eye care material resources in the prevention of blindness at all levels. They are able to practice rehabilitation skills that are appropriate to the blind person such as techniques of daily living, communication skills, and independent mobility (Vlok, 1996).

Mobility training services are inadequate in rural communities. Africans in rural communities make very little use of mobility training services located in metropolitan areas. The Natal Blind Society which trains the blind persons of all races on mobility and daily living skills in Durban is unaccessible to most Africans living in rural communities of KwaZulu-Natal (Murray, 1991). Professional nurses are some of the health professionals involved in developing the skills of the blind and should create community awareness of the rehabilitation services available for the blind (Perry & Tullo, 1990).

2.6.6 Health Promotive and Preventive Approach

Preventive and promotive services, rather than curative services, should be a central focus of health care. Such an approach sees health as a positive attribute. Prevention and promotion are the approaches to many of the health problems (Green, 1994). In this study preventive and promotive eye care is regarded as an important nursing approach to combating blindness. A preventive and promotive approach is viewed as being applicable at all levels of prevention of blindness (primary prevention, secondary prevention and tertiary prevention/rehabilitation). For example, primary prevention involves ensuring

adequate nutrition directed towards prevention of blindness caused by inadequate nutrition, whilst immunisation of children against measles is the specific prevention of blindness caused by measles. Professional nurses are viewed as health professionals adequately educated and possessing necessary skills for implementing a preventive and promotive health care approach (Dennil , Lock & Swanepoel).

Secondary prevention of blindness involves early detection and treating the already existing eye conditions such as glaucoma treatment and cataract surgery as well as supplying eye spectacles for patients with low vision in order to prevent total loss of eye sight (Perry & Tullo, 1990).

Tertiary prevention of blindness involves the education of the blind to be relatively independent in some activities such as daily living and mobility. It requires adequate training of the blind person in the substitutive use of the other special senses especially touch, is essential. The nurse's role in tertiary prevention of blindness is that of counselling, supporting, guiding and encouraging the blind person and his family towards successful rehabilitation (Vlok, 1996).

2.7 SUMMARY

When analysing the literature review, blindness is a world wide problem, especially in developing countries. Literature indicates that most blindness (such nutritional blindness and blindness caused by infection) is preventable (Perry & Tullo).

Blindness is a feared disability but its prevention is neglected mostly in underdeveloped countries where health services are inaccessible. Nurses have a vital role in the prevention of blindness such as giving health education to the clients, patients and community on eye care, screening clients or patients at risk of developing blindness (such as children and adults from 40 years of age and above) and by encouraging the community to adopt heathy life styles . Literature indicates that for effective blindness prevention, eye care should form part of primary health care. It is also emphasised that primary eye care is essential in developing countries (Thylefors, 1991). KwaZulu-Natal is no exeption as literate indicates that the major causes of blindness in this area are cataracts, glaucoma and eye injuries.

CHAPTER THREE

3 METHODOLOGY

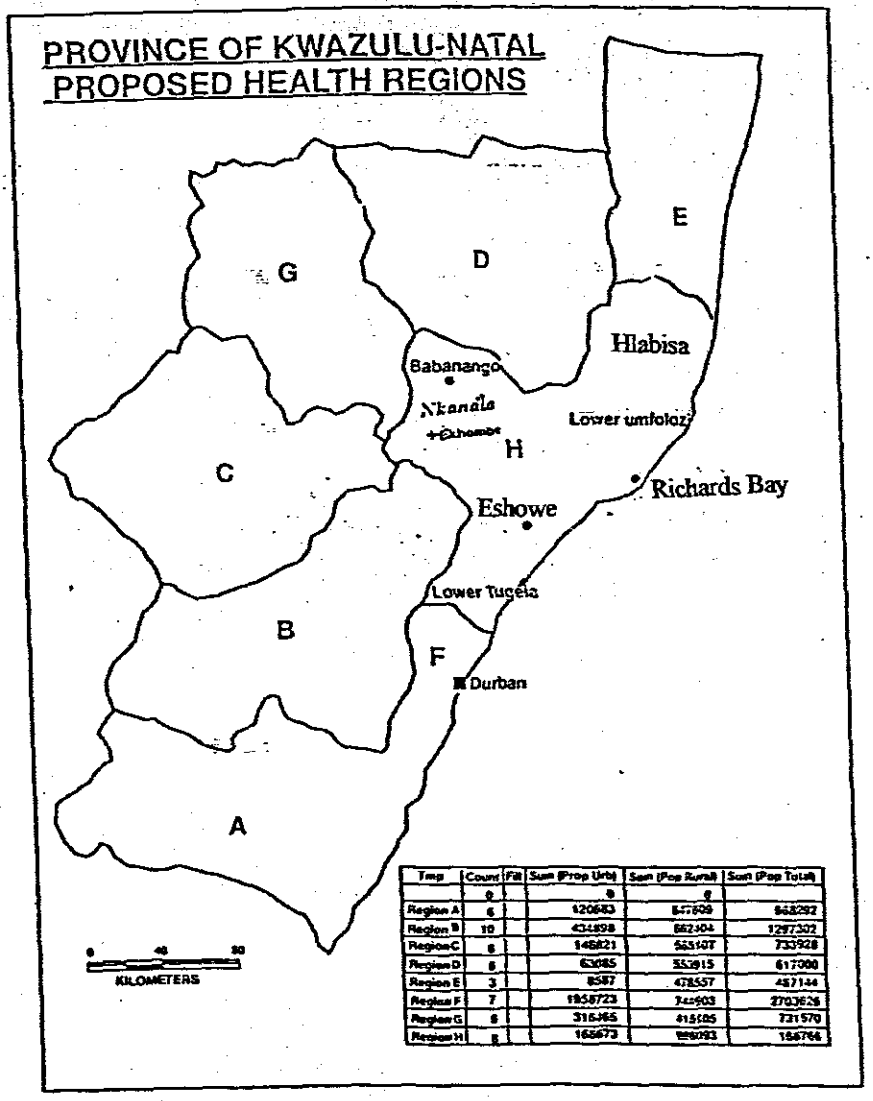
3.1 INTRODUCTION

In this chapter, the purpose, aim of the study and the methods of investigation are presented. The chapter also discusses the target population, research design and instruments of data collection.

3.2 PURPOSE OF THE STUDY

The study was aimed at assessing professional nurses' performance in the prevention of blindness and the rehabilitation of the blind in region H of Kwa-Zulu Natal and to give relevant intervention where lack of skills was demonstrated.

3.3 DELIMITATION OF THE AREA OF STUDY



Tmp	Count	Fld	Sum (Prop Urb)	Sum (Prop Rural)	Sum (Prop Total)
	0		0	0	
Region A	6		120683	547609	668292
Region B	10		434898	862404	1297302
Region C	8		146821	565107	733928
Region D	8		63085	553915	617000
Region E	3		8587	478557	487144
Region F	7		1958723	744903	2703626
Region G	8		316365	415205	731570
Region H	8		165673	999093	164766

Figure 1 reflects the KwaZulu-Natal eight (8) regions.

This study was limited to Region H for the following reasons:

1. Geographically, this region is predominantly rural. Its population according to KwaZulu-Natal department of health Statistics (1994) is about 90% rural.

2. Due to financial constraints and for economic reasons, it was necessary for the researcher to confine the study to Region H in which target institutions and personnel were more accessible.

3. Administratively, all the health regions are centrally controlled and governed through the same policies. An in-depth discussion of the Region H setting is covered under the topic "Sampling Design".

3.4 TARGET POPULATION

The target population was the professional nurses employed in Region H of KwaZulu-Natal. Professional nurses with or without an ophthalmic care qualification working in clincis were selected for the study because they form the initial contact point between the clients with eye problems and the health services in the region. The clients/ patients with eye problems referred by the professional nurses from Region H clinics to an eye clinic were also included in the study because they are the consumers of the health service able to give relevant information on nursing actions performed by professional nurses prior to referral.

3.5 SAMPLING FRAME

Sampling involved selection of clinics, professional nurses and patients.

3.5.1 Selection of Clinics

Rural clinics from region H were selected for the study from the following hospitals: Ngwelezane, Mbongolwane, Empangeni, Eshowe, Catherine Booth, Nkandla, Ekhombe and Hlabisa. These hospitals were conveniently accessible and all were included in the study. Two hospitals had one clinic each. Each of the other six (6) hospitals had more than one clinic. The total number of clinics for the eight (8) hospitals was fifty (50). Since it was not feasible to include fifty (50) clinics in the study, a sample of twenty percent.(20%) was decided on as recommended by Polit & Hungler (1987). A sample of ten clinics was undertaken. Two (2) clinics from the two (2) hospitals with one clinic each, were automatically included in the study. Random sampling was undertaken from a list of forty-eight (48) clinics from the six (6) remaining hospitals. Each clinic was assigned a number on a slip, until forty-eight (48) slips were made. These were all placed in a box. The selection was done by picking one slip at a time. The number of the picked clinic was recorded and replaced in the box. This technique was executed until six (6) clinics were selected. This made up a total of eight (8) clinics (one for each hospital). Since a total of ten (10) clinics was needed, two clinics were conveniently chosen from a list of forty-two (42) clinics. The following reflects rural clinics in Region H as at August 1997:

Table 1 shows the number of rural clinics in Region H

HOSPITAL	NUMBER OF CLINICS
Catherine Booth Hospital	5
Ekhombe Hospital	5
Empangeni Hospital	1
Eshowe Hospital	1
Hlabisa Hospital	11
Mbongolwana Hospital	5
Nkandla Hospital	5
Ngwelezana Hospital	17
TOTAL	**50 Clinics**

During data collection, one hospital had clinics with the actual number of working professional nurses ranging between two (2) to six (6). It was therefore not feasible to get a sample of five (5) professional nurses from one clinic. One clinic for the same hospital was conveniently chosen so that the professional nurses for the two (2) clinics total ten (10). Eventually eleven (11) clinics were selected for the study.

3.5.2 Selection of Professional Nurses

The next step was to select a sample of professional nurses from a target population of two hundred and fifty-one (251) professional nurses working at the clinics. Twenty percent (20%) of the target population (of 251 professional nurses) was decided on as recommended by (Polit & Hunger 1987). A total number of fifty (50) professional nurses constituted a sample size. A duty roster with names of professional nurses on each clinic was used to select the sample. Five professional nurses from each clinic were randomly

selected. This process was only possible for nine (9) clinics. The tenth (10th) clinic had only four actual working professional nurses. One additional clinic (of the same hospital) with six (6) working professional nurses was conveniently selected. Five (5) professional nurses were then randomly selected from a total of ten (10) professional nurses from the two (2) clinics.

Since each of the nine (9) clinics selected had a maximum of ten (10) actual working professional nurses, numbers one to ten were written on pieces of paper. The first five professional nurses holding pieces of papers with even numbers were selected for the study. The same random selection procedure was performed for the ten (10) professional nurses from two (2) clinics with few numbers of actual working professional nurses. Eventually, a total of 50 professional nurses were selected for the study.

3.5.3 Selection of Patients' Sample

Since the patient is the key person in the evaluation of the health services, an incidental sample of ten (10) patients with eye problems referred to the clinic by any of the 50 participating professional nurses, on condition that each of these patients was referred by a different participant, were selected into the study. Ten (10) clinics out of eleven (11) were selected by excluding the referral eye clinic from participating in the patients' interviews. The patients were then selected from nine (9) general clinics and one (1)eye clinic. In order to get ten (10) patients, one patient from seven (7) clinics which had five (5) participants each and then one (1) each from the clinics which had three (3) and two (2) participants respectively, and the 10th patient was a referral from a smaller eye clinic.

Ten patients referred to the eye clinic at Empangeni Hospital were therefore interviewed over a period of two weeks. The reason why only ten (10) patients were interviewed was because the researcher intended sampling patients referred by professional nurse participants (one per nurse and per clinic). A larger sample would have required more time than the researcher had available. It was assumed that ten (10) patients would enable the researcher to compare patients' experiences regarding the professional nurses at the clinics with actual performance of the nurses on the prevention of blindness and the rehabilitation of the blind.

3.6 PREPARATION FOR THE STUDY

In preparation for the study a research proposal was submitted to the University of Zululand Faculty of Arts research Committee, from which permission to conduct the study was obtained. To gain access to the health services for the purpose of evaluating the professional nurses, an application was submitted to the Director of Health Services in Region H of the KwaZulu-Natal health region (Appendix H). Further permission was sought from the Directors of Nursing Services of the eight hospitals to which the clinics belonged. This was done telephonically, making it easier for the researcher to describe the purpose of the study as well as answer questions. At the same time the Directors of Nursing Services were informed by the Director of Health Services to the effect that permission had been granted.

The appointment to meet with each Director of Nursing Services was finalised by the researcher. During a visit to each hospital, each Director of Nursing Services introduced

the researcher to the Chief professional nurse supervising the clinic. A further discussion on the purpose of the research occurred. A permission letter from the Regional Director as well as a copy of the research proposal were submitted to each Director of Nursing Services. Each Director of Nursing Services submitted these copies to the Medical Superintendent of the Hospital. Permission was then jointly granted by the Director of Nursing Services and the Medical Superintendent of each hospital. This was done in writing by some hospitals (see Appendix H) and verbally by others. After obtaining permission for the study the researcher visited each clinic where the study would be conducted. This was aimed at further introducing the study to the professional nurses at each of these clinics and for the researcher to familiarize herself with the staff. The chief professional nurse at each hospital accompanied the researcher to those clinics under her supervision. This facilitated and yielded an acceptance of the researcher's presence by professional nurses at each clinic since she was introduced to all of them by their supervisor.

3.7 PREPARATION FOR COLLECTING DATA AT THE CLINICS

In order to obtain the necessary information, clinics sampled were visited. This was done in order to obtain information regarding weekly programmes for each clinic so as to enable planning of visits to each clinic.

3.7.1 Research assistants

To facilitate the process of data collection two professional nurses with Masters' degrees and working as lecturers were deployed as research assistants. The assistants were briefed

by the researcher on the contents of the observation checklist and the questionnaire, aims of each instrument and administration thereof. They were allowed to observe the researcher collecting data during pretesting of instruments, and were involved in the process of correcting the research tools.

The process of data collection proceeded in three phases (the pre-intervention phase, the intervention phase and the post-intervention phase) The instruments used for data collection (observation checklist, questionnaire and patients' interviews) demanded the presence of the researcher. Without the help of the research assistants, the process of data collection would have taken a longer period than the researcher had at her disposal.

3.7.2 Research Design

According to Talbot (1995) the goal of descriptive research is to describe the phenomena. It is frequently used when very little is known about a topic or to initially explore a research question. For, this study, the researcher assumed that very little is known about the performance of professional nurses working at the clinics in respect of the prevention of blindness and the rehabilitation of the blind. It was therefore advantageous to undertake a descriptive study which utilized both quantitative and qualitative methods of data collection (observation, questionnaire and patients' interviews).

3.8 DATA COLLECTION INSTRUMENTS

Three types of instruments, namely; the observation checklist, a questionnaire and an interview guide were used to collect data. The instruments were developed by the researcher in consultation with several experts in various areas of nursing care, including two nurse educators in nursing colleges offering a diploma in ophthalmological nursing course, two ophthalmic qualified nurses working in eye care settings, two ophthalmologists and two general medical practitioners.

3.8.1 Observation checklist

The observation technique was of value in this study since professional nurses' performance in the prevention of blindness and the rehabilitation of the blind is an activity that can be observed. The purpose was to determine the professional nurses' performance in the real situation. Since the observation consisted of different activities to be observed from each professional nurse with respect to the prevention of blindness and the rehabilitation of the blind, the technique proved advantageous to the researcher. It permitted the researcher maximal use of time in that observations could be discontinued when there was nothing more to observe.

The approach used by the researcher was that of being a non-participant observer, that is, not being part of the professional nurses working at the clinics. The observation checklist items were formulated on the basis of the performance skills being investigated.

3.8.2 Questionnaire

For this study, the purpose of the questionnaire was to identify the theoretical knowledge on blindness and the rehabilitation of the blind possessed by the professional nurses in the clinical practice. The questionnaire was advantageous in this study since it allowed the researcher to assess a wide variety of skills which otherwise would have taken much longer to do if another technique was used.

An eighteen (18) page questionnaire was formulated. Aspects to be investigated were taken into consideration. A literature survey was conducted. The questionnaire was discussed with research experts throughout all stages of its development. The questionnaire was divided into six (6) sections as follows:

SECTION A: Demographic data

SECTION B: Ability of professional nurses to identify risk factors that cause blindness.

SECTION C: Ability of professional nurses to perform nursing skills with respect to the prevention of blindness and rehabilitation of the blind. This section was mainly on health education and advice given to patients / clients at all levels of prevention.

SECTION D: Ability of professional nurses to perform eye assessment skills.

SECTION E: Ability of professional nurses to perform specific nursing care measures to patients / clients with specific eye problems.

SECTION F: Information on the extent to which professional nurses are able to perform nursing activities related to the prevention of blindness and the rehabilitation of the blind.

This section of the questionnaire tested the extent of the professional nurses' performance in the prevention of blindness and the rehabilitation of the blind at primary, secondary and tertiary level. Ten (10) indicators were identified. These indicators consisted of basic eye care activities expected of the professional nurses at primary and secondary levels of care (Appendix B). Using the frequency scale, each participant indicated the extent to which he or she performed each of the listed activities. The meaning of each level of the scale was left to each individual participant to interpret using the following:

Frequency scale

1 = "Not at all"

2 = "minimally"

3 = "Reasonably"

4 = "Considerably"

5 = "A great deal"

In allocating the score, each indicator was considered individually and the findings presented in graphic form with "Y" axis showing group performance in percentage, and the numerals on the "X" axis representing the individual indicators. The ten indicators were numbered as follows:

Primary level indicators

1. Conducting in-service education to health care workers;
2. Education of the community on daily general eye care;
3. Education of school children on prevention of eye accidents;

Secondary level indicators

4. Screening of school children for refractive errors;
5. Prescribing eye medication for common eye disorders;
6. Assessment of patients with diabetes mellitus for visual acuity;
7. Testing of visual acuity for all patients reporting general ill-health;

Tertiary level indicators

8. Home / community follow-up care for patients with glaucoma;
9. Rendering psychological support services to the blind and their families;
10. Counselling patients beleaguered by progressive visual loss.

3.8.3 Patients' Interviews

The researcher prepared an unstructured interview guide that enabled patients to state all facts on the nursing care they received with respect to the prevention of blindness and the rehabilitation of the blind. The interview guide included the following:

1. The patient's age;
2. The patient's eye problem;
3. The name of the clinic from which the patient was referred;
4. Nursing intervention expected from the professional nurses before referral of the patient and the management of the specific eye problem. This expectation included:-

    * history taking
    * eye tests / examination (visual acuity test and eye inspection)
    * prescribing eye medication
    * advice and health education given in relation to the presented eye problem
    * referral procedure

The unstructured interview enabled the researcher to obtain information which could not be readily procured with the exclusive use of either the checklist or interview or even the combination of both.

3.9 RELIABILITY AND VALIDITY

Reliability and validity of the instruments was performed in order to test for the absence of errors of measurement. To test for reliability and a vilidity, a pre-test was conducted on five (5) professional nurses working at the general clinics and five (5) patients at an eye clinic referred by professional nurses who participated during pre-testing. The aim was to test the validity and reliability of the data collection instruments (observation checklist, questionnaire and patients' interviews). The results obtained revealed some problems such as those relating to the length of the questionnaire, difficult questions, confusing information that requires different answers. The observation checklist revealed some items that gave the same information such that ambiguous items were excluded. The tools were modified in consultation with research experts and specialists in ophthalmology. The reason for the involvement of the latter is that according to the researcher a "jury opinion is better than that of a single individual" (Gumbi, 1987:48). As for the interview guide, no problems were discovered.

3.10 ETHICAL CONSIDERATIONS

Permission to conduct a research study was obtained from the Regional Director and relevant authorities in charge of hospitals and clinics (Appendix H). Participants' consent was obtained from the professional nurses and from patients who were interviewed. Anonymity and confidentiality were ensured by omitting the participants' names from questionnaires, checklists and interviews. On data collection, coding was done for questionnaires and observation checklists.

From an ethical point of view, from which all possible violations were obviated, there was a need for strict anonymity of the clinic from where the patient was, and the professional nurse who attended the patient yet these were neither possible nor guaranteed as far as the researcher and the patient went. This was due to the fact that the patients to be interviewed were those from clinics selected for the study, and were attended by professional nurses who also participated in the study.

3.11 DATA COLLECTION

For data collection a pre-test was undertaken first, followed by the main study.

3.11.1 Pre-test

In order to test the validity of the instrument a pre-test was conducted. Pre-testing was also used to afford the assistants the opportunity to observe the researcher using the observation checklist and a questionnaire. Data was collected using three different approaches, namely, an observation checklist, a questionnaire and patients' interviews. Pre-testing was conducted on five (5) patients referred by each of these professional nurse participants to the eye clinic. The observation checklist, together with the questionnaire, were used to obtain the information from the professional nurses while the interviews were conducted with patients to obtain their views on the care they receive from professional nurses at the clinics.. For both procedures each professional nurse was attended to individually in her own clinic. The three (3) professional nurses each had a diploma in nursing and two had a degrees in nursing science (B Cur).

3.11.2 Observation Checklist

Non-participant observations were done by the researcher using the observation checklist. The aim was to evaluate the professional nurses' performance in the prevention of blindness and the rehabilitation of the blind in clinic settings. These activities included aspects of health education, assessment skills, counselling and management care relevant to patients who presented with eye conditions as well as high risk patients. Each participant nurse was observed during consultation with at least four (4) patients, one at a time. This approach was necessitated by the need to assess the professional nurses' skills in dealing with at least four of the five groups of care provided for in the checklist, namely, paediatric care, pregnancy care, diabetic care, care for the hypertensive patient and eye care.

In the event of the patient being attended not falling into the category, the researcher abstained. Since variety of eye conditions seen at the general clinics is a chance occurrence, the researcher was required to make more than one visit to the same clinic for the same professional nurse.

The observation was conducted in a cubicle where the consultation was taking place with the researcher standing or sitting at a comfortable distance away from the nurse and the patient. A check mark was made in the appropriate column of the checklist every time the expected behaviour was observed. Although participants were fully aware that their performance was being evaluated, they did not know which aspects of their performance were being observed.

3.11.3 Questionnaire

The questionnaire was administered by the researcher to each of the five (5) professional nurse participants following the completion of the observation procedure. Each participant was requested to indicate the most convenient time during which she could be able to complete the questionnaire. The researcher clarified the instructions on the questionnaire to each participant emphasizing the importance of anonymity.

In order to ensure independent responses, the questionnaire was completed in the presence of the researcher. The questionnaire took 30 to 60 minutes to complete after which participants were requested to comment on the quality of the questionnaire. All comments were recorded by the researcher during the discussions.

Although the participants acknowledged that the content was relevant, they however pointed out that some questions were open to many answers, while others were difficult to understand. The questionnaire was also found to be too long. These comments led to the correction and restructuring of the questionnaire by eliminating ambiguity as well as complexity. The questionnaire was retested on five (5) professional nurses prior to implementation.

3.11.4 Patients' Interviews

The aim of the patients' interviews was to obtain facts from the patients on the care they received from the participating professional nurses. Five patients referred to the eye clinic

by five professional nurse participants were identified. These patients were identified whilst awaiting consultation by the researcher checking the clinic card and enquiring about the clinic they were referred from. A patient who responded with the name of the participating clinic was directed by the researcher to the consultation room. After introducing herself, the researcher enquired about the name of the professional nurse who had referred the patient. Patients were directed to the consulting room in order to ensure the anonymity of the professional nurse, and the confidentiality of the information. If the given name was not amongst those of the five professional nurses, the patient was duly thanked and referred back to the waiting queue. However, if the given name was amongst those of the five participating professional nurses, the patient's consent for the interview was sought.

To make sure that none of the participant professional nurses was excluded from the patients' interviews, five interview guides were assigned a code number based on the clinic and the identity of the professional nurse. For example, the five clinics were assigned the letters A, B, C, D & E and five professional nurses were assigned numerals 1, 2, 3, 4 & 5 respectively. Therefore if Vector Clinic was assigned "A" and professional nurse Mncwabe from Vector Clinic was allotted the number "1", a code reading A1 would be used to identify professional nurse Mncwabe and Vector Clinic. A confidential list with the names of the participants and the code numbers was kept. Coding was also a measure to exclude patients that could have been from the participating clinic but referred by a professional nurse other than the participant.

To facilitate the process of data collection two professional nurses possessing Masters' degree acted as research assistants. The assistants were briefed by the researcher on the contents of the observation checklist and the questionnaire, aims of each instrument and the administration thereof. They were allowed to observe the researcher collecting data during pre-testing of instruments and were involved in the process of correcting the research tools.

3.12.1 Pre-intervention Phase

a) Observation Checklist

Observations were done using the observation checklist. This procedure included the assessment of the professional nurse as well as the availability of basic ophthalmic equipment at each clinic under study. A total of fifty professional nurses working at eleven clinics, that is nine general clinics and two eye clinics were evaluated. Each of the research assistants was allocated three clinics with five (5) participants, while the researcher attended to five (5) clinics, three (3) of which had five (5) participants and the remaining two (2) having three (3) and two (2) participants respectively.

In order to identify each participants' performance and to provide anonymity a coding system different from that used during pre-testing was developed in the following manner: the first alphabetic letter in the name of each hospital to which the clinic belonged was noted. This was followed by the first alphabet in the name of the clinic. Then, each professional nurse was assigned a numerical figure according to the sequence in which the

clinics were arranged in the sample list. For example, in the case of the five (5) participants working at Dlamini Community Clinic, which is under the control of Gwabini Hospital, the five (5) participants would be given the codes DG1, DG2, DG3, DG4 and DG5 respectively. To limit errors of misidentification, the numerical numbers were not repeated in coding for the next clinic, for example, the first name on the second clinic was coded with the two alphabets and the number six (6). In the case of the five participants working at the second clinic named Hlanzeni Community Clinic which is under the control of Khoza Hospital, the five participants would be given the Codes HK6, HK7, HK8, HK9 and HK10 respectively. This means that the last participant on the sample list above the code with two alphabets, the number would be fifty (50).

The observations were conducted in a similar manner as in pre-testing, the aim being to evaluate the professional nurses' performance in the prevention of blindness and the rehabilitation of the blind. Observations on each professional nurse participant were conducted in a cubicle where the consultation was taking place. The observer (research assistant or researcher) kept a comfortable distance away from the nurse and the patient so as not to cause a disturbance. As there were five participants to be observed in the same locality, the observer was able to leave one participant for another in the event of the patient not falling in the relevant category for observation. Since the types of conditions of interest found in the general clinics occurred by chance, each observer was required to make more than one visit to the same clinic for each of the five participants. However, because of the availability of relevant conditions at the eye clinics only one visit was made to each clinic for observations on all five participants.

Each participant nurse was observed during consultation with at least four patients, one patient at a time. This approach was necessary in order to allow for assessment of the professional nurse dealing with at least four of the groups of care provided for in the checklist thereby establishing reliability of the assessment made. A check mark was made in the appropriate column of the checklist every time the expected behaviour was observed. As in pre-testing the participants were fully aware that their performance was being evaluated but they did not know which aspects of this performance was being observed.

To assess the status of the clinic the availability of basic eye care requirements and policies, standing orders, and guidelines for the management of patients who presented with complicated eye injuries were observed. This was done once at each clinic preceeding the evaluation of the first participant and was not repeated during subsequent observations. This was because no deviations in patterns occured at these clinics during the stay of the research assistants and the researcher.

b) Questionnaire

The questionnaire was administered by research assistants or the researcher to the same professional nurse participants to whom they conducted observations. This was done after all observations were completed. Participants in each of the eleven (11) clinics were requested to indicate the time that was most convenient to them during which they could

be able to complete the questionnaires in a group setting. The instructions on the questionnaires were clarified to each group of participants, emphasising the importance of anonymity.

In order ensure independent responses, the questionnaires were completed in the presence of a research assistant or of the researcher. The questionnaires took 30-60 minutes to complete with each participant being allowed to take as long as he\she needed.

In order to identify each participant's questionnaire for the purpose of determining who did or who did not need intervention, each participant was identified by means of the same code as was used on the observation checklist.

c) Patients' Interviews

The aim of patients' interviews was to obtain facts from the patients on the care they received from clinic professional nurses. Ten (10) patients each referred by any ten (10) of the 50 participating professional nurses, on condition that each of these patients were referred by a different participant were interviewed. The patients' interviews were conducted immediately after administration of questionnaires.

Ten (10) clinics out of eleven (11) were selected by excluding the referral clinic from participating in patients' interviews. This was because the professional nurses from this clinic demonstrated good performance and also that this clinic is a referral clinic for all patients with eye problems. There were then nine (9) general clinics and one (1) eye clinic

selected for patients' interviews. In order to get ten (10) patients, one patient from seven (7) clinics which had five (5) participants each and then one (1) each from the two clinics which had three (3) and two (2 participants respectively, and the 10th patient was a referral from a smaller eye clinic. Ten (10) patients referred from ten (10) clinics by one participant from each clinic give a wider representation for all participating clinics and professional nurses, and therefore it was not necessary to interview fifty (50) patients referred by all fifty (50) participants. Ten (10) patients instead of fifty (50) were therefore, identified.

The patients were identified while waiting consultation by the researcher checking the clinic cards and enquiring about the clinic they were referred from. Similar to the pre-testing, a patient who responded with the name of the participating clinic was directed by the researcher. Here the researcher introduced her\him and enquired about the name of the professional nurse who had referred the patient.

If the given name was not amongst those of the fifty (50) participating professional nurses, the patient was thanked and referred back to the waiting line. However, if the given name was amongst those of the fifty (50) participating professional nurses, the patient's consent to the interviews was sought.

To make sure that ten (10) participating professional nurses (one from each of the ten (10) clinics were included in the patients' interviews, fifty (50) interview guides were assigned a code number similar to that of the observation checklists and questionnaires. Coding was

also a measure to exclude patients that could have been from a participating clinic but referred by a professional nurse other than the participant. A confidential list with the names of the participants and their code numbers was kept.

Similar to a pretest, interviews were conducted in Zulu, and the responses were immediately interpreted into English by the researcher. Using the unstructured interview each patient was requested to state clearly the assessment (such as history taking and eye test), as well as other activities performed by a professional nurse who referred him/ her to the eye clinic. The interview for each patient lasted for 15 minutes.

Due to the fact that patients referred to the eye clinic reported at the times convenient to them and that ten (10) patients referred by any of the fifty (50) participating professional nurses were interviewed, the researcher's visits for patients' interviews took place over a period of two weeks.

3.12.2 Intervention Phase

The intervention phase in the form of a workshop education took place six weeks after the evaluative pre-intervention phase. The aim was to improve the performance of professional nurses whose level of performance with regard to the prevention of blindness and the rehabilitation of the blind was rated as being below satisfactory. To determine the level of performance the total number of points scored in the observation checklist and the questionnaire were in each case converted into percentages. A performance of less than 50% on either the observation checklist or the questionnaire or on both was identified as

requiring intervention. Based on this criterion a total of forty-five professional nurses, one ophthalmic trained, and all working in general clinics were found eligible for intervention. However, only twenty participants presented themselves for this purpose.

a) Preparation for the Workshop

The researcher identified areas in which the professional nurse participants demonstrated poor performance as well as the clinics at which those professional nurses worked. A list on these aspects was compiled. The areas on which professional nurses demonstrated poor performance were: assessment skills, giving health education to patients, knowledge of risk factors for blindness, management of patients presenting with high risk conditions (such as eye injuries, premature infants and glaucoma) and knowledge on the rehabilitation of the blind patients.

The researcher along with the research assistants participated in the preparation of the material and conduction of the workshop. Material for presentation was prepared on transparencies using the information from ophthalmic nursing books. The guide prepared for scoring the questionnaire was also used to generate further content (Appendix D). Two (2) professional nurses who are registered ophthalmic nurses assisted with the preparation and management of the workshop. The workshop was therefore conducted by the researcher, the two research assistants and two ophthalmic trained professional nurses.

Out of 45 professional nurses who demonstrated poor performance, only 20 from four (4) clinics attended the workshop. Since eight (8) out of eleven (11) clinics had no visual acuity charts, these were ordered by the researcher from the Bureau for the Prevention of Blindness Information Centre to be supplied to these eight (8) clinics.

The main venue for the workshop was telephonically arranged by the researcher and the Director of Nursing Services of Eshowe Hospital, and permission was granted for the workshop to be run at this hospital for three (3) days. The dates and the time were also discussed and agreed upon. The Director of Nursing Services of Eshowe hospital was requested to convey the information to the Directors of Nursing Services of other hospitals at a regional meeting. The researcher further telephoned the Director of Nursing Services of each hospital requesting permission for the participants to attend.

b) The Workshop on Eye Care

The workshop was conducted along participatory and discussion approach principles. Participants were divided into four groups of five nurses each with a facilitator assigned to each group. Each group was assigned a venue separate from the others.

Having introduced themselves to each other and to the facilitators, the participants were asked to list in writing their expectations from the workshop exercise. This was done on the first day of the programme. The input on expectations was categorised and transferred on to the transparencies. Among others, the participants' expectations included acquisition of knowledge pertaining to the assessment of patients with eye problems, health education

for patients with eye problems, management of eye injuries and the role of the nurse in the prevention of blindness (Appendix F). These expectations were in line with areas of weakness identified in the pre-intervention phase.

Working through these groups, participants were taught how to use a visual acuity chart. Actual testing of visual acuity was demonstrated to the participants who then took turns to demonstrate the procedure back to their groups. Questions focussing on the prevention of blindness, including health education provided to pregnant mothers, were posed to individual groups to stimulate discussions. Under the guidance of the facilitator groups worked out principles of management and care which were later presented to the larger group by the leader of each small group. During presentations aspects of importance were put on transparencies for further discussion by the researcher and other facilitators.

3.12.3 Post-intervention Phase

The post-intervention evaluation was undertaken on twenty (20) participants from four (4) clinics who had attended the workshop. This evaluation was aimed at assessing whether or not the intervention had the desired effect on the performance of the participants. To achieve this aim, the observation checklist, and the questionnaire and patients' interviews used during the pre-intervention phase were used. Use of the same evaluation instruments was necessary to ensure consistency of the evaluation procedure.

a) Observation checklist

Observations were undertaken two weeks following the intervention phase. This interim period was intended to allow participants more time to re-inforce their awareness of the skills taught and an opportunity to put these skills into practice before the next evaluation phase. As in the pre-intervention phase, the observation of participants was done first. The same observation procedure followed during the pre-intervention phase was followed during this phase. The change that occurred during this phase was section A of the observation checklist (that is, availability of basic eye care requirements), on assessment, reflected the availability of the visual acuity charts that were provided by the researcher. The scoring procedure was similar to that of the pre-intervention phase.

b) Questionnaire

The questionnaire was administered by the research assistants or by the reseracher to the same professional nurse participants who participated in previous observations. This was done after 3 weeks subsequent to the completion of observations. The delay in the administration of the questionnaire was an effort on the part of the researcher to reduce the possibility of responses based on simple recall by the participants. Participants in each of the four (4) clinics were requested to indicate the time most suitable to them during which they could be able to complete the questionnaires in a group setting. Instructions on the questionnaires were clarified to each group emphasizing the importance of anonymity.

In order to ensure independent responses, the questionnaires were completed in the presence of the research assistants or the researcher. As in the pre-intervention phase each participant was allowed to take as long as she needed to complete the questionnaire. The scoring procedure was similar to that of the pre-intervention phase.

c) Patients' Interviews

Since more time was needed to evaluate the impact of the workshop on nurses performance as viewed by patients, the interviews were conducted three months subsequent to the completion of workshops on eye care. Twenty (20) patients each referred by any of the twenty participating professional nurses, on condition that each of these patients were referred by a different participant from any of the four (4) clinics. As in the pre-intervention phase, the patients were identified while waiting consultation by the researcher checking the clinic cards. A patient who responded with the name of the participating clinic was directed by the researcher. Here the researcher introduced herself and enquired about the name of the professional nurse who had referred the patient.

If the given name was not amongst those of the twenty (20) participating professional nurses, the patient was thanked and referred back to the waiting line. However, if the given name was amongst those of the twenty (20) participating professional nurses, the patients' consent was sought.

To make sure that the twenty (20) professional nurses were included in the patients' interviews, twenty (20) interview guides were assigned on a code number similar to that of the observation checklist and questionnaire.

Similar to the pre-intervention phase, the interviews were conducted in Zulu and the responses were immediately interpreted into English by the researcher. The unstructured interview guide similar to that of the pre-intervention phase was used. The interview of each patient lasted for fifteen (15) minutes.

3.13 PRE-TEST

The pre-test was conducted on five (5) professional nurses. Table 1 shows the qualifications of professional nurses.

3.13.1 CHARACTERISTICS OF THE PRE-TEST SAMPLE

Table 1: Qualifications of professional nurses N=5

BASIC QUALIFICATIONS	FREQUENCY
Diploma in nursing	3
Degree in nursing (B. Cur)	2
Total	5

Table 1 reflects that three (3) professional nurses had a diploma in nursing and two (2) had a degree in nursing (B. Cur).

Table 2: Professional nurses work experience N=5

EXPERIENCE IN YEARS	FREQUENCY
1 - 5 years	2
6 - 10 years	1
11 - 15 years	1
16 years and above	1
TOTAL	5

Table 2 reveals that professional nurses had a varied experience. Two (2) professional nurses had an experience of one to five years, whilst three (3) had an experience of six years and above.

3.13.2 RESULTS ON PROFESSIONAL NURSES' PERFORMANCE BASED ON PATIENTS' INTERVIEWED

TABLE 3: Performance of professional nurses N=5

RESPONDENTS NUMBER			PERFORMANCE		
	A	Interpretation	B	Interpretation	C
	% Score		% Score		
1.	43	0	36	0	Required
2.	32	0	40	0	Required
3.	45	0	48	0	Required
4.	26	0	18	0	Required
5.	24	0	42	0	Required

KEY: A = Checklist Outcome
B = Questionnaire
C = Intervention
2 = "Above satisfactory" performance: 70% and above
1 = "Satisfactory" performance: 50% - 69%
0 = "Below satisfactory": 0%
% Score = Percentage of points scored by a professional nurse from A and B

Table 3 indicates that all professional nurses who participated during pre-testing performed at a "below satisfactory" level in the prevention of blindness and the rehabilitation of the blind. The results indicated that even these professional nurses with high qualifications and several years of experience lacked skills in the prevention of blindness and the rehabilitation of the blind.

3.13.3 RESULTS OF THE INTERVIEW FROM FIVE (5) PATIENTS AT AN EYE CLINIC REFERRED BY FIVE (5) PROFESSIONAL NURSES

Table 4: Eye Problems of Patients Interviewed N=5

RESPONDENTS NUMBER	AGES IN YEARS	SEX	PROBLEM
1	26	Female	Foreign body sensation in right eye
2	40	Male	Painful red eye (right eye)
3	15	Female	Progressive visual loss
4	22	Male	Blurred vision
5	46	Male	Failure to read letters or block print

Table 4 reflects eye problems stated by respondents on interview. The researcher further requested each patient to state clearly the assessment (history taking, eye test), as well as nursing activity by a professional nurse who referred him/ her to the eye clinic. The response was as reflected in table 5 as follows:

Table 5: Responses from patients N=5

RESPONDENTS NUMBER	RESPONDENTS PROBLEM	ASSESSMENT BY PROFESSIONAL NURSE	NURSING ACTION UNDERTAKEN
1	Foreign body Sensation	Nil	Referral
2	Painful red eye	History	Medication given with no effect
3	Progressive visual Loss	Nil	Referral
4	Blurred vision	Nil	Referral
5	Failure to read	Nil	Referral

Table 5 reflects that one (1) patient out of five (5) had ophthalmic history taken whilst three (3) had no history taken. Four (4) out of five (5) stated that they were referred for expert treatment. One patient stated that he was given medication which had no effect. None of the patients stated that visual acuity testing and eye examination was performed. The findings suggested that the care given by professional nurses to patients reporting eye problems is lacking.

CHAPTER FOUR

4. DATA ANALYSIS, FINDINGS AND RECOMMENDATIONS

4.1 INTRODUCTION

This chapter deals with the analysis of data, the findings and interpretation thereof. Data consisting of recordings from the observational checklist, questionnaire responses and patients' interview responses were scored using different approaches. To allow for comparison, pre-intervention and post-intervention data were scored separately.

4.2 MAIN STUDY RESULTS

Characteristics of the Sample

Participants' characteristics were obtained from the demographic data.

Table 6: Sex Distribution N=50

SEX	FREQUENCY
Male	1
Female	49
TOTAL	50

Table 6 indicates that 49 participants consisted of females.

Table 7: Professional Nurses' Academic Qualifications N=50

QUALIFICATIONS	FREQUENCY
Diploma in nursing	44
Degree in nursing (B. Cur)	6
TOTAL	**50**

Table 7 shows that 44 participants possessed a Diploma in nursing (Basic nursing with general nursing, midwifery, psychiatry and community health nursing science qualifications). Six (6) had a degree in nursing (B. Cur).

The post basic qualifications possessed by professional nurses were also sought as they might influence their performance in the prevention of blindness and rehabilitation of the blind.

Table 8: Post Basic Qualifications of Participants N=50

POST BASIC QUALIFICATION	FREQUENCY
ADMNC	2
DOPHTH	3
DCHAC	5
NONE	40
TOTAL	**50**

KEY FOR QUALIFICATIONS

ADMNC = Advanced Diploma in Midwifery and Neonatal Nursing Science

DOPHTH = Diploma in Ophthalmological Nursing Science

DCHAC = Diploma in Clinical Nursing Science, Health Assessment, Treatment and Care

Table 8 reflects few professional nurses with Post Basic qualifications working in clinics. Only five (5) were in possession of DCHAC and three (3) had DOPHTH. This indicates that very few nurses with ophthalmic care qualifications practise at the clinics.

Each participant's years of experience in health services was sought as it is generally believed that persons with more experience demonstrate satisfactory performance than those with less experience.

Table 9: Years of experience in health services N=50

NURSING EXPERIENCE IN YEARS	FREQUENCY
1 - 5 Years	8
6 - 10 Years	13
11 - 15 Years	6
16 and above	23
TOTAL	50

Table 9 reflects that twenty three (23) participants had an experience of 16 years and above, and that twenty seven (27) had an experience below 16 years.

4.2.1 PRE-INTERVENTION DATA

a) Observation Checklist Scoring

Data from section A of the observation checklist, reflecting availability of basic eye care equipment, common eye medication and other pharmaceutical supplies at the clinics was scored by adding up the number of clinics which had the listed equipment items. The findings show that the commonest item found in the clinics was the ophthalmoscope available in seven out of eleven (11) clinics. Next in line was the visual acuity chart, which was found in three clinics, and each of the remaining items, that is, torch and batteries, minor surgical set, eye speculum and the Schiotz tonometer were available in the two eye clinics only.

Table 10: Number of Clinics with Basic Ophthalmic Equipment for use by Professional Nurses

TYPE OF EQUIPMENT	FREQUENCY
Eye pads	2
Ophthalmic	7
Visual acuity chart	3
Torch and batteries	2
Eye speculum	2
Schiotz tonometer	2
Minor surgical set	2

Table 10 reflects that 7 clinics possessed ophthalmoscopes, 3 possessed visual acuity charts, and 2 had torches and batteries, eye specula and Schiotz tonometer. Few clinics were in possession of visual acuity charts as well as torch and batteries.

These findings show a general lack of basic equipment necessary for dealing with eye emergency situations, and limited variety of the necessary medications and pharmaceutical supplies at the clinics.

Table 11: Number of Clinics with Common Ophthalmic Medications and Other Medical Supplies for Use by Professional Nurses

OPHTHALMIC MEDICATIONS/ SUPPLIES AVAILABLE	FREQUENCY
Fluoresce in drops/ strips	2
Vitamin A capsules	7
Gentamycin drops	2
Chloramphenicol ointment	11
Chloramphenicol drops	2
Sulfacetamide ointment	4
Eyewash solution	11

Table 11 reflects that all eleven clinics had stocked the broad spectrum antibiotics (chloramphenicol eye ointment), eye wash solution. Seven (7) clinics had Vitamin A capsules, while four (4) had sulfacetamide drops and only the two eye clinics had the other six types of medications and pharmaceutical supplies.

b) Professional Nurses' Performance

To score the professional nurses' performance the number of check marks in Section, B and D of the observation checklist (Appendix "A") and in section B, C, D and E of the questionnaire (Appendix "B") were added up to reflect each individual's score. These scores were then converted into percentages.

Table 12 Professional Nurses' Performance N=50

PARTICIPANTS' NUMBER	AREA OF WORK	POST BASIC QUALIFICATION(S)	PERFORMANCE				C
			A		B		
			% score		% score		
1	eye clinic	DOPHTH	100	2	74	2	not required
2	general clinic	Nil	34	0	15	0	required
3	general clinic	DCHAC	46	0	15	0	required
4	general clinic	DOPHTH	26	0	32	0	required
5	general clinic	DCHAC	68	2	27	0	required
6	general clinic	Nil	20	0	52	1	required
7	general clinic	Nil	44	0	20	0	required
8	general clinic	Nil	60	2	48	0	required
9	general clinic	Nil	16	0	39	0	required
10	general clinic	Nil	50	1	41	0	required
11	general clinic	Nil	64	2	40	0	required
12	eye clinic	Nil	72	2	52	1	not required
13	general clinic	Nil	46	0	56	1	required
14	general clinic	Nil	82	2	40	0	required
15	general clinic	Nil	36	0	43	0	required
16	general clinic	Nil	26	0	37	0	required
17	general clinic	Nil	12	0	21	0	required
18	general clinic	Nil	36	0	56	1	required
19	general clinic	Nil	50	1	23	0	required
20	general clinic	Nil	14	0	30	0	required
21	general clinic	DCHAC	32	2	47	0	required
22	general clinic	Nil	72	0	34	0	required
23	general clinic	ADMNC	22	0	18	0	required
24	general clinic	Nil	28	0	27	0	required
25	general clinic	Nil	14	0	38	0	required
26	general clinic	Nil	30	0	31	0	required
27	general clinic	Nil	44	0	12	0	required

28	general clinic	Nil	24	0	15	0	required
29	general clinic	Nil	46	0	35	0	required
30	general clinic	Nil	30	0	40	0	required
31	general clinic	Nil	72	2	24	0	required
32	general clinic	DCHAC	60	2	29	0	required
33	general clinic	DCHAC	36	0	37	0	required
34	general clinic	DCHAC	44	0	37	0	required
35	eye clinic	DOPHTH	94	2	84	2	not required
36	general clinic	ADMNC	32	0	34	0	required
37	general clinic	Nil	26	0	2	0	required
38	general clinic	Nil	14	0	17	0	required
39	general clinic	Nil	36	0	37	0	required
40	general clinic	Nil	40	0	40	0	required
41	general clinic	Nil	36	0	47	0	required
42	general clinic	Nil	58	1	38	0	required
43	general clinic	Nil	46	0	32	0	required
44	general clinic	Nil	54	1	43	0	required
45	general clinic	Nil	62	2	42	0	required
46	eye clinic	Nil	96	2	80	2	required
47	eye clinic	Nil	86	2	53	1	not required
48	general clinic	Nil	10	0	30	0	required
49	general clinic	Nil	54	1	29	0	required
50	general clinic	Nil	22	0	57	1	required

KEY: A = Checklist outcome
B = Questionnaire outcome
C = Intervention
2 = "Above satisfactory"
1 = "Satisfactory"
0 = "Below satisfactory"

The individual level of performance was rated on the following scales

- "Above satisfactory" = 70% or more points
- "Satisfactory" = 50% - 69%
- "Below satisfactory" = 0% - 49%

The findings show that eight (8) out of fifty participants (16%) out of which five (10%) of whom only two (2) were ophthalmic trained, performed at the "above satisfactory" level. Ten (10) out of fifty (50) participants (20%) none of whom had ophthalmic qualification and all of whom worked in general clinics performed at the "satisfactory" level. The remaining thirty two (32) participants (64%) one of whom had an ophthalmic qualification and all of whom worked in general clinics performed at "below satisfactory" level.

These findings suggest that non-ophthalmic trained nurses whose work environment expose them to eye care facilities possess better eye care skills than ophthalmic trained nurses who do not have exposure to ophthalmic situations. They also suggest that 64% of professional nurses who work in situations that lack the necessary eye care facilities do not possess adequate skills for the prevention of blindness and the rehabilitation of the blind. Figures based on the total group performance suggest a "below satisfactory" level of performance for professional nurses working in general clinics while the performance by non-ophthalmic trained nurses working in eye clinics is shown to be "above satisfactory". These figures also suggest relatively lower performance by ophthalmic trained nurses due to the inclusion of the one ophthalmic trained nurse who was not practising in the eye clinic.

Further analysis was done to determine the performance of the following categories of participants:

Category "A" - ophthalmic trained nurses

Category "B" - non-ophthalmic trained nurses practising in eye clinics

Category "C" - non-ophthalmic trained and not practising in the eye clinic

To determine the average score for each of these categories, the total number of points obtained was divided by the number of individuals in the category. These average scores were then measured against the performance rating scale mentioned above.

Average performance by the three (3) ophthalmic trained nurses one for whom obtained 26% was 73% (Table 12). Average performance by the three non-ophthalmic trained nurses who practised in the eye clinics was 85%. Average performance by the 44 non-ophthalmic trained nurses who were also not practising in the eye clinic was 38%. The overall average performance for all 50 professional nurses was 43%.

c) Questionnaire Scoring

To score the questionnaire responses a marking guide indicating relevant answers and prepared by the researcher was used (Appendix 'D'). Each correct response was given a point. The performance was rated using the same scale as for the observation checklist. Individual as well as group performances were determined.

Individual performance findings show that three (3) out of 50 participants (6%), two (2) ophthalmic trained and one non-ophthalmic trained all of whom were practising in eye clinics performed at the "above satisfactory" level. Six (6) out of 50 participants (12%) two (2) of whom were practising in the eye clinic performed at a "satisfactory" level. The remaining 41 participants (82%) one of whom was ophthalmic trained but not practising in the eye clinic performed at a "below satisfactory" level.

Further analysis was done to establish group performance level in the areas of health education, assessment skills and eye care measures directed at high risk conditions. Group performance in each of the individual aspects within these broader areas was also done. This was done in order to identify the intervention needs.

Items evaluating the professional nurses' knowledge on the areas of health education, assessment skills and eye care measures directed at high risk conditions, were each allocated a point. These points were added up to give the actual score for each specific aspect within these areas. For example, nutritional practice, environmental hygiene, personal hygiene, were treated as aspects of a broader area of health education. The actual score for each aspect in an area was obtained by adding up the number of points scored. To obtain the level of performance for each category of participants, the average scores were measured against the expected scores.

The expected score was calculated based on the number of participants in each category (such as category "C" participants), multiplied by the highest number of points that could be scored in each aspect. For example, the expected score on nutritional aspects for category "C" participants was 44 x 5 = 220.

To determine the level of performance for each category of participants in each of the aspects evaluated, the same rating scale as in the observation checklist was used. The results of this analysis are presented according to primary prevention, secondary prevention and tertiary prevention.

4.2.2 Performance of Professional Nurses on Health Education

a) Health Education

In primary prevention the average performance for the three category "A" participants, two of whom were practising in eye clinics was "above satisfactory" level on areas of health education pertaining to personal hygiene, child care, pregnant mothers and motor vehicle drivers. They performed at satisfactory level in aspects of environmental hygiene, eye strain, traditional healers, occupational safety and nutritional practices.

Table 13 Category 'A' performance on Health Education on Prevention At Primary Level N=3

FACTORS EMPHASISED	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE
Nutritional practices	15	8	53
Environmental hygiene	15	10	67
Personal hygiene	15	11	73
Child care	15	11	73
Eye strain	15	10	67
Management in industry	12	7	58
Pregnant mothers	12	10	83
Motor vehicle drivers	12	9	75
Traditional healers	9	6	67

Table 13 shows that the performance of category "A" professional nurses in giving health education/advice on prevention of blindness was generally good. The percentage scores ranged between 58% - 75%.

Table 14 Category 'A' performance on Health Education At Secondary Level

FACTORS EMPHASISED	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE
Care of eye spectacles	15	13	87
Use of eye medication	18	12	67
Care of contact lenses	15	14	93

In secondary prevention performance was "above satisfactory" in the care of contact lenses and eye spectacles while in use of eye medication was at satisfactory level.

Table 15 Category 'A' performance on health education N=3

FACTORS ON TERTIARY PREVENTION	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE
Goal for rehabilitation	3	3	
Targeted skills during rehabilitation	9	8	100
Rehabilitation services for adults	9	5	89
Rehabilitation services for children	9	3	56
Role players in rehabilitation of the blind	6	13	50
Identification of roles for each person involved in the rehabilitation of the blind	18	11	72
Counselling of parents with a blind child	18	12	61
Counselling on albinism	18	12	67
Guiding and assisting a blind person on walking	12	6	50

In relation to tertiary prevention, performance was "above satisfactory" in questions relating to goals for rehabilitation, skills targeted, and role players in the rehabilitation of the blind. Knowledge requiring identification of roles for each person involved in the rehabilitation of the blind, counselling of parents with a blind child and of a child with albinism, assisting of a blind person on walking, as well as knowledge of available

rehabilitation services was at the satisfactory level. The percentage scores at this level ranged between 50% - 100%.

On the whole the performance of category "A" participants in primary prevention was "satisfactory" with the average performance being 68%. The highest score 83% was attained on the aspect of health education to pregnant mothers with respect to the prevention of blindness. However only performance on nutritional practices attained a "satisfactory" level of 53%. The performance in secondary prevention was even higher with scores ranging from 67% - 93%. Similar to primary prevention, performance in tertiary prevention was generally "satisfactory" where the highest score (100%) was obtained on a knowledge aspect.

Table 16 Category 'B' performance on Health Education at Primary level N=3

ASPECTS	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE
Nutritional practice	15	15	100
Environmental practice	15	10	67
Personal hygiene	15	12	80
Child care	15	12	80
Eye strain	15	10	67
Occupational safety	12	9	75
Pregnant mothers	12	12	100
Motor vehicle drivers	12	9	75
Traditional healers	9	6	67

In primary prevention the average performance for Category "B" participants was "above satisfactory" level in all aspects of health education except for environmental hygiene, eye strain and traditional healers, all of which were saved at "satisfactory" level.

Table 17 Category "B" Performance on Health Education at Secondary Level N=3

FACTORS EMPHASIZED	EXPECTED SCORES	P/NURSES SCORES	PERCENTAGE
Care of eye spectacles	15	13	87
Use of eye medication	18	12	67
Care of contact lenses	15	14	93

Table 17 reflects that category "B" performance on health education at secondary level ranged from "satisfactory" to "above satisfactory".

Table 18 Category 'B' performance on Health Education at tertiary level N=3

ASPECTS	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Goal/ rehabilitation	3	3	100
Targeted skills during rehabilitation	9	8	89
Rehabilitation services for adults	9	3	33
Rehabilitation services for children	6	3	33
Role players in rehabilitation of the blind	18	9	50
Identification of roles for each person involved in the rehabilitation of the blind	18	11	61
Counselling of parents with a blind child	18	12	67
Counselling of albinism	18	12	67
Assisting a blind person on walking	12	6	50

Like in Category "A" participants, performance in tertiary prevention was "above satisfactory" in aspects of goals for rehabilitation and skills targeted. A "satisfactory" level was attained on knowledge requiring counselling of parents with a blind child, counselling on albinism, identification of roles for each person involved in the rehabilitation of the blind and assisting the blind person in walking. Performance pertaining to the knowledge of rehabilitation services for both adults and children was "below satisfactory" level. Except for the knowledge of available rehabilitation services, performance of Category "B" participants is comparable to the Category "A's" performance.

Table 19 Category 'C' performance on health education at primary level N=44

ASPECTS	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Nutritional aspects	220	75	34
Environmental hygiene	220	56	26
Personal hygiene	264	75	28
Child care	264	45	17
Eye strain	264	34	13
Occupational safety	176	45	25
Pregnant mothers	264	74	28
Motor Vehicle drivers	176	15	9
Traditional healers	132	11	8

Table 19 reflects that category "C" professional nurses' performance was "below satisfactory" in all areas of health education at primary level. The score was 34% on nutritional practices in which one would expect the highest score to be obtained.

Table 20 Category 'C' performance on health education at secondary level N=44

ASPECTS	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Care of eye spectacles	220	85	39
Use of eye medication	220	67	31
Care of contact lenses	264	58	22

Table 20 shows inadequate knowledge of professional nurses on health education to be given to clients at secondary level with respect to the prevention of blindness. The score was 39%, on care of eye spectacles, 22% on care of contact lenses. Fifty percent (50%) of participants gave no response on this item.

Table 21 Category 'C' performance on health education at tertiary level N=44

ASPECTS	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Goal for rehabilitation	44	30	68
Targeted skills during rehabilitation	132	60	46
Rehabilitation services for adults	132	30	23
Rehabilitation services for children	88	07	08
Role players in rehabilitation of blind	308	50	16
Identification of roles for each person involved in the rehabilitation of the blind	308	65	21
Counselling of parents with a blind child	264	60	23
Counselling of albinism	264	76	29
Assisting a blind person on walking	176	40	23

Table 21 reflects that the maximum performance was on goal for rehabilitation where the performance score 68%. This suggests awareness of professional nurses on the goal aimed at rehabilitating the blind person. It was also noted that professional nurses' knowledge on rehabilitation services available for blind children in KwaZulu-Natal was inadequate (8%). However, except for goals for rehabilitation where performance was "satisfactory", scores indicated a "below satisfactory" level for all aspects.

b) Assessment Skills

Table 22 Category 'A' performance on assessment skills N=3

SKILL	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Knowledge on visual acuity tools	9	6	67
Knowledge on test tools for illiterate adults	9	6	67
Knowledge of test tools for illiterate children	9	6	67
Important factor in visual acuity test	3	2	67
Interpretation of visual acuity results	9	3	67
History taking	27	22	81
Equipment used for external ocular examination	12	9	75

Evaluation of assessment skills possessed by Category "A" participants showed a "satisfactory" performance level in all five aspects of visual acuity testing with an average of 67%. The level of performance indicating the knowledge on taking ophthalmic history and equipment used for external ocular examinations was "above satisfactory" and "satisfactory" respectively.

Table 23 Category 'A' performance on eye inspection N=3

STRUCTURED INSPECTED	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE
Eyelids	18	13	72
Conjunctiva	12	9	75
Cornea	9	4	44
Anterior chamber	9	6	67
Pupil	12	6	50

Pertaining to the knowledge on common abnormalities to look for on eye inspection, "above satisfactory" performance was obtained in aspects pertaining to the eyelids and conjunctiva. Performance on the knowledge pertaining to the anterior chamber and pupil was at "satisfactory" level, while performance pertaining to the cornea was below satisfactory.

Table 24 Category 'B' performance on assessment skills N=3

SKILL	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Knowledge on visual acuity tools	9	9	100
Knowledge on test tools for illiterate adults	9	6	67
Knowledge of test tools for illiterate children	9	3	33
Important factor in visual acuity test	3	3	100
Interpretation of visual acuity results	9	3	33
History taking	27	17	63
Equipment used for external ocular examination equipment	12	6	50

Evaluation of assessment skills possessed by Category "B" participants showed a level of performance "above satisfactory" on knowledge of visual acuity test tools and identification of distance as the important factor in visual acuity testing while a level of "satisfactory" performance was shown on one item in which the participants were to state visual acuity test tools for illiterate adults. A level "below satisfactory" was shown on items pertaining to knowledge of test tools for illiterate children and interpretation of visual acuity test results. The level of performance pertaining to the knowledge on history taking and equipment used for external ocular examinations was "satisfactory".

Table 25 Category 'B' performance on eye inspection

STRUCTURES INSPECTED	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Eyelids	18	12	67
Conjuctiva	1	9	75
Cornea	9	3	33
Anterio chamber	9	6	67
pupil	12	3	25

An "above satisfactory" level of performance was shown with respect to abnormalities to look for on the conjuctiva. Performance on the knowledge pertaining to the eyelids, and anterior chamber was at "satisfactory" level, while performance pertaining to the cornea was "below satisfactory".

Table 26 Category 'C' performance on Assessment of Skills: Testing N=44

SKILL	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Knowledge on visual acuity tools	264	57	22
Knowledge on test tools for illiterate adults	132	35	27
Knowledge of test tools for illiterate children	176	38	22
Important factor in visual acuity test	44	23	52
Interpretation of visual acuity results	132	20	15
History taking	484	115	24
Equipment used for external ocular examination	132	21	16

Table 26 reflects a low performance of professional nurses in testing of visual acuity. The professional nurses demonstrated lack of awareness on visual acuity test tools (22%), and interpretation of visual acuity test results (15%). However they were aware of the important factor in visual acuity test (51%). Except for one item, evaluation of assessment skills possessed by Category "C" participants showed a level of performance "below satisfactory" in four (4) out of five (5) items of visual acuity testing. The one item in which a level of "satisfactory" performance (51%) was shown required the participant to identify distance as an important factor in visual acuity testing. Knowledge on both history taking and equipment used for external ocular examination was "below satisfactory".

Table 27 Category 'C' performance on eye inspection N=44

STRUCTURES INSPECTED	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Eyelids	352	40	11
Conjunctiva	176	52	30
Cornea	176	28	16
Anterior chamber	132	30	23
Pupil	264	22	08

Table 27 indicates unsatisfactory performance of performance of professional nurses on eye inspection. The maximum performance was 30% scored on abnormalities to look for on the conjunctiva . One would expect the highest performance of professional nurses on stating the abnormalities to look for on the conjunctiva since it is the commonest eye structure that signifies the presence of most eye problems.

Performance pertaining to the knowledge on common abnormalities to look for on eye inspection was "below satisfactory" for all five (5) structures (eyelids, conjunctiva, cornea, anterior chamber and pupil of the eye.

c) Specific Eye Care Measures

This section deals with the professional nurses' performance in relation to the prevention of blindness in high risk conditions at both primary and secondary levels. The prevention involves eye care measures directed at certain conditions. At primary level prevention

required the care of the following; a new born infant during delivery, premature infant, patient on quinine. At secondary level conditions included corneal abrasions, red painful eyes, intra ocular foreign body, glaucoma and senile cataracts.

Table 28 Category 'A' performance on specific eye care measures at primary level N=3

ACTIVITY	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Care of a new born infant during delivery	6	6	100
Care of a premature infant	6	4	66
Care of a patient on quinine	6	3	50

At primary level both category "A" and "B" participants showed an "above satisfactory" level of performance on the care of the new born infant. On the other hand performance was only at "satisfactory" level for the remaining items.

Table 29 Category 'B' performance on specific eye care measures at primary level N=3

ACTIVITY	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Care of a new born infant during delivery	6	6	100
Care of a premature infant	6	3	50
Care of a patient on quinine	6	3	50

Category "B" participants performed at "satisfactory" level on the care of a premature infant and care of a patient on quinine. Performance was "above satisfactory" on the care of a new born infant on delivery.

Table 30 Category 'C' performance on specific eye care measures at primary level N=44

SPECIFIC EYE CARE MEASURE	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
New born infant during delivery	88	61	69
Premature infant	88	25	28
Patient on quinine	132	13	10

Results reflect that category "C" professional nurses performed well on the care of the eyes of a new born infant during delivery (68%). Performance on the care of the eyes of the premature infant was unsatisfactory (28%).

Table 31 **Category "A" performance on specific eye care measures at secondary level N=3**

SPECIFIC EYE CARE MEASURE	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Corneal abrasion	21	12	57
Red painful eyes	09	06	67
Intraocular foreign body (IOFB)	09	05	56
Glaucoma	09	06	67
Senile cataract	09	06	67

At secondary level category "A" participants performed at a "satisfactory" level on all conditions.

Table 32 Category "B" performance on specific eye care measures at Secondary level N=3

ACTIVITY	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Corneal abrasion	21	09	43
Red painful eyes	09	03	33
Foreign body (IOFB)	09	03	33
Glaucoma	09	06	67
Senile cataract	09	06	67

Category "B" performed at "satisfactory" level on the care of glaucoma and senile cataract only. Performance on corneal abrasions, red painful eye and intraocular foreign body was "below satisfactory".

Table 33 Category "C" Performance on specific eye care measures at secondary level N=44

BLINDING PROBLEM	EXPECTED SCORES	ACTUAL SCORES	PERCENTAGE PER ITEM
Corneal abrasion	176	24	14
Red painful eyes	264	35	13
Intra ocular foreign body (IOFB)	264	62	24
Glaucoma	132	42	32
Senile cataract	176	43	24

Category "C" on the other hand performed at a "below satisfactory" on all conditions. These findings reveal inadequate performance of professional nurses in the care of patients presenting with blinding problems at the clinic. Professional nurses lack knowledge on actions that they should take when patients report certain blinding problems to be attended to at secondary level.

Table 34 Results on Patients' Interviews Reflecting Professional Nurses' Performance

NURSING MEASURES TAKEN	NUMBER OF PATIENTS		
	YES	NO	TOTAL
History taking	3	7	10
Eye inspection	4	6	10
Visual acuity test	1	9	10
Advice given	3	7	10
Referral letter available	3	7	10

The patients were interviewed to determine measures of care they received at the clinics before referral. Four patients reported that eye inspection was performed while three reported that the following measures were taken; history taking, given the advice, and issued a referral letter. Only one patient had a visual acuity test performed. Amongst the patients who reported that these measures were taken, one was referred from an eye clinic. The results reveal a "below satisfactory" performance of professional nurses with respect to the prevention of blindness and the rehabilitation of the blind.

4.2.3 The extent of Professional Nurses' Performance

To determine the extent to which professional nurses performed activities pertaining to the prevention of blindness and the rehabilitation of the blind, the nurses' performance was measured against ten activities (indicators) commonly performed at primary, secondary and tertiary level. The activities are listed in section 'F' of the questionnaire (Appendix B).

To arrive at a score the responses indicating the frequency with which each activity was done and the reasons given for that extent of performance were quantified based on a frequency scale. This frequency scale is given below.

Frequency Scale

1 = 'Not at all'

2 = 'minimally'

3 = 'reasonably'

4 = 'considerably'

5 = 'a great deal'

While the analysis of the responses from other sections was done comparing three categories, the analysis of the extent of performance based on the assumption number 5 compared two categories only, namely, professional nurses working in the eye clinics and those practising in non-eye clinics (general clinics).

To test the assumption on the extent of the professional nurses performance in the prevention of blindness and rehabilitation of the blind, ten (10) indicators were identified. These indicators consisted of basic eye care activities expected of the professional nurses at primary, secondary and tertiary levels of care (Appendix B). Using the frequency scale each participant indicated the extent to which she/he performed each of the listed activities. The meaning of each level of the scale was left to each individual participant to interpret. To arrive at the score a performance percentage was determined for two categories of professional nurses in the study, namely, professional nurses practising in eye care clinics and professional nurses practising in general clinics. In allocating the score each indicator was considered individually. The findings are presented in graph form with the 'Y' axis showing group performance in percentage and the numerals on the 'X' axis representing the individual indicators.

d) Key to Indicators

At Primary Level

1. Conducting in-service education to health care workers
2. Education of the community on daily general eye care
3. Education of school children on prevention of eye accidents

At Secondary Level

4. Screening of school children for refractive errors
5. Prescribing eye medication for common eye disorders (such as eye infections)
6. Assessment of patients with diabetes mellitus for visual disturbances
7. Testing visual acuity for all patients reporting general ill health

At Tertiary Level

8. Home/community follow up for patients with glaucoma
9. Giving psychological support to the blind and his family
10. Counselling patients presenting with progressive visual loss.

Figure 2: Percentage of participants' performance per rating (N = 5)

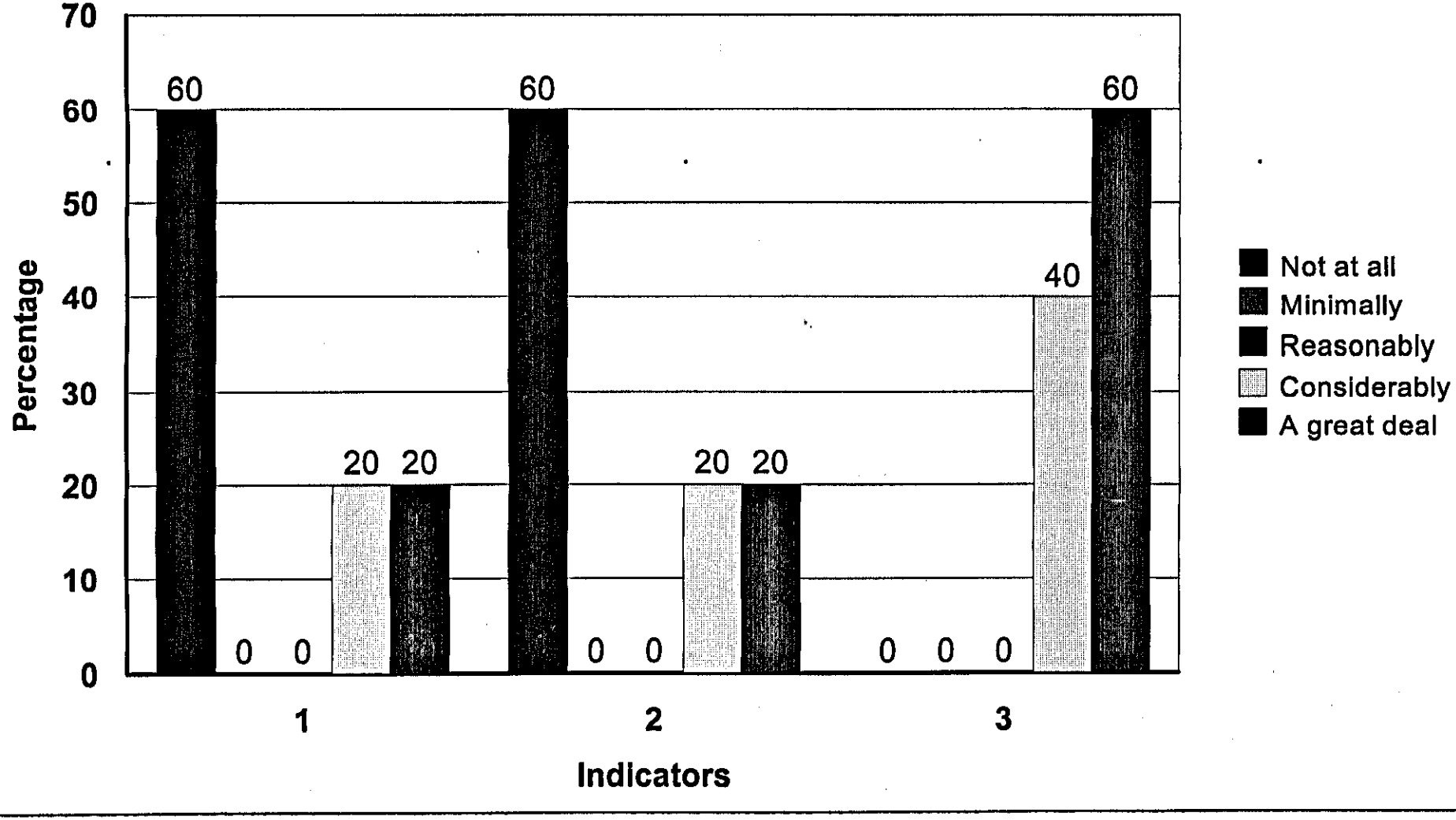


Figure 3: Percentage of participants' performance per rating (N = 5)

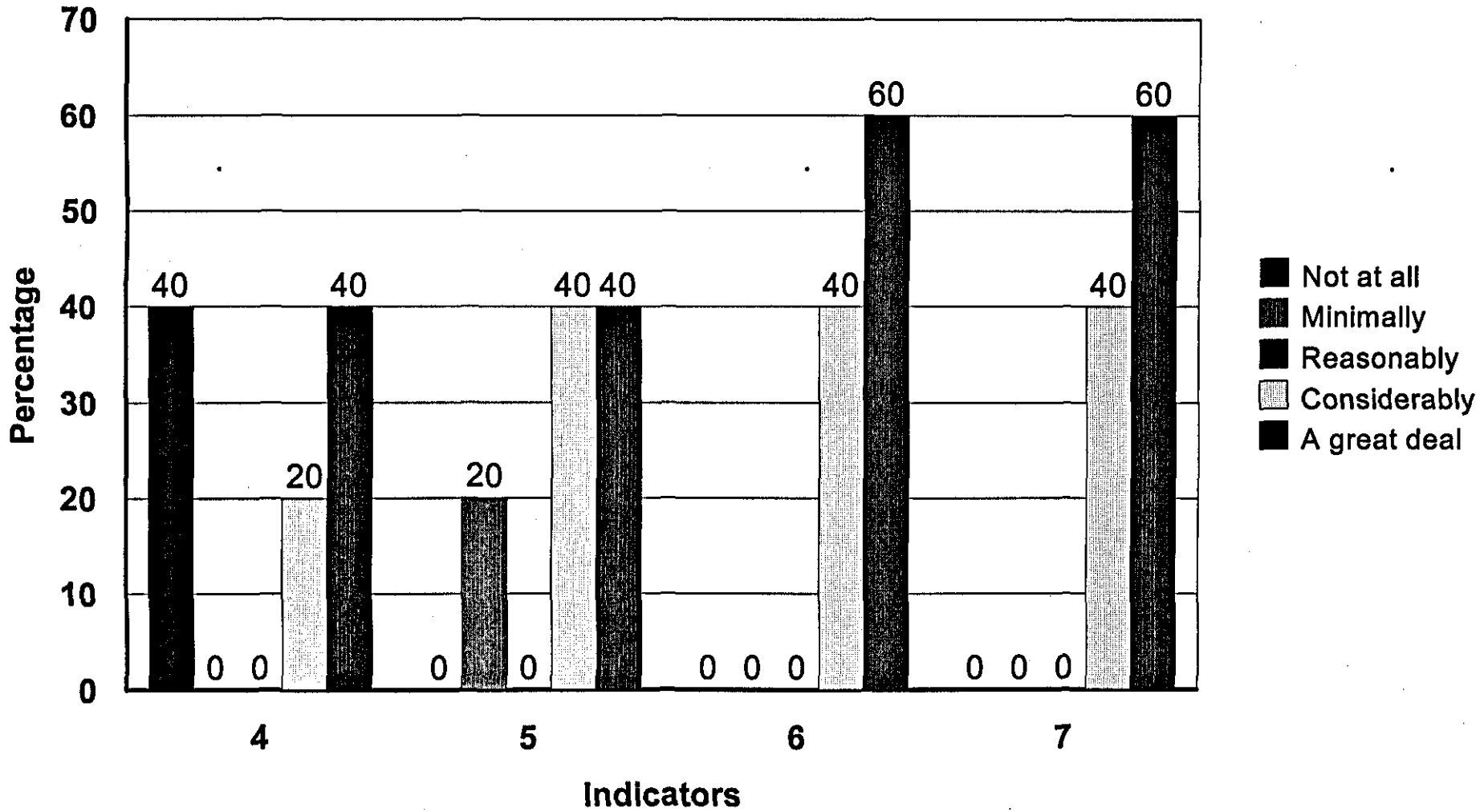
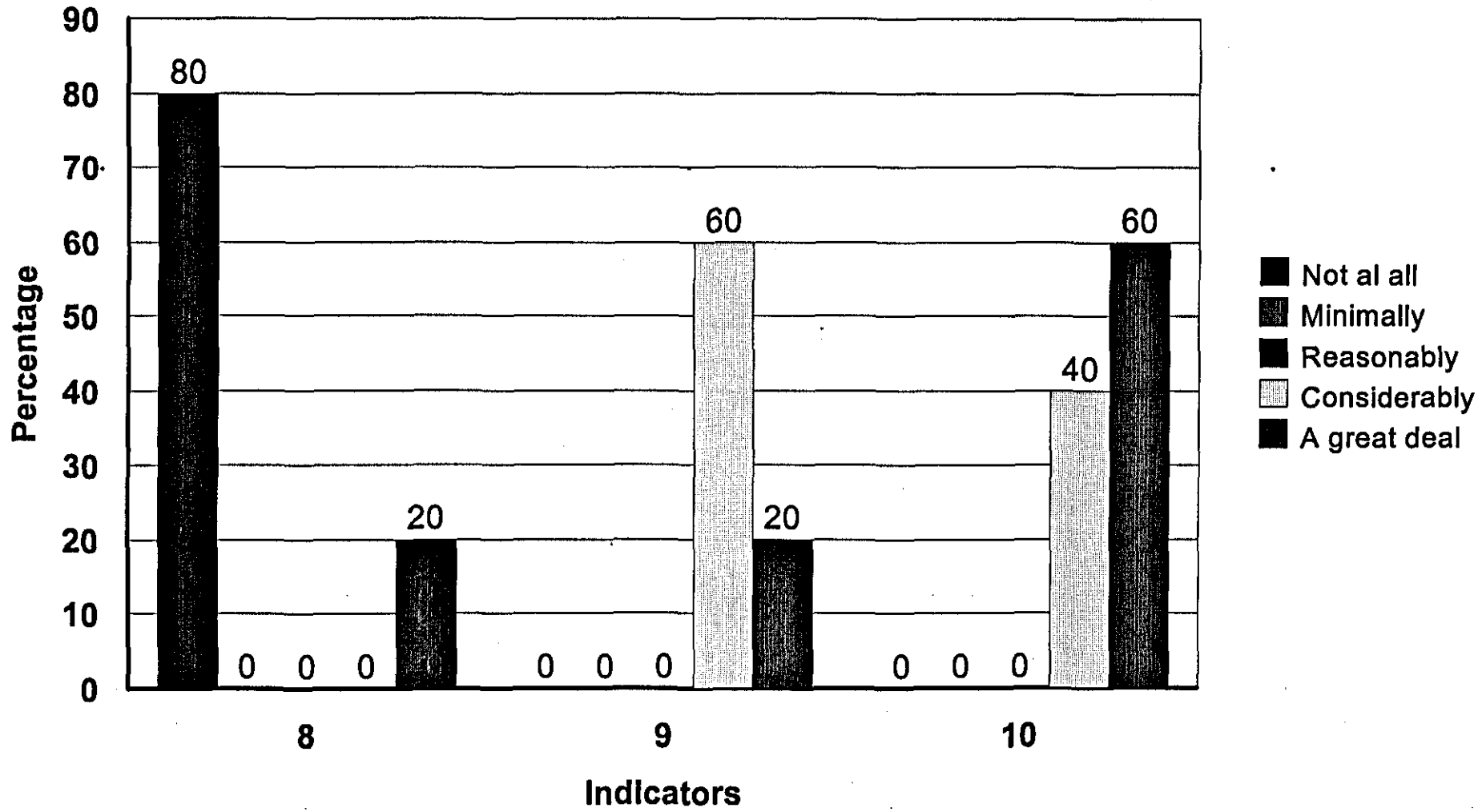


Figure 4: Percentage of participants' performance per rating (N = 5)



In their self-assessment professional nurses practising in eye clinics rated their performance with respect to indicator 3, 6, 7, 9 and 10 as being considerable (40%) and 'a great deal' (60%). With regards to indicator 5 performance was rated as 'reasonably' in 20% of the participants, 'considerably' and 'a great deal' in 40% of the participants respectively. In the case of indicators 1, 2, 4 and 8, although some nurses placed their performance at 'considerably' and 'a great deal', sixty percent (60%) placed their performance at 'not at all' for indicators 1 and 2, while this was the case with forty (40%) in the case of indicator 4. Indicator 8 reflected the highest percentage (80%) of participants at the 'not at all' level. With the exception of the screening of school children for refractive errors where the performance was placed at 'considerably' activities performed at community settings were placed at the 'not at all level.

Figure 5: Percentage of participants' performance per rating (N = 45)

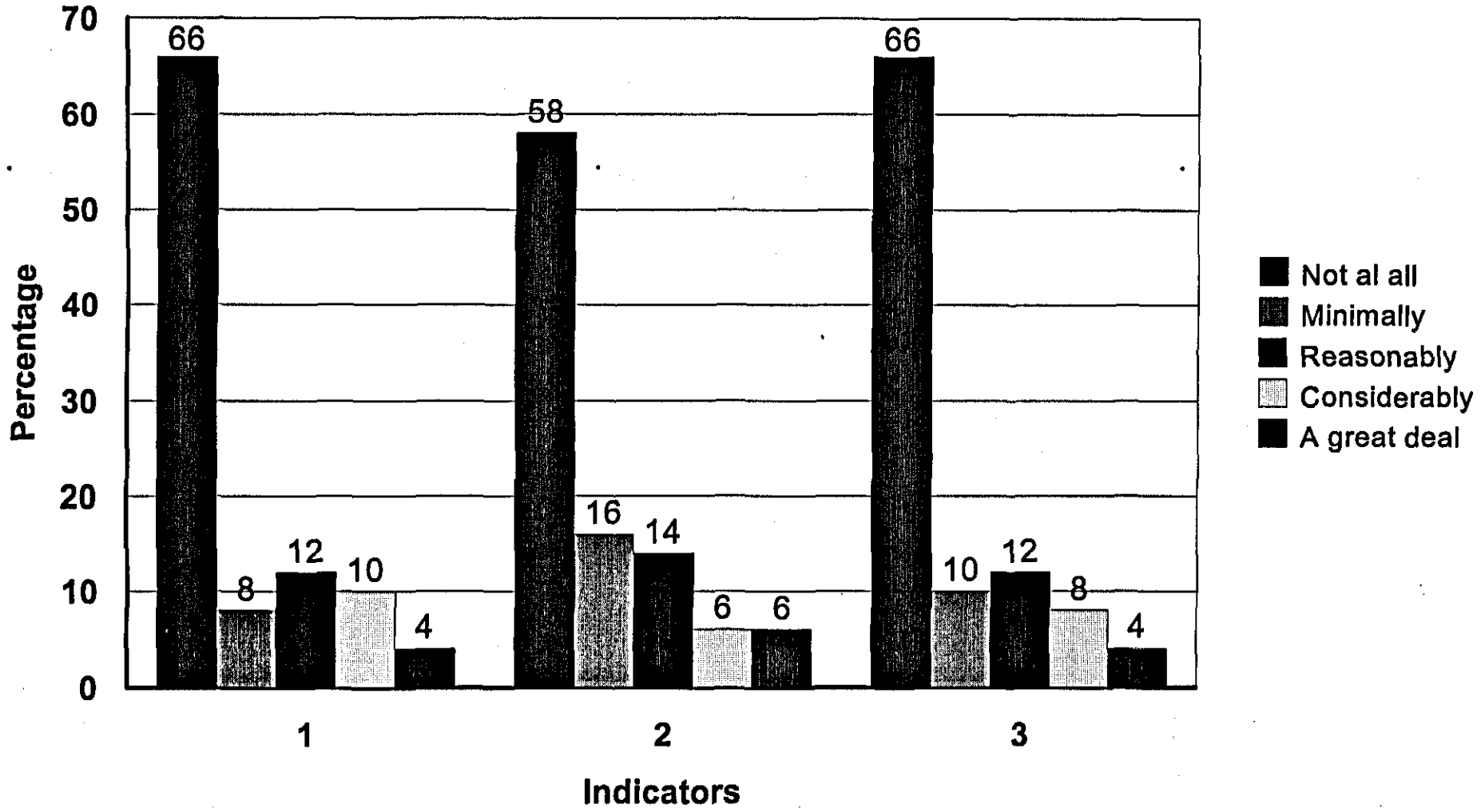


Figure 6: Percentage of participants' performance per rating (N = 45)

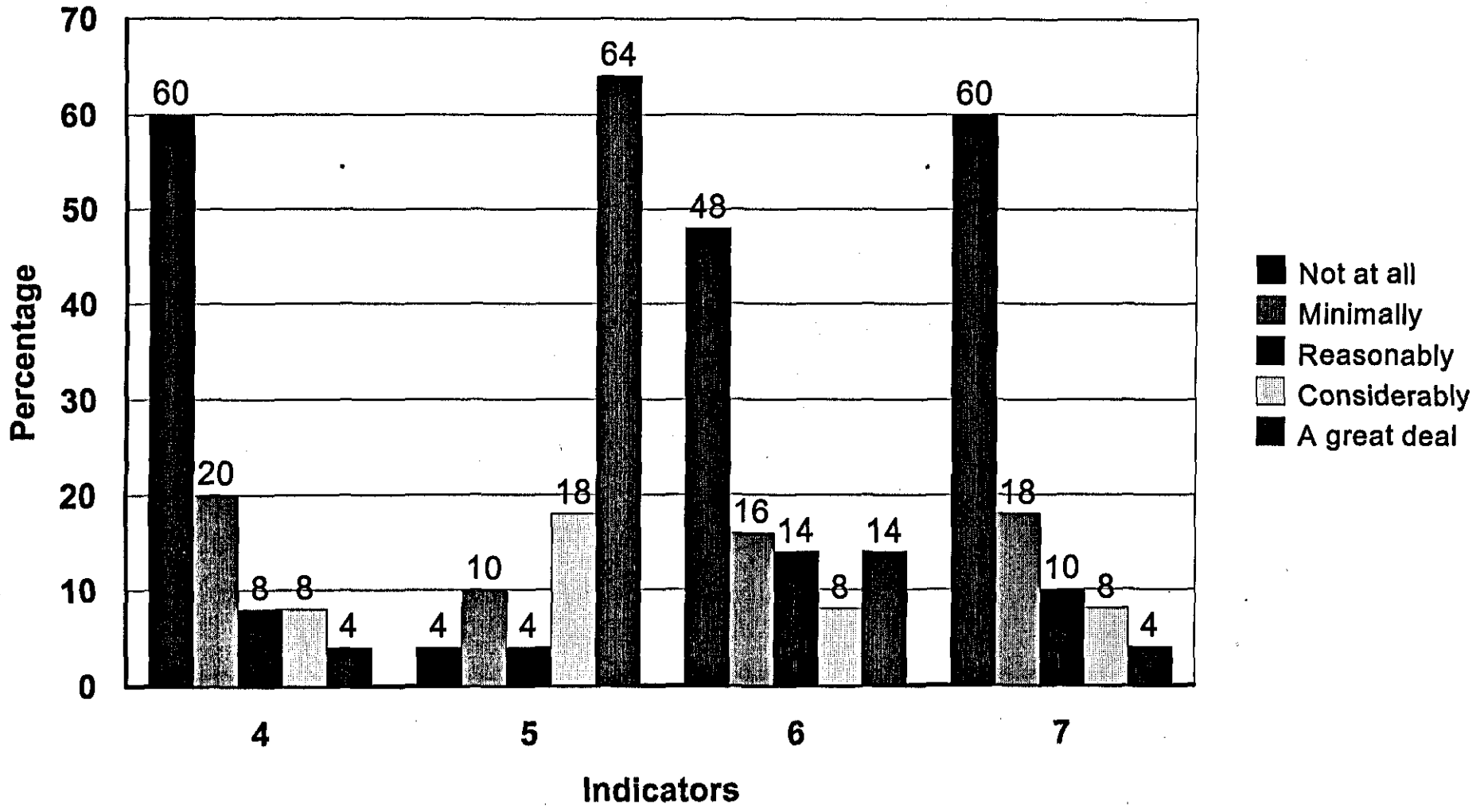
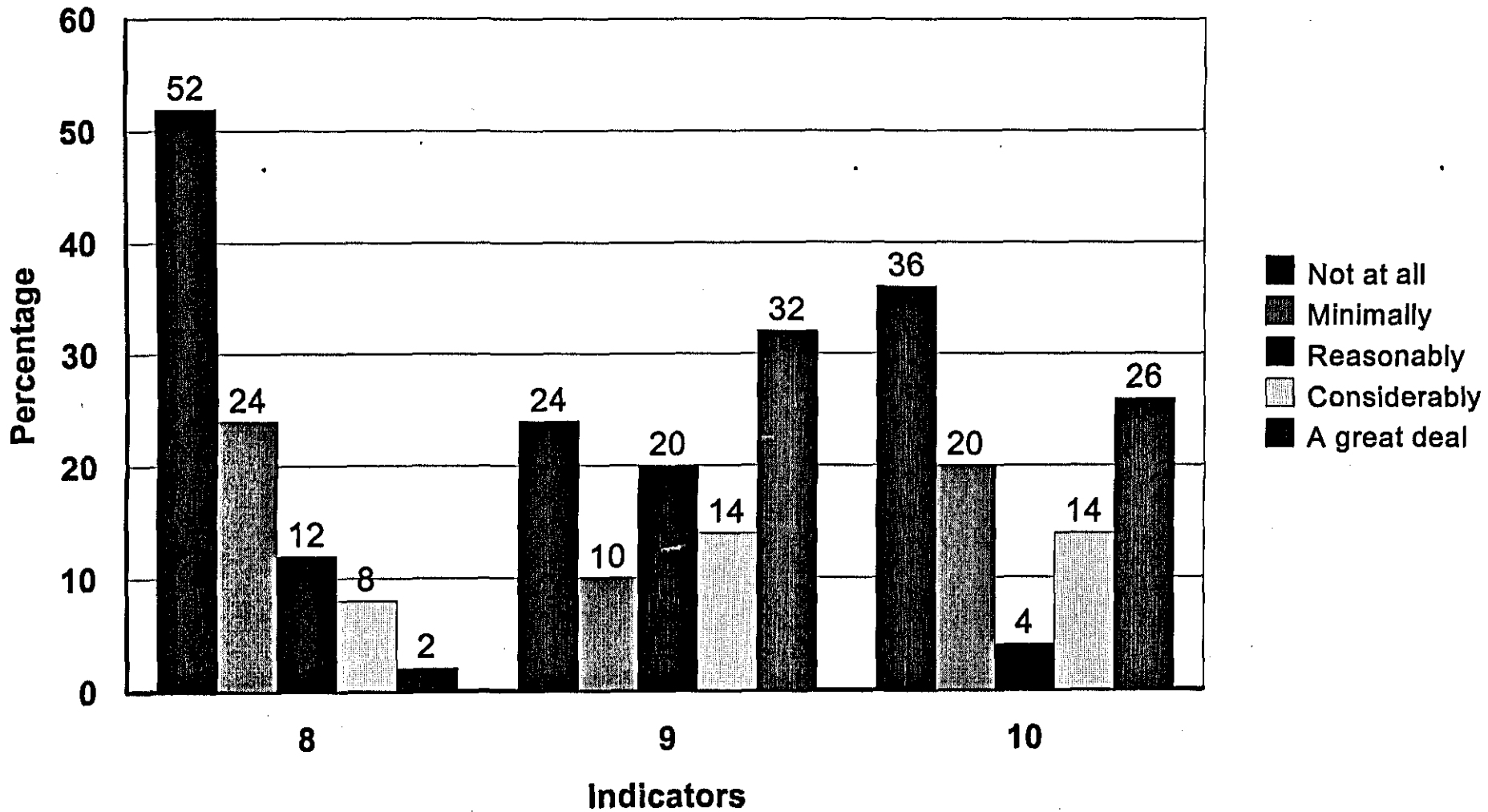


Figure 7: Percentage of participants' performance per rating (N = 45)



e) EXTENT OF PERFORMANCE OF PROFESSIONAL NURSES WORKING IN GENERAL CLINICS (FIGURE 5, 6, 7)

Performance for professional nurses working in general clinics spread across all levels of the frequency scale in contrast to those in the eye clinic setting whose performance was confined to almost three frequency levels only. In addition, the 'not at all' performance level was given in the case of all ten indicators with participant levels of above fifty percent (50%) for indicators 1, 2, 3, 4, 7 and 8. The 'not at all' level was given for indicators 6, 9, 10 and 5 by 48%, 24%, 36% and 4% of the participants respectively. With the exception of indicator 5 (with 64% of participants) the participant percentage of 'a great deal' ranged from a low score of 2% to a high score of 32%. The percentage ranged from a low score of 8% to a high score of 18% in the case of 'considerably' for the same indicator (indicator 5).

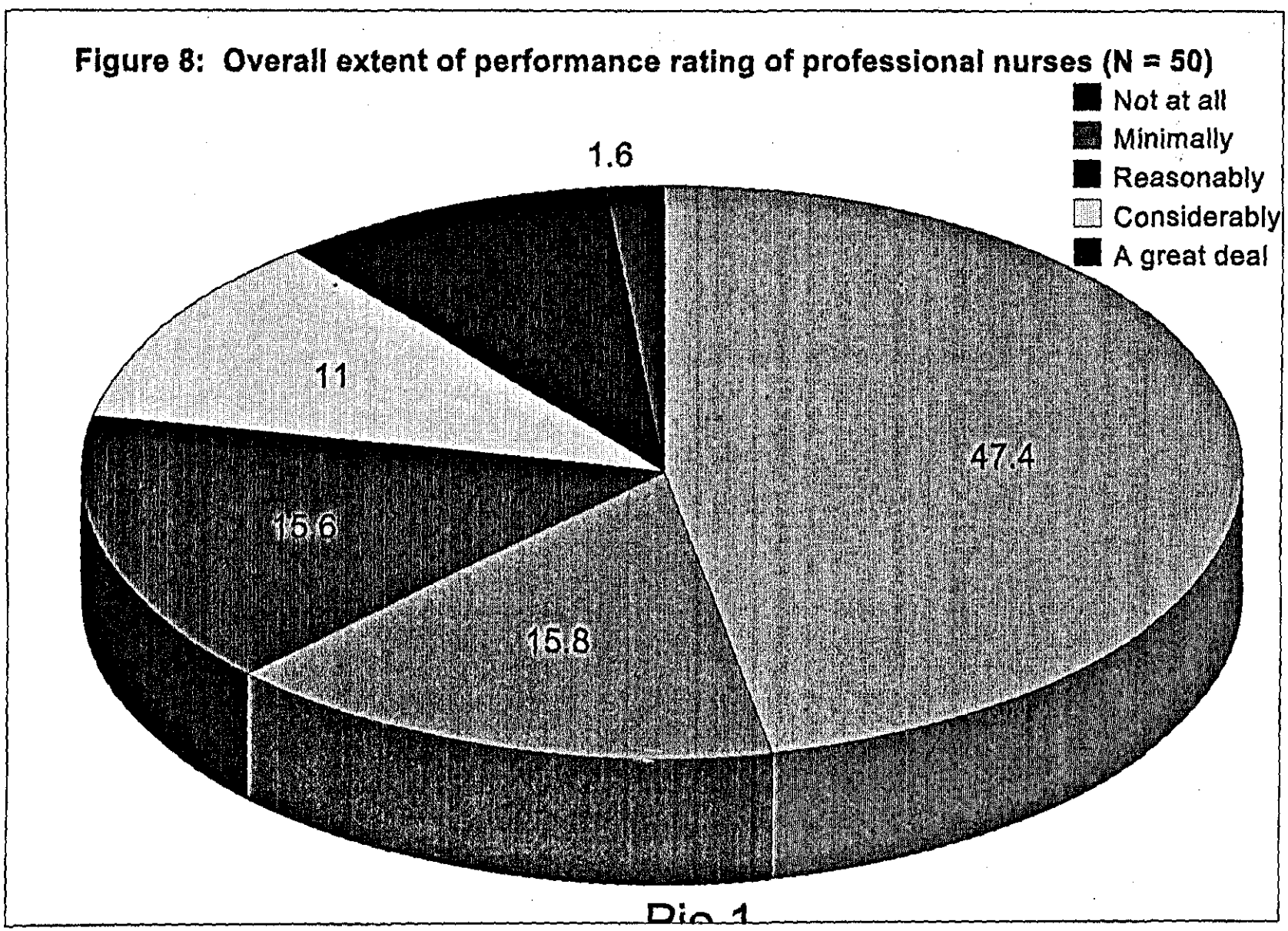


Figure 8: Overall extent of performance rating of professional nurses (N = 50)
Not at all
Minimally
Reasonably
Considerably
A great deal
1.6
47.4
15.8
15.6
11
Pie 1

The ratings (figure 8) in the extent of performance in the prevention of blindness and the rehabilitation of the blind appeared to be "not at all" to be performed according to the majority (47.4%) of fifty (50) professional nurses practising at the clinics.

f) SUMMARY ON THE EXTENT OF PROFESSIONAL NURSES' PERFORMANCE

In comparison activities directed at the prevention of blindness and rehabilitation of the blind were performed at a much lesser extent by nurses working in general clinics. However, the extent to which community-based activities were performed was low for both categories. At the same time prescribing of eye medications was high for both groups. In this respect performance at the 'considerably' and 'a great deal' occurred with 80% and 82% of the nurse practising in eye clinics and those practising in general clinics respectively. Outside of two activities (that is, prescribing of medications and community activities) the extent of performance by nurses in the general clinics does not show any specific trend.

In summing up, the ratings of all professional nurses in their performance with respect to the prevention of blindness and rehabilitation of the blind appeared to be at 'not at all' level. The reasons for their 'not at all' extent of performance were further analysed. These were as follows:

Table 35 Summary of stated reasons N=50

REASONS	FREQUENCY	OVERALL PERCENTAGE
No equipment for eye test/ examination	25	56.4
Intervention performed only when client/ patients presents an eye problem	14	31
Lack of knowledge on eye care	13	28
No ophthalmic qualified nurse	8	18
Staff shortage	8	18
It is not necessary	9	20
No interest on eye care	9	20
Inadequate eye medication at the clinic	8	18
Failure of the institution to educate professional nurses on eye care	8	18
In-service education on eye care not available	7	15
Transport for community eye care not available	5	10.2
No time	7	16.3
Responsibility of school health nurses	7	16

Table 35 reflects that the variables that mostly affects professional nurses' ability to prevent blindness and rehabilitation of the blind are lack of equipment (56.4%); intervention which is commenced when the patient has an eye problem (31%); lack of knowledge on eye care 28%; and absence of ophthalmic qualified nurse in most clinics (18%); staff shortage (18%); some activities viewed as not necessary (20%); and no interest on eye care (20%); no time 16%; child care is the responsibility of school health nurses (16%); no in-service education; (15%); and transport not available (10%).

4.3 POST-INTERVENTION DATA

The post-intervention data was analysed to determine the effectiveness of the intervention programme. Scores from the observation checklist, the questionnaire, and patients' interviews were used for this purpose. Scoring of performance was done in the same manner as for the pre-intervention performance. To measure the outcome, post-intervention performance on the observation checklist and the questionnaire was compared with the pre-intervention performance. To achieve this purpose both individual and group performance were considered. All participants in the intervention programme were professional nurses practising in general clinics. The same scale as used in the pre-intervention phase was used to grade the performance in the post-intervention phase. In determining effectiveness of the intervention, three approaches were used namely; (1) analysis of individual performance which reflects the cumulative score for each individual participant on the observation checklist and the questionnaire; (2) analysis of group performance based on the total number of points gained by the group in each specific item, and (3) patients' interview results. For the intervention to be regarded as having been effective the post-intervention performance had to be at "satisfactory" level or higher on both the checklist and the questionnaire.

Table 36 Post-intervention Professional nurses' performance

RESPONDENTS' NUMBER	PERFORMANCE									INTERPRETATION OF THE WORKSHOP OUTCOME
	PRE-INTEVENTION					POST-INTERVENTION				
	A		B		C	A		B		
	%		%			%		%		
2	34	0	15	0	R	50	1	59	1	Effective
3	46	0	50	1	R	55	1	56	1	Effective
8	60	2	48	0	R	62	1	69	2	Effective
9	16	0	39	0	R	53	1	58	1	Effective
13	46	0	56	1	R	51	1	57	1	Effective
16	26	0	36	0	R	58	1	68	2	Effective
17	12	0	21	0	R	54	1	58	1	Effective
20	14	0	30	0	R	50	1	52	1	Effective
21	32	0	47	0	R	65	2	57	1	Effective
23	22	0	18	0	R	60	2	70	2	Effective
25	14	0	38	0	R	40	0	36	0	Not Effective
26	30	0	31	0	R	44	0	45	0	Not Effective
27	44	0	12	0	R	40	0	36	0	Not Effective
28	24	0	15	0	R	38	0	43	0	Not Effective
34	44	0	37	0	R	53	1	50	0	Effective
36	32	0	34	0	R	50	1	56	1	Effective
41	36	0	47	0	R	38	0	40	1	Not Effective
44	54	1	43	0	R	63	2	54	0	Effective
45	62	2	42	0	R	69	2	53	1	Effective
15	36	0	43	0	R	50	1	50	1	Effective

KEY

A	=	Observation checklist outcome
B	=	Questionnaire outcome
C	=	Intervention
R	=	Required
O	=	"Below satisfactory" performance
1	=	"Satisfactory" performance
2	=	"Above satisfactory" performance

4.3.1 Individual Performance

Analysis of data on the observation checklist and the questionnaire showed that of the twenty (20) professional nurses who participated in the intervention programme, three (numbers 8, 44, 45) had "satisfactory" performance on the observation checklist but a "below satisfactory" performance on the questionnaire scored during the pre-intervention phase. Outcome scores based on both the observation checklist and the questionnaire showed that fifteen (15) participants demonstrated a "satisfactory" level of performance following the intervention programme. Based on these findings it may be concluded that the intervention programme was effective on fifteen (15) participants and not effective on five participants (Table 36).

4.3.2 Patients' Interview Results

Table 37 Findings on Professional Nurses' performance based on Patients' Interviews

NURSING MEASURE TAKEN	NUMBER OF PATIENTS		
	YES	NO	TOTAL
History taking	13	7	20
Eye inspection	8	12	20
Visual acuity test	12	8	20
Advice given	18	2	20
Referral letter available	10	10	20

Patients were interviewed to determine measures of care they received at clinics before referral. The following results were obtained: Eighteen (18) patients received advice; thirteen (13) had history taken; twelve (12) had their visual activity tested; and ten (10) were given referral letters to eye clinics. Only eight reported that eye inspection was performed. When comparing patients' interviews conducted during a pre-intervention phase (Table 34), the results reveal that the performance was on eye inspection in which only (8) patients indicated that it was performed. These results suggest the effectiveness of the workshop conducted.

4.3.3 Group Performance

To further determine the effectiveness of the intervention programme, post-intervention group performance was evaluated with respect to the three main areas of care namely,

health education, assessment skills, specific eye care skills. Similar to the pre-intervention phase a total of the scores obtained by the group in each specific item (termed 'actual score') was measured against the 'expected score' which consisted of the highest possible number of points in each aspect multiplied by the total number of participants. Because of the difference in the number of points for each item the 'expected score' differed from item to item. To obtain the level of performance a percentage based on the two scores was calculated. For the final outcome the post-intervention percentage score was compared with the pre-intervention percentage score.

a) Health Education

The outcome data on health education at primary level shows an improvement of performance in three items each, from "below-satisfactory" to "above-satisfactory" and "satisfactory" levels respectively. These included nutritional practices, management of care in industry and care of pregnant mothers in the former; and personal hygiene, child care and eye care, motor vehicle drivers in the latter (Table 38). Performance in environmental hygiene, eye strain, and traditional healers persisted at "below satisfactory" level. Although performance did rise to the level of "satisfactory", the actual scores in this latter group of items increased to above their pre-intervention values (Table 38).

The outcome data on health education at secondary level showed improvement in performance from "below satisfactory" to "satisfactory" level in two items namely, care

of eye spectacles and use of eye medications. Although the score obtained improved on the care of contact lenses, a "below satisfactory" level of performance persisted for this item (Table 38).

Table 38 Comparison of Professional Nurses' Group Performance in Pre-intervention and Post-intervention Phases

ACTIVITY	PRE-INTERVENTION %	POST-INTERVENTION %
HEALTH EDUCATION AT PRIMARY LEVEL		
Nutritional aspects	33	75
Environmental hygiene aspects	25	40
Personal hygiene aspects	28	60
Child care	17	65
Eye strain	13	40
Occupational safety	25	80
Pregnant mothers	27	90
Motor vehicle drivers	8	50
Traditional healers	8	30
HEALTH EDUCATION AT SECONDARY LEVEL		
Care of eye spectacles	38	50
Use of eye medication	30	60
Care of contact lenses	21	30
HEALTH EDUCATION AT TERTIARY LEVEL		
Goal for rehabilitation	67	50
Targeted skills during rehabilitation	44	100
Rehabilitation services for adults	22	50
Rehabilitation services for children	8	50
Role players in rehabilitation of the blind		
Identification of roles for each person involved	21	50
Counselling of parents with a blind child	22	60
Counselling on albinism	28	75
Assisting a blind person with walking	22	50

ASSESSMENT SKILLS		
Knowledge of visual acuity test tools	21	50
Knowledge of test tools for illiterate adults	26	60
Knowledge of test tools for illiterate children	21	50
Important factor in visual acuity test results	15	40
History taking	23	50
Equipment used for external ocular examination	16	50
EYE INSPECTION STRUCTURES INSPECTED FOR ABNORMALITIES		
Eye lids	11	40
Conjunctiva	29	75
Cornea	16	30
Anterior chamber	22	85
Pupil	8	50
SPECIFIC EYE CARE MEASURES AT PRIMARY PREVENTION		
Care of a new born infant during delivery	68	100
Care of a premature infant	28	100
Care of a patient on quinine treatment	10	60
SPECIFIC EYE CARE MEASURES AT SECONDARY PREVENTION		
Care of a patient with corneal abrasion	13	30
Care of a patient with a red painful eye	13	50
Care of a patient with an intra ocular foreign body (IOFB)	23	50
Care of a patient with glaucoma	31	25
Care of a patient with a senile cataract	24	50

For tertiary education performance scores showed improvement from "below satisfactory" to "satisfactory" level in 5 items. In three items performance moved from "below satisfactory" level to "above-satisfactory". In the case of one item namely, goals for rehabilitation, a "satisfactory" level was maintained. This might be due to different ratings being given by researcher and research assistants. There was a drop in the score from pre-intervention (67%) to post-intervention (50%). Generally, there was a considerable increase in the level of performance for all three levels of health education, which further suggests the effectiveness of a workshop.

4.3.4 ASSESSMENT SKILLS

Analysis of post-intervention performance with respect to assessment skills, showed an increase of scores in all items. The level of performance moved from "satisfactory" to "above satisfactory" for the item on identification of the most important factor in visual acuity testing. In five items the level of performance moved from "below satisfactory" to "satisfactory". These items required responses pertaining to knowledge of visual testing equipment, knowledge test tools for illiterate adults, knowledge of test tools for illiterate children, history taking, and knowledge of external ocular examination equipment. In one item (interpretation of visual acuity test results) performance remained at "below satisfactory" level with a pre-intervention score of 15% and post-intervention score of 40% (Table 38). This might be due to the fact that visual acuity testing requires most practice which professional nurses practising in general clinics lacked because of inavailability of visual acuity test charts.

Scores on knowledge pertaining to identification of abnormalities of specific eye structures showed that post-intervention performance increased in all five (5) items. Performance in identification of abnormalities on the conjuctiva and anterior chamber increased from "below satisfactory" to "above satisfactory". Performance on identification of abnormalities on the pupil increased from 8% to 50%, that is, from "below satisfactory" to "satisfactory. However, a "below satisfactory" performance level was maintained on identification of the eyelids and corneal abnormalities with a post-intervention level of 40% and 30% respectively.

a) Specific Eye Care Measures

The third primary prevention aspect on the questionnaire was an assessment of knowledge with respect to specific eye care measures. These skills included care of the following: the newborn infant, the premature infant and the patient on quinine treatment. Pre-intervention scores showed "satisfactory" performance for care of the newborn. Post-intervention performance was 100% respectively indicating an "above satisfactory" level of performance in this item. Pre-intervention scores showed a "below satisfactory" performance on the care of the premature infant, and care of the patient on quinine and was 28% and 10% respectively. Performance on care of the premature infant increased to "above satisfactory" level (100%) and that of the patient on quinine increased to a "satisfactory" level of 60%.

4.4 SUMMARY ON GROUP PERFORMANCE

A significant improvement in the level of professional nurses' theoretical knowledge with respect to prevention of blindness and rehabilitation of the blind following a workshop performance showed "satisfactory" performance in four (4) only out of (42) forty-two items (9.5%) of the content, this performance rose to 36 items 86% post-intervention, an intervention undertaken to remedy the poor performance of professional nurses in the prevention of blindness and the rehabilitation of the blind was effective. In contrast, analysis of individual scores which was based on data from both the observation checklist and the questionnaire, suggests that the workshop was effective in the case of fourteen out of twenty cases, giving a success rate of 70%.

Although the two approaches (observation checkline and questionnaire) used to determine the outcome of the intervention suggest the effectiveness of this intervention it is to be noted that this outcome is based on the performance of twenty participants as opposed to forty five who were evaluated during the pre-intervention phase. It also needs to be borne in mind that the group performance outcome given above was based on both practical performance (observation checklist) and theoretical performance (questionnaire). Despite the differences in content, both approaches, to a considerable degree, suggest that the intervention was effective.

Results on patient's interviews (Table 37) also reveal the effectiveness of a workshop. Only one activity (eye inspection) was poorly demonstrated.

CHAPTER 5

5. DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this descriptive study was to gather information in the performance of professional nurses with respect to the prevention of blindness and rehabilitation of the blind. Limitations of the study, conclusions and recommendations are discussed.

5.2 FINDINGS

One of the questions to be addressed was: "Do the lack of facilities at clinics affect professional nurses performance in respect of the prevention of blindness and the rehabilitation of the blind"? It was also assumed that professional nurses working in institutions that lack the necessary facilities for eye care will demonstrate a "below satisfactory" performance in the prevention of blindness and the rehabilitation of the blind. In order to establish facts regarding eye care facilities in clinics, an assessment of the latter was done. The findings revealed a general lack of basic equipment, particularly equipment necessary for dealing with emergency situations such as eye injuries and foreign bodies in the eye and other vision threatening conditions (such as acute angle-closure glaucoma).

Although it is imperative that eye care equipment be in good working order at all times Tuwaijiri (1996), out of five (5) ophthalmoscopes at the general clinics, three (3) were out of order while the two (2) available were not used due to professional nurses' lack of the

necessary skills. It is also of great concern that eight out of eleven clinics assessed did not have the visual acuity chart. The need for availability of equipment is pointed out by Tuwaijiri (1996) who maintains that basic eye care equipment should be made available in all health care centres. The fact that the use of ophthalmoscopes in general clinics was limited to medical practitioners who rarely visited rural clinics and those nurses qualified in Clinical Nursing Science, Health Assessment Treatment and Care, appears to be a contributing factor for the nurses' lack of skills in this respect.

The finding that professional nurses working in general clinics performed at a much lesser extent than their counter parts (both ophthalmic and non-ophthalmic trained who worked in eye clinics), is supportive of this observation. Based on these considerations one would argue that professional nurses afforded relevant exposure to ophthalmic care situations will show better performance in the prevention of blindness and rehabilitation of the blind. That chloromphenicol eye ointment was available in all eleven (11) clinics, and that findings indicate that eye medications were prescribed at a higher level by registered nurses both in eye clinics and general clinics is indicative of the influence of awareness on availability. It is suggested that easy availability of chloromphenicol eye ointment in the clinics increased the chance of its use by the registered nurses.

5.2.1 Health Education

The question to be answered was: "Do professional nurses with no ophthalmic care qualifications but with adequate exposure to ophthalmic care situations demonstrate satisfactory performance towards the prevention of blindness and the rehabilitation of the

blind?" Health education is an important instrument in health promotion (Dennil et. al 1995). It was therefore necessary to evaluate professional nurses on this aspect. The current study shows that ophthalmic trained professional nurses as well as non-ophthalmic trained but working in eye clinics generally performed at a higher level than the non-ophthalmic trained nurses who were not practising in eye clinic settings. This difference in performance is thought to be a result of the nurses in eye clinics being consistently in a situation demanding health education.

It was further discovered that this high performance occurred generally in situations of institutional care as evidenced by the high percentage of participants who rated themselves at the 'not at all' level for indicators 1, 2, 3, 4 and 8 (figures 2, 3 & 4). This performance is on the whole not different from that shown by the non-ophthalmic trained nurses practising in general clinics and those non-ophthalmic trained nurses practising in eye clinics. This observation emphasizes the lack of community based activities like the education of school children on prevention of eye accidents, screening of school children for refractive errors and follow up care for patients with glaucoma, even in the case of ophthalmic trained nurses. This is attributed to lack of facilities for eye care (especially transport) as stated by some participants (Table 35).

Although Perry and Tullo (1990) maintain that the vital work in the prevention of blindness is often done better by nurses because nurses' training and orientation is focussed on the community and patient, and not the disease, findings of this study do not

support this submission. Based on the findings of this study, staff shortage resulting to inadequate time for professional nurses to give health education to patients on prevention of blindness might be a contributory factor to poor performance (Table 35).

The performance by category "C" participants showed a "below satisfactory" performance in all areas of health education pertaining to eye care (primary, secondary and tertiary). This poor performance suggested a lack of awareness by the majority of professional nurses regarding their role in the prevention of blindness and in the rehabilitation of the blind. The "satisfactory" performance in listing of the goals for rehabilitation could be attributed to possessing the theoretical knowledge but not of practical skills. This apparent poor performance by category "C" participants could have implications for nursing education. It appears that generally basic nursing education programmes do not prepare the nurses adequately in areas of eye care as evidenced by the performance of the largest group of the study sample, in area H of the KwaZulu-Natal Province of the Republic of South Africa.

5.2.3 Assessment Skills

The importance of the assessment of eye functioning is illustrated by the following statement; patient assessment is like fitting together the pieces of an important jigsaw. To assess the patient, the nurse needs to put together all the pieces, to give her a clear picture of the patient's condition. She needs to take a good clear history together with the visual

acuity and observation (Perry and Tullo, 1990). He further points out that the clinic can be a highly effective first line of defence against blindness and visual loss in most of the preventable or treatable conditions.

Similar to the performance in health education, category "C" participants showed a lack of knowledge in aspects of visual acuity testing, history taking, equipment used for external ocular examinations and eye inspection. Lack of knowledge on assessment skills was also confirmed by the findings on patients' interviews (Table 34).

Taking into consideration category "B"'s performance in assessment skills, it can be argued that practice and some form of education are instrumental to facilitating acquisition of (such as in-service education), assessment skills. This consideration under scores the importance of exposure to relevant care situations coupled with educational opportunities.

5.2.4 Specific Eye Care Measures

This area required knowledge of measures to be taken in the management of high risk patients, which may lead to blindness, if mismanaged.

At primary level these patients included among others the new born infant, premature infant, and the patient on quinine treatment. Due to the frequency with which these conditions occur and the degree to which management of these conditions is emphasized in nursing education programmes, expectations of good performance in this regard were not unreasonable. Failure by category "C" to perform satisfactorily with respect to the

prevention of blindness in premature infant and management of a patient on quinine treatment is a source of grave concern. According to Vlok (1996) all professional nurses should be knowledgeable about the actions taken to prevent a premature infant from becoming blind due to oxygen therapy, this would prevent blindness due to retrolentalfibroplasia. Ophthalmic trained nurses demonstrated good performance in all four specific skills of primary prevention. This might be a result of having under-gone ophthalmic training and to their subsequent placement in the eye clinic. The findings supported the assumption that professional nurses with ophthalmic care qualifications will demonstrate "satisfactory" performance towards the prevention of blindness and the rehabilitation of the blind.

In order to assess the professional nurses' knowledge of specific eye care measures in the prevention of blindness at secondary level, they were required to identify measures to be taken in managing patients with certain eye conditions. These conditions included corneal abrasions, red painful eyes, intra ocular foreign bodies, glaucoma and senile cataracts. The level of knowledge shown by category "A" participants was "satisfactory" in all specified conditions. On the other hand performance by category "C" was found to be "below satisfactory" level in all specified conditions, suggesting a deficit caused by the lack of formal ophthalmic training. That category "B" performed at a level "below satisfactory" in four (4) of the six (6) conditions is a further indication that the formal ophthalmic training or alternatively in-service education, is necessary to provide the required specific knowledge. The need for some form of training (such as in-service education) of clinic nurses in primary eye care is advocated by Cook, Knight & Crofton-Briggs (1992).

Since no in-service education programs on eye care existed at the clinics under study, it is assumed that the poor performance by category "B" and "C" participants in the prevention of blindness, might be a direct result of the lack of in-service education.

In relation to answering the question, "Do ophthalmic trained professional nurses who work in non-eye clinic settings demonstrate a level of performance that is "below satisfactory" in the prevention of blindness and the rehabilitation of the blind?" The findings showed that the performance of one ophthalmic trained nurse, who participated in non-eye clinic setting was deficient. Due to the fact that there was only one (1) ophthalmic nurse who practised in a general clinic, this finding may not be generalised.

The fact that the non-ophthalmic trained nursed placed in eye clinic settings performed equally well as their ophthalmic trained counterparts who practised in similar situations suggests that "satisfactory" performance is also influenced by exposure to relevant situations. This outcome raises a concern regarding the appropriate placement of nurses with ophthalmic training. As pointed out by Cook, Knight & Crofton-Briggs (1992) of the 30 ophthalmic career trained nurses of KwaZulu-Natal only three (3) practised in rural eye care services. It is suggested that since the general clinics are poorly oriented to the issue in blindness prevention, they do not provide the necessary climate for growth in the ophthalmic career while at the same time leading to the loss of skills already possessed. With this statement in mind, it can be argued that placement of ophthalmic trained nurses in general clinics, without supportive workshops and without the required equipment and transport facilities is counter productive to rendering effective preventive eye care.

This does not imply that ophthalmic trained nurses should not be placed in general clinics at all, but to point out the benefit that may be derived from the proper utilization in these settings. As pointed out by Waterman et. al. (1995), in order for the nurses to render quality patient care, nursing resource planning authorities should ensure that nurses are placed according to their qualifications and areas of interest.

It is argued here that success in the prevention of blindness can only be achieved if professional nurses with ophthalmic qualification are placed strategically in both general and eye clinics, to allow for their own development and the development of those around them. This should enable nurses with expertise in eye care to educate other nurses to render more effective preventive eye care health services.

The submission that well supported ophthalmic trained nurses can be useful in developing those around them is supported by the findings of this study. The fact that non-ophthalmic trained nurses who practised in eye clinics performed equally well as their ophthalmic trained counter parts suggest that the former benefited from working alongside the latter. In short, this means that performance by non-ophthalmic trained nurses in the eye clinic was influenced by the environment in which they were working. From this, it can be deduced that constant practice in eye care situations enhances the nurses' level of performance in the prevention of blindness and in the rehabilitation of the blind.

Observations on general clinics indicate that eye care, particularly at primary care level, is still not accorded the emphasis and attention it deserves. It has also been observed that a patient with eye problems is viewed as an odd individual whose problems can be dealt

with only at the eye clinic. The inavailability of the necessary resources at the general clinics contributes to the low standard of care received by patients in need of eye care. Thylefors (1991) stated that human resources in developing countries is a complex issue, since competent and suitably qualified nurses are not only scarce but also unevenly distributed. The even distribution of ophthalmic trained nurses provided with the necessary support services, will benefit even those areas where eye care is currently most neglected. However, the need for more nurses to be formally prepared for rendering effective ophthalmic care services coupled with the need for providing basic eye equipment at the general clinics also needs to be addressed.

It was assumed that "the extent of performance in the prevention of blindness and the rehabilitation of the blind will be higher in professional nurses with relevant exposure to ophthalmic care situations". Although the study findings generally indicate that ophthalmic trained nurses practising in eye clinics demonstrate better performance in the prevention of blindness and rehabilitation of the blind, this was not true in the case of community based activities. Findings showed that high percentages of both ophthalmic trained as well as non-ophthalmic trained professional nurses obtained a 'not at all' performance rating with respect to the primary, secondary and tertiary prevention activities performed outside the clinic setting. These activities included:

1. Conducting in-service education to health care workers
2. Education of the community on daily general eye care
3. Screening of school children for refractive errors
4. Home/ community follow-up care for patients with glaucoma

Taking into consideration that most causes of blindness are preventable, and that loss of vision is irreversible in most cases, a shortcoming of this nature in eye care causes great concern. This situation seems to emphasize the entrenchment of the curative approach in eye care at the expense of preventive eye care.

Considering the reasons given by the professional nurses regarding the shortcomings in their community activities performance (staff shortage, lack of time and transport) attention should be turned towards strategies for better planning of patient care resources as pointed out by Waterman et. al., (1995). The findings are supported by Perry & Tullo (1990) who maintains that professional nurses offer more curative eye care services. They maintain that throughout the world, medical resources are mostly used for treatment rather than for prevention of disease. They further emphasize that community health and preventive medicine are neglected both by governments and individual health workers.

It was evident from the study that eye care and guidance on eye health in region H of KwaZulu-Natal is not within the context of primary health care. Professional nurses need to be formally or informally educated on primary eye care so that they are able to render simple preventive and promotive health service in eye care at clinic and at community level. (Thylefors, 1991). The transport for other community health services (such as psychiatric health services) is available in region H of KwaZulu-Natal but not available for community eye care services. This indicate that eye care is neglected and is not taken as a priority especially by health service planners. Prevention of blindness and the rehabilitation of the blind may not be effectively performed by professional nurses practising at the clinics if basic eye care resources are insufficient. This is further supported by Thylefors (1991)

who pointed out that some of the constraints to rendering more effective blindness prevention services indicate the insufficient or irrational use of available resources and the failure to improve basic eye care facilities.

The study revealed that professional nurses at the clinics provide curative eye treatments at the clinics (eye clinics and general clinics) to patients who present with eye problems. The findings, therefore, revealed that professional nurses provide services which can prevent blindness at secondary level of prevention. This was evidenced by the high extent of eye medication prescriptions by both ophthalmic and non-ophthalmic trained nurses at the clinics. This could indicate that the professional nurses attempted to render eye care to the patients who reported eye problems rather than giving health education on basic preventive measures such as hygiene and nutrition. The reasons given by professional nurses for these prescriptions included that the education of children on the prevention of accidents is given when they present with eye injuries, but that eye medication is always prescribed for patients presenting with eye disorders. These reasons could suggest that the role of nurses in eye care is institutional and curative, rather than preventive.

Apart from prescribing eye medications and inadequate rendering of community based services, the extent of performance of professional nurses practising at the general clinics, was perceived to be at a generally low level. This could indicate that health service planners inadequately provide for eye care services in region H of KwaZulu-Natal. There was ineffective utilisation of ophthalmic trained nurses as they were unable to reach the communities needing preventive eye health care activities and also not distributed to general clinics. The International News of Swaziland (1990), highlighted that ophthalmic

trained nurses visit outreach clinics to give primary health care lectures pertaining to the prevention of blindness before treating patients. This is not the case in KwaZulu-Natal Region H clinics.

It was assumed that "creating awareness for the professional nurses' role in the prevention of blindness and the rehabilitation of the blind will improve their performance." The findings supported the assumption. After attending a workshop programme, the participants demonstrated "satisfactory" performance in most aspects on the areas of health education, assessment skills, and specific eye care measures. However, it was evident from the study that some participants still demonstrated a "below satisfactory" level of aspects such as giving health education on environmental hygiene, eye strain and care of contact lenses.

It was therefore evident from the study that some form of education (formal or informal) professional nurses' performance in the prevention of blindness and the rehabilitation of the blind is to be improved. This is supported by Thylefors (1990) who stated that, in order to prevent blindness, it is necessary to initiate projects for the training of staff providing eye care services.

It was therefore concluded that the low level of performance indicated by professional nurses could have been aggravated by inadequate provision of eye care services throughout region H of KwaZulu-Natal. Health service planners should therefore view eye care as part of primary health care as advocated by Thylefors (1991). Viewing eye care as part of primary eye care may improve professional nurses' level of performance

in the prevention of blindness and the rehabilitation of the blind, which will benefit not only the health care consumers, but ultimately all the people of the province. By preventing blindness the quality of life of the Province's citizens can be immeasurably enhanced - mainly through mere effective health care services, primarily including eye services.

5.3 LIMITATIONS OF THE STUDY

The limitations of the study are as follows:

1. The study was confined to the professional nurses practising in KwaZulu-Natal region H clinics. Therefore, the findings might not be generalisable to other professional nurses practising in other regions of the province, or the country.

2. The study sample consisted of three (3) ophthalmic trained nurses, of whom two (2) practised in eye clinic settings and one (1) practised in a general clinic. Their performance may not be generalised to other ophthalmic trained nurses because of the extremely small number of participants in this category.

3. The sample consisted of forty nine (49) females and one (1) male. The findings are therefore based mainly on the responses of the female professional nurses. It may, therefore, be argued that the findings would have revealed a different picture if there was equal gender distribution of the participants. However, the nursing profession in the Republic of South Africa consists predominantly of women.

4. Out of forty five (45) professional nurses who demonstrated a "below satisfactory" performance during the pre-intervention phase, only twenty (20) attended a workshop and participated in the post-intervention phase. Probably the performance would have reflected a different picture if they had all participated in the education sessions provided.

5.4 RECOMMENDATIONS FOR THE STUDY

Based on the findings of this study, it is recommended that:

1. Education and training (formal and informal) in primary eye care should be provided to clinic nurses in order to enhance nurses' awareness of their role in the prevention of blindness and in the rehabilitation of the blind. This recommendation arises from the improved performance demonstrated by professional nurses working in non-eye clinical settings subsequent to attending the workshop offered as part of this research.

2. If possible, some professional nurses should receive formal training in ophthalmic nursing in order to increase the number currently available. This will facilitate the distribution and effective utilisation of ophthalmic trained nurses in areas where eye care is most needed. Ideally, at least one ophthalmic trained nurse in a general clinic should be available for educating the other nurses and for providing eye care services. Ophthalmic qualified nurses should be allocated in general clinics (at least one in each clinic) with the necessary support services so that those areas

where eye care is neglected can benefit from their knowledge and expertise.

3. Preventive, curative and rehabilitative eye care services provided by professional nurses in eye care clinics and in general clinics, should be extended to the community. Activities such as community education on daily general eye care, screening of school children for refractive errors; home/ community follow up care for patients with glaucoma, eye surgery, eye infection and trauma should be provided to enhance the community's eye health care status.

4. Transport facilities should be provided for community-based eye care services. Alternatively, the community health services should be re-organised so that more comprehensive health services, including eye care, can be provided with the available transport facilities.

5. Internal hospital policies, standing orders or guidelines pertaining to the management and referral procedure of patients presenting with eye emergencies and other vision threatening conditions should be made available. The guidelines will facilitate the activities of professional nurses and will also save the patient's sight, which might be lost due to the lack of knowledge leading to a delay in referring the patient for expert treatment.

6. In order to improve the delivery of eye care services in rural areas of KwaZulu-Natal further research should be conducted in the whole province to:

- Identify the role of all professional nurses in eye care;

- Identify the factors that act as constraints in the execution of the professional nurses' role in eye care with particular emphasis on the prevention of blindness and the rehabilitation of the blind.

- Assess the utilisation of ophthalmic qualified nurses working in health care services.

- To compare the delivery of eye care services in health institutions with ophthalmic qualified nurses with those without.

5.5 CONCLUSIONS

Conclusions drawn from the study reveal the following:

- That professional nurses with no ophthalmic care qualifications working in general clinics perform at a much lesser extent than their counterparts who practise in eye clinics with respect to the prevention of blindness and the rehabilitation of the blind.

- Professional nurses, both ophthalmic and non-ophthalmic trained, but working in eye clinics demonstrate "satisfactory" performance.

- Lack of eye care equipment in general clinics probably contributes to professional nurses' "below satisfactory" level of performance with respect to the prevention of blindness and the rehabilitation of the blind.

- Community-based eye care services are inadequately rendered by both ophthalmic trained and non-ophthalmic trained professional nurses; probably due to lack of transport facilities and staff shortage.

- Professional nurses practising in eye clinics as well as in general clinics provide curative eye care services in patients presenting with eye problems.

- Education and training (formal and informal) of professional nurses practising in general clinics improves their performance in the prevention of blindness and the rehabilitation of the blind.

The findings of this study revealed that professional nurses working in general clinics (which lack basic eye care equipment) performed at a much lesser extent than their counter parts who practised in eye clinics.

It was evident from the study that professional nurses with ophthalmic care qualifications, who practised in eye clinics, demonstrated "satisfactory" levels of performance. One participant with the same qualification, who did not practise in eye clinics, demonstrated "below satisfactory" level of performance when compared to non-ophthalmic trained nurses who practised in clinics rendering eye care services.

The findings revealed that professional nurses with no ophthalmic qualification who worked in eye clinics as well as the ophthalmic trained nurses who also worked in eye clinic settings performed at "satisfactory" level with respect to the prevention of blindness and the rehabilitation of the blind. This performance was probably due to their constant practice in eye care situations and that they worked alongside the ophthalmic qualified nurses who could teach them. The relevant exposure to eye clinics, and not necessarily the ophthalmic care qualification, seemed to contribute towards a better performance of professional nurses in the prevention of blindness and in the rehabilitation of the blind.

The extent of performance in the prevention of blindness and rehabilitation of the blind was also higher in professional nurses with relevant exposure to ophthalmic care situations than in those without such exposure. The findings showed that the extent of performance with respect to the primary, secondary and tertiary prevention activities performed outside the clinic setting were performed at a "below satisfactory" level with both ophthalmic trained and non-ophthalmic trained professional nurses with a 'not at all' performance rating.

The findings also revealed that informal education on eye care given to professional nurses at the clinics improves performance and creates their awareness on the prevention of blindness and the rehabilitation of the blind.

LIST OF REFERENCES

Adams, J., 1990 Parent-Support Groups. Imfama 8. 30 (December): 8 - 9.

Allen, M.N. 1989. The meaning of visual impairment to visually impaired adults. Journal of Advanced Nursing 16(8): 640 - 646.

Berry, J., 1991. The New Natal Society for the Blind. Imfama 31 (April): 7 - 8.

Bettie, A., Gott, M. & Jones, 1993. The setting for a new public health. London: MacMillan.

Boyd-Monk, H. & Steinmetz, III, C. 1987. Nursing care of the eye. California, Appelton & Lange .

Chana, H.S., Schwab, L. & Foster, A. 1994. With an eye to good practice: Traditional healers in rural communities. World Health Forum, 15 (2): 144 - 146.

Cook, C.D., Knight, S.E. & Crofton-Briggs, I. 1992. Prevalence and causes of low vision and blindness in Northern KwaZulu. South African Medical Journal. 83 : 590-593.

Cook, C.D., Stulting, A.A. 1995. Prevalence and incidence of related cataract blindness, in rural areas of South Africa. South African Medical Journal, 85 (1): 26 - 27.

Cooper, J. 1996. Improving compliance with glaucoma eye-drop treatment. Nursing Times, 2(32): 36 - 37.

Dennil, K; King, L; Lock, M. & Swanepoel, T. 1995. Aspects of primary health care. Durban: Southern.

Dewar, S. 1990. Rehabilitation nursing: The state of the art: Curations, 13(3 & 4): 62-64.

Dittmar, S. 1989. Rehabilitation process and application. St Louis: C.V. Mosby.

Ellwiein, L.B. & Kupfer, C. 1995. Strategic issues in preventing cataract blindness in developing countries. World health organisation, 73 (5): 681 - 690.

Goodwill, C.J. & Chamberlain, M.A. 1990. Rehabilitation of the physically disabled adult. London: Sheridan Medical Books.

Gumbi, R.V. 1987. The community health nurse in rural health services in KwaZulu. Unpublished Doctoral Research Study.

Green, A. 1994. An introduction to health planning in developing countries. Oxford: Open University Press.

Greenblatt, S.L. 1988. Physicians and chronic impairment: A study of ophthalmologists' interaction with visually impaired and blind patients. Journal of Social Science and Medicine, 26 (4): 393 - 399.

Hennig, A., Foster, A., Shresta, S.P. & Pokhrel, R.P. 1991. Vitamin A deficiency and corneal ulceration in South East Nepal: Implications for preventing blindness in children WHO Bulletin, 69 (2): 235-239.

International News, Swaziland, (1990). Prevention of blindness in the Kingdom. Imfama 30 (June) 26-27.

Hollins, M. 1989. Understanding blindness: An integrated approach. New Jersey: Lawrence and Erlbaum.

Kelly, J.S. 1993. Visual impairment among older people. British Journal of Nursing 2(2): 110-116.

Kemp, N.D. 1985. The role of the employer in providing rehabilitation services. Rehabilitation in South Africa, 29 (1-4): 15-15.

Kirton, M & Richardson, M. 1987. Ophthalmic Nursing. 3rd edition. London; Bailliere Tindall.

Klaus, V. & Adala, H.S. 1994. Traditional herbal eye medicine in Kenya. World Health Forum 15(2): 138 - 143.

Limburg, H., Vaidyanathan, K. & Dalal, H.P. 1996. Prevention of blindness. Cost-effective screening of school children for refractive errors. World Health Forum, 16: 173-177.

Longman Dictionary of contemporary English: 1991: United Kingdom: Longman.

Long, B.C. & Phipps, W. 1989. Medical-surging nursing: A nursing process approach, 2nd edition; St Louis: C.V. Mosby.

McCarty, C.A., Lee, S.E., Livingstone, P.M., Bissinella, M. & Taylor, H.R. 1996. Ocular exposure to UV-B in sunlight: the Melbourne visual impairment project model. World Health Organisation. 74 (4): 353-360.

McKendrick, B.W. & Leketi, M. 1990. Politics and human welfare: Retinitis pigmentosa in South Africa. Imfama 30 (December): 26-27.

Memoranda. 1991. Use of intraocular lenses in cataract surgery in developing countries: memorandum from WHO meeting. WHO Bulletin, 69 (6): 657 - 666.

Meyer, D. 1997. Ophthalmic neonatorum prophylaxis - can we do it more cost-effectively? South African Medical Journal, 87(4): 471 - 472.

Minassian, D.C., Mehra, V., & Johnson, G.J. 1992. Mortality and cataract: Findings from a population-based longitudinal study. WHO Bulletin 70 (2) 219-223.

M'Jamtu-Sei, N. 1996. Health promotion. Health information for the grass roots. World Health Forum. 17(C): 277-279.

Mountford, F. 1990. Community nursing looks ahead. Nursing RSA. 5(1): 41-43.

Murray, A.D. 1991. Ophthalmic Medical Assistants. Imfama 31 (August): 9 - 10.

Newland, H.S., Harris, M.F. Walland, M, McKnight, D, Galbraith, J.F.K., Lwasaki, W. & Momomura, K. 1992. Epidemiology of blindness and visual impairment in Vanuata. WHO Bulletin 70 (3): 369-372.

News from Africa, 1981. Prevention of blindness and primary eye care. WHO Chronicle 35 (5): 149-151.

Perry, J.P. & Tullo, A.B. 1990. Care of the ophthalmic patient. Second edition. London: Chapman & Hall.

Phipps, W.J.; Long, B.C. & Woods, N. 1987. Medical-surgical nursing. 3rd ed;: St Louis: Washington . The C.V. Mosby Company.

Pillay, P. 1995. What does the future hold for special schools? Imfama 35 (August). 8

Pocket Oxford English Dictionary 1992 . Oxford : Dictionaries

Polit, D & Hungler, B. 1987. Nursing research principles and methods. 3rd edition; Philadelphia: J.B. Lippincott.

Rendall, K. 1990. The move towards urban community based rehabilitation. Imfama: 30 (August): 2-4.

Rheeder, P. & Sieling, W.L. 1991. Acute persistent quinine-induced blindness: A case report.

South African Medical Journal 79 (May): 563 - 564.

Salmon, J.F. & Martell, R. 1994. The role of ethnicity in primary angle-closure glaucoma. South African Medical Journal 84 (9): 623 - 626.

Schwab, L. 1987. Primary eye care in developing nations. Oxford University Press.

South African Nursing Council 1995. Guidelines for the course leading to registration as a nurse (general, psychiatric, community) and midwife. Pretoria: SANC.

South African Nursing Council 1997. Statistics on post-basic qualifications. Pretoria: SANC.

South African Nursing Council Regulations. Pretoria: SANC.
R425 of February 1985 as amended.
R83 of January 1970 as amended.

Sussman, D. 1987. Low vision services required in order to ensure the successful rehabilitation partially sighted people. Imfama: 27 (February): 3 - 5.

Talbot, L.A. 1995. Principles and practice of nursing research. London: C.V. Mosby.

Taylor, H.R., Katala, S, Munoz, B & Turner, V. 1991. Increase in mortality associated with blindness in rural Africa. WHO Bulletin 69 (3): 335-338.

Thylefors, B. 1991. Prevention: Much blindness is avoidable. World Health Forum, 12(1): 78-85.

Thylefors, B., Negrel, A.D., Pararajasegaram, R., & Dadzie K.Y. 1995. Global data on blindness. WHO Bulletin 73 (1): 115 - 121.

Transport - Phelophepha News, 1997. Transnet Phelophepha: The worker's First Health care

train: Pretoria.

Treece, E.W. & Treece, J.W. 1982. Elements of research in nursing. Saint Louis Mosby.

Tuwaijiri, A.A.J. 1996. Looking after eyes: the primary task. World Health Forum 17 : 21 - 24.

Van Bogaert, L.J. 1997. Controversies in the approach to ophthalmic neonatorum. South African Medical Journal, 87 (1): 76 - 79.

Van der Walt, S.J. & Lombard, P. 1987. Opacified view of statistics on visual impairment in South Africa. Imfama. 27 (December): 2 - 8.

Vaughan, D., Asbury, T. & Tabbara, K.G., 1989. General ophthalmology. Prentice-Hall: International Inc.

Vlok, M.E. 1991. Manual of community nursing and psychiatry. Cape Town: Juta.

Vlok, M.E. 1996. Manual of community nursing and psychiatry. Cape Town: Juta.

Waterman, H., Hope, K.W., Beed, P., Clayton, E., McQueen, L. Owen, G., Stott, M. & Studley, M. 1995. The nature of ophthalmic service and education and qualification of nurses - a national survey. Journal of Advanced Nursing, 22 (5): 914 - 920.

Watkinson, S. 1989. Visual handicap in childhood. Nursing. 3(45) : 13 - 18.

WHO in Action. 1994. Most blindness is preventable. World Health. 47 (5): 30.

WHO News and Activities. 1992. Prevention of blindness. WHO Bulletin. OMS: 70 : 136 - 137.

Zungu B.M. 1993. Assessment of the life experiences of visually impaired adults in the Empangeni region of KwaZulu. Curations, 16 (4): 38 - 42.

APPENDIX "A"

OBSERVATION CHECKLIST

TOPIC : PREVENTION OF BLINDNESS - A NURSING APPROACH

OBJECTIVES TO ATTAINED

1. To determine the professional nurses' ability to identify risk factors requiring nursing intervention in the prevention of blindness.

2. To establish the professional nurses' ability to perform nursing skills with respect to prevention of blindness.

3. To determine the extent to which professional nurses are able to perform skills with respect to the prevention of blindness and the rehabilitation of the blind.

4. To determine the effect of relevant workshop education on the performance of professional nurses with respect to the prevention of blindness and the rehabilitation of the blind.

PURPOSE OF THE CHECKLIST

1. Pre-intervention :

   - To determine the skills possessed by professional nurses in order to identify those that need intervention.

2. Post- intervention :

   - To re-evaluate professional nurses' skills following in-service education (whether outcomes are positive or negative).

SECTION A

MATERIAL RESOURCES AVAILABLE FOR USE BY PROFESSIONAL NURSES

1. EQUIPMENT

	AVAILABLE	NOT AVAILABLE
1.1 Torch and batteries		
1.2 Visual acuity chart(s)		
1.3 Ophthalmoscope		
1.4 Minor surgical set		
1.5 Eye speculum		
1.6 Schiotz tonometer		

2. COMMON EYE MEDICATION

	AVAILABLE	NOT AVAILABLE
1.1 **EYE OINTMENTS**		
1.1.1 Tetracyclines		
1.1.2 Sulfacetamide		
1.1.3 Chloramphenicol		
2.1 **EYE DROPS**		
2.1.1 Sulfacetamide		
2.1.2 Chloramphenicol		
2.1.3 Gentamycin		
2.1.4 Artificial tears		
2.1.5 Local anaesthetic		

3. OTHER MATERIAL

	AVAILABLE	NOT AVAILABLE
3.1 Dyes (Flourescein drops/strips, etc)		
3.2 Eye wash solution		
3.3 Eye pads		

4. Policy, standing orders or guidelines for the management of eye emergencies or other complicated eye problems.

SECTION B

PERFORMANCE OF NURSING SKILLS

1. HEALTH EDUCATION AT PRIMARY LEVEL

Does a professional nurse advice clients on the following:

	YES	NO
1.1 **Aspects on nutrition**		
1.1.1 Brown bread, brown rice, cereals		
1.1.2 Yellow vegetables e.g. pumpkin		
1.1.3 Green leafy vegetables		
1.1.4 Mangoes, tomatoes, citrus fruits		
1.1.5 Animal foods e.g. liver and dairy products		
1.2 **Aspects on environmental hygiene**		
1.2.1 Building of toilets		
1.2.2 Refuse disposal		
1.2.3 Safe water supply		
1.2.4 Adequate housing		
1.2.5 Control of vectors (e.g. flies)		
1.3 **Aspects on personal hygiene**		
1.3.1 Handwashing after toileting and urinating		
1.3.2 Handwashing before touching eyes		
1.3.3 Not to share face cloths and towels		
1.3.4 Avoid use of soiled wash cloths		

1.3.5	Caution when using cosmetics such as hair sprays		
1.4	**Advice on child care**		
1.4.1	Immunization of children		
1.4.2	Supervision of children not to play with dangerous material		
1.4.3	Early recognition, identification and reporting children with visual disturbances		
		YES	NO
1.5	**Advice to pregnant mothers**		
1.5.1	Avoid unprescribed drugs during pregnancy		
1.5.2	Avoid contact with persons suffering from rubella/viral infections		
1.5.3	Take a well balanced diet		
1.5.4	Seek medical advice for any abnormal vaginal discharge		

2. HEALTH EDUCATION AT SECONDARY LEVEL

Does professional nurse give health education to clients/patients on the following:-

		YES	NO
2.1	Care of eye spectacles		
2.2	Care of contact lenses		
2.3	Use of eye medication		
2.4	General symptoms		
2.5	Early reporting of an eye problem		
2.6	Importance of follow up care for patients with:		
	2.6.1 Glaucoma		
	2.6.2 Progressive visual loss		

	2.6.3 Diabetes mellitus		
	2.6.4 Hypertension		

3. HEALTH EDUCATION AT TERTIARY LEVEL (REHABILITATION)

Does the professional nurse:-

		YES	NO
3.1	Counsel the blind and his family		
3.2	Counsel clients/patients with progressive visual loss		

SECTION C

1. ASSESSMENT SKILLS

		YES	NO
1.1	History taking		
1.2	Recording of history taken		
1.3	Testing of visual acuity		
1.4	Recording of visual acuity results		
1.5	Interpretation of results to the patient/client		
1.6	Performing eye examination systematically		
1.7	Testing visual acuity for the clients/patients with:		
	1.7.1 Diabetes mellitus		
	1.7.2 Hypertension		

1.8	Is a professional nurse able to identify clients with the following:		
	1.8.1 Glaucoma (raised intraocular pressure)		
	1.8.2 Cataract (lens opacity)		

SECTION D

1. NURSING INTERVENTION

Does the professional nurse perform the following activities:

		YES	NO
1.1	Identification of patients for emergency care		
1.2	Care of clients with eye injuries		
1.3	Removal of superficial foreign bodies in the eye		
1.4	Care of clients with intraocular foreign bodies		
1.5	Prescribe medication for patients with common eye infections		
1.6	Refer patients with complicated eye disorders for expert advice		

Number of Points = 50

APPENDIX "B"

QUESTIONNAIRE TO PROFESSIONAL NURSES PRACTISING IN RURAL HEALTH SERVICES OF KWAZULU-NATAL REGION H

TOPIC PREVENTION OF BLINDNESS : A NURSING APPROACH

The questionnaire is divided into six sections. The sections are designed to gather:

A. Biographic information.

B. Information of professional nurses' ability to identify risk factors requiring nursing intervention in the prevention of blindness.

C. Information on the ability of professional nurses to perform nursing skills with respect to prevention of blindness and rehabilitation of the blind.

D Information on the ability of the professional nurses to perform assessment skills with respect to eye disorders.

E. Information on the ability of the professional nurses to perform relevant nursing skills with respect to prevention of blindness.

F. Information on the extent to which professional nurses are able to perform nursing activities related to prevention of blindness and rehabilitation of the blind.

OBJECTIVES TO BE ATTAINED

1. To determine the professional nurses' ability to identify risk factors requiring nursing intervention in the prevention of blindness.

2. To establish the professional nurses' ability to perform nursing skills with respect to the prevention of blindness

3. To determine the extent to which professional nurses are able to perform skills with respect to the prevention of blindness and the rehabilitation of the blind.

4. To determine the effect of the relevant workshops' education on the performance of professional nurses with respect to the prevention of blindness and the rehabilitation of the blind.

SECTION A

DEMOGRAPHIC DATA

Please supply the following particulars. Respond by ticking [✓] in the correct space.

1. Sex

Female	
Male	

2. How were you prepared for basic nursing education

Diploma	
Degree	

3. Post basic clinical qualification

Diploma in Ophthalmic Nursing science	
Any other: Specify	

4. For how many years have you been practising as a professional nurse?

1 - 5 years	
6 - 10 years	
11 - 15 years	
16 years and longer	

SECTION B

INFORMATION ON PROFESSIONAL NURSES' ABILITY TO IDENTIFY RISK FACTORS THAT CAUSE BLINDNESS

1. Identify risk factors that may lead to blindness which should be attended at the following levels of prevention:-

1.1 PRIMARY PREVENTION

.....

.....

.....

.....

1.2 SECONDARY PREVENTION

.....

.....

.....

.....

1.3 TERTIARY PREVENTION

.....

.....

.....

.....

SECTION C

INFORMATION ON THE ABILITY OF PROFESSIONAL NURSES TO PERFORM NURSING SKILLS WITH RESPECT TO PREVENTION OF BLINDNESS AND REHABILITATION OF THE BLIND

1. PRIMARY PREVENTION

1.1 What aspects do you emphasize when giving health education to clients withe respect to prevention of blindness on the following:

1.1.1 Nutrition aspects

.....

.....

.....

.....

1.1.2 Environmental hygiene aspects

.....

.....

.....

1.1.3 Personal hygiene practices

.....

.....

.....

.....

1.1.4 Child care

.....

.....

.....

.....

1.2 What specific advice do you give to the following community members with respect to prevention of blindness at primary level?

1.2. Students complaining of eye strain

.....

.....

.....

.....

1.2.2 Occupational safety

.....

.....

.....

.....

1.2.3 Pregnant mothers

.....

.....

.....

1.2.4 Motor vehicle drivers

.....

.....

.....

.....

1.2.5 Traditional healers

.....

.....

.....

.....

1.2.6 Secondary prevention

Inadequate knowledge of clients on proper use and care of prescribed material for treating eye disorders can lead to blindness.

2.1.1 Care of eye spectacles

.....

.....

.....

.....

2.1.2 Cleaning and storage of eye contact lenses

.....

.....

.....

.....

2.1.3 Use of eye medication

.....

.....

.....

.....

3. TERTIARY PREVENTION (REHABILITATION)

3.1 What is the main goal to be achieved in the rehabilitation of the blind person?

.....

.....

.....

.....

3.1.1 Indicate the important skills that need to be developed on a blind person during rehabilitation

.....

.....

.....

.....

3.1.2 Indicate the rehabilitation service available for the blind adult persons in KwaZulu-Natal.

.....

.....

.....

.....

3.1.3 List rehabilitation services available for blind children in KwaZulu-Natal.

.....

.....

.....

.....

3.1.4 Besides the nurses, who else would you involve in the rehabilitation of the blind person?

.....

.....

.....

.....

3.1.5 What is the role of each of the persons you have given in 3.1.4 in the rehabilitation of the blind person?

.....

.....

.....

.....

3.2 What specific aspects do you give attention to when counselling parents of children presenting with the following problems:

3.2.1 A born blind child

.....

.....

.....

.....

3.2.2 A child with albinism

.....

.....

.....

.....

3.2.3 A person seeking information on how to assist his newly blind relative on walking around relevant areas

.....

.....

.....

.....

SECTION D

INFORMATION ON THE ABILITY OF THE PROFESSIONAL NURSES TO PERFORM ASSESSMENT SKILLS WITH RESPECT TO EYE DISORDERS

1. VISUAL ACUITY TESTING

1.1 List test tools used for testing visual acuity at your clinic

.....

.....

.....

.....

1.2 LIST TEST TOOLS THAT YOU WOULD USE OF TESTING VISUAL ACUITY FOR

1.2.1 An illiterate client

.....

.....

.....

.....

1.2.2 A young child (who cannot read)

.....

.....

.....

.....

1.2.3 What is the most important factor to be observed when testing for visual acuity?

.....

.....

.....

.....

1.2.4 A client is referred to your clinic with a note indicating that his visual acuity is VA = RE 6/60 and LE PL. How would you interpret his visual acuity to his relative?

.....

.....

.....

.....

2. HISTORY TAKING

2.1 List common eye complaints that should be enquired from a patient on history taking

.....

.....

.....

.....

3. EXTERNAL OCULAR EXAMINATION

3.1 What equipment do you use for performing external eye examination?

.....

.....

.....

.....

3.2 List common abnormalities that you must look for when inspecting the following external ocular structures:

3.2.1 Eyelids

.....

.....

.....

.....

3.2.2 Conjunctiva

.....

.....

.....

.....

3.2.3 Cornea

.....

.....

.....

.....

3.2.4 Anterior chamber

.....

.....

.....

.....

3.2.5 Pupil

.....

.....

.....

.....

SECTION E

INFORMATION ON THE ABILITY OF THE PROFESSIONAL NURSES TO PERFORM RELEVANT NURSING SKILLS WITH RESPECT TO PREVENTION OF BLINDNESS

1. PRIMARY LEVEL

State the most important nursing action(s) you would undertake in the following:-

1.1 Prevention of blindness to a newborn during delivery

.....

.....

.....

.....

1.2 Prevention of blindness to an unconscious patient

.....

.....

.....

.....

1.3 Prevention of blindness to a premature infant

.....

.....

.....

.....

1.4 Prevention of blindness to a patient on quinine treatment

.....

.....

.....

.....

1.5 Prevention of blindness due to acquired cataract

.....

.....

.....

.....

2. SECONDARY LEVEL

Please respond by making a tick [✓] in the appropriate space.

2.1 Blindness prevention should be commenced when the client presents with eye problems at the health service.

True	
False	

2.2 The role of the professional nurse in assessing eye conditions involves history taking and physical examination of the eye

True	
False	

2.3 State the most important nursing action(s) that you would undertake in the following:

2.3.1 Prevention of blindness from a patient presenting with a corneal abrasion

.....

.....

.....

.....

SECTION F

INFORMATION ON THE EXTENT TO WHICH PROFESSIONAL NURSES ARE ABLE TO PERFORM NURSING ACTIVITIES RELATED TO PREVENTION OF BLINDNESS AND REHABILITATION OF THE BLIND

Answer each question by making a tick [✓] in the appropriate item block, unless otherwise stated. The following activities must indicate the extent to which you perform the nursing activity in the following :

Use only one key :

1 = Not at all

2 = Minimally (the least possible)

3 = Reasonably (more of less than expected)

4 = Considerable (significantly more time is spent on this aspect)

5 = A great deal (beyond the ordinary to a large extent)

1. PRIMARY PREVENTION

1.1 To what extent do you perform the following nursing activities in respect to prevention of blindness.

	1	2	3	4	5
1.1.1 Conducting in-service education to health care workers in your hospital/clinic					
1.1.2 Education to the community on daily general eye care					
1.1.3 Education of school children on prevention of eye accidents					

1.1.3 Give reason(s) for your performing at the stated level

.....

.....

.....

.....

2. SECONDARY PREVENTION

2.1 To what extent do you perform the following nursing activities in relation to prevention of blindness?

	1	2	3	4	5
2.1.1 Screening of school children for refractive errors					
2.1.2 Prescribing eye medication for common eye disorders					

2.1.3 Assessment of patients presenting with diabetes mellitus for visual disturbances					
2.1.4 Testing of visual acuity for all patients reporting general ill-health					

2.1.5 Give reason(s) for your performing at the stated levels

.....

.....

.....

.....

3. TERTIARY PREVENTION (REHABILITATION)

3.1 To what extent do you perform the following activities in relation to revention of blindness:

	1	2	3	4	5
3.1.1 Home/community follow-up care for patients with					
3.1.2 Giving psychological support to the blind person and his family					
3.1.3 Councelling patients presenting with progressive visual loss					

3.1.4 Give reason(s) for your performing at the stated levels.

.....

.....

.....

.....

.....

APPENDIX 'C'

UNSTRUCTURED INTERVIEW GUIDE FOR PATIENTS

1. AIM

To assess the performance of professional nurses with respect to the prevention of blindness and rehabilitation of the blind, as viewed by patients who report eye problems.

2. INFORMATION REQUIRED

2.1 Assessment of the patient

- history taking
- visual acuity testing
- eye inspection

2.2 Health education or advice given

2.3 Treatment or care given in relation to the eye problem presented

2.4 Referral procedure taken

APPENDIX 'D'

GUIDE FOR SCORING THE QUESTIONNAIRE

SECTION B: ABILITY TO IDENTITY RISK FACTORS

NUMBER OF POINTS		
	1.	AT PRIMARY LEVEL
	a.	Malnutrition
	b.	Poor environmental hygiene
	c.	Poor personal hygiene
	d.	Taking unprescribed drugs during pregnancy
8	e.	Infections affecting the pregnant mother (such as rubella)
	f.	Oxygen administration to premature infants
	g.	Exposure to eye injuries
	h.	Failure to immunise children
	2.	AT SECONDARY LEVEL
	a.	No screening for common blinding conditions (such as glaucoma and cataract)
	b.	Late seeking of medical advice
	c.	Late patient referral
6	d.	Use of wrong or unprescribed eye medication
	e.	Lack of knowledge about symptoms of certain eye disorders
	f.	Resistance to treatment

6	3.	TERTIARY PREVENTION
	a.	Negative attitudes from the family, friends and community towards the blind
	b.	Fate
	c.	Lack of knowledge about available rehabilitation services
	d.	Inadequate follow up care
	e.	Age at which blindness developed
	f.	Inadequate information on prognosis

SECTION C : HEALTH EDUCATION

NUMBER OF POINTS		
5	1.	PRIMARY PREVENTION
	1.1	*Nutritional aspects*
	a.	Brown cereals
	b.	Yellow vegetables
	c.	Green leafy vegetables
	d.	Fruits
	e.	Animal foods

6	1.2	ENVIRONMENTAL HYGIENE
	a.	Building toilets
	b.	Proper disposal of refuse
	c.	Safe water supply
	d.	Adequate housing
	e.	Vector control (flies and mosquitoes)
6	1.3	PERSONAL HYGIENE
	a.	Handwashing after toileting and urinating
	b.	Handwashing before touching the eyes
	c.	No sharing of face cloths and towels
	d.	No usage of soiled wash cloth for the face and around the eyes
	e.	Caution on use of aerosol hair spray products
	f.	Cleaning hair to prevent dandruff
6	1.4	CHILD CARE
	a.	Immunization
	b.	Education of parents to warm children against playing with dangerous objects
	c.	Adequate diet for children
	d.	Personal hygiene
	e.	Vitamin A tablets to under five children
	f.	Education of children to avoid looking directly at the sun

	1.5	STUDENTS COMPLAINING OF EYE STRAIN
	a.	Good light source
	b.	Suitable distance of reading material
	c.	No reading in moving vehicles
	d.	Rest in between reading periods
6	e.	Thorough history to exclude visual problems
	f.	Report if symptoms persist
	1.6	OCCUPATIONAL SAFETY
	a.	Use of safety goggles
	b.	Enforce safety regulations
	c.	Pre-employment eye testing
4	d.	Annual testing of eyes
	1.7	PREGNANT MOTHERS
	a.	No taking of unprescribed drugs
	b.	Avoid contact with infected persons
6	c.	Balanced diet
	d.	Attend antenatal clinic
	e.	Medical advice for any abnormal vaginal discharge
	f.	Personal hygiene
	1.8	MOTOR VEHICLE DRIVERS
	a.	Eye tests
	b.	Use of seatbelts
4	c.	Wearing of spectacles as needed
	d.	Rest periods for longer distance

3	1.9	TRADITIONAL HEALERS a. No instillation or application of any herbal eye medication without consulting the medical practitioner or nurse practitioner b. Get more information on eye care from health professional (medical practitioners, ophthalmologists and nurses) c. Refer patients to the clinic or hospital

2. SECONDARY PREVENTION

NUMBER OF POINTS		
5	2.1	CARE OF EYE SPECTACLES a. Clean glasses b. Use clean soft cloth or lens paper c. Place safely in their cases d. Secure with spectacle bonds e. Place on their frame side

5	2.2	USE OF EYE MEDICATION a. Keep in a cool place away from sunlight b. Discard if colour has changed c. Note the expiry date, do not use if expired d. No sharing of eye medication e. Avoid usage of unprescribed medication
6	2.3	CARE OF CONTACT LENSES a. Clean with recommended solution (after removal) b. Soak in antiseptic when not in use c. Store in special cases with compartments marked for right and left eye d. Change solution daily e. Rinse before insertion f. Apply a wetting solution before insertion

3. TERTIARY PREVENTION/ REHABILITATION

NUMBER OF POINTS	

	3.1	GOAL FOR REHABILITATION
1	a.	Revelant independence
	3.1	TARGETED SKILLS DURING REHABILITATION
	a.	Communication
	b.	Mobility
3	c.	Skills for daily living
	3.3	REHABILITATION SERVICES FOR BLIND ADULT PERSONS
	a.	Natal blind society (Durban)
	b.	Nduduzweni
3	c.	Sports club (Durban)
	3.4	REHABILITATION SERVICES FOR BLIND CHILDREN
2		
	a.	Inchanga school for the partially sighted and blind children
	b.	New Horizon (Pietermaritzburg)
	3.5	ROLE PLAYERS IN REHABILITATION OF THE BLIND
	a.	Family
7	b.	Social worker
	c.	Ophthalmologist
	d.	Colleagues in rehabilitation institutions
	f.	The blind person himself
	g.	Skills developer

7	3.6	IDENTIFICATION OF ROLES FOR EACH PERSON INVOLVED IN THE REHABILITATION OF THE BLIND
	a.	Family : Emotional support; Acceptance
	b.	Social worker : Assessment, referral, skill development
	c.	Ophthalmogist : Registration of the blind
	d.	Psychologist : Counselling of the family, friends, relatives and the blind
	e.	The blind person : Acceptance of disability and willingness to be rehabilitated
	f.	Colleagues : Support and encouragement
	g.	Skills developer : Skills training
6	3.7	COUNSELLING OF PARENTS WITH A BLIND CHILD
	a.	Heredity and genetic counselling
	b.	Social welfare intervention
	c.	School for the blind
	d.	Future possible job opportunities
	e.	Register as blind
	f.	Child acceptance
6	3.8	COUNSELLING ON ALBINISM
	a.	Heredity and genetic counselling
	b.	Photophobia (its relevance on eye protection)
	c.	Dark glasses
	d.	Large hat
	e.	Eye test
	f.	Diet rich in vitamin A

	3.9	ASSISTING A BLIND PERSON ON WALKING
4	a.	Allow to take your arm
	b.	Lead, do not push
	c.	Give clear instructions
	d.	Create awareness of your approach

4. SECTION D : ASSESSMENT SKILLS

NUMBER OF POINTS		
	4.1	KNOWLEDGE OF VISUAL ACUITY TEST TOOLS
4	a.	Snellen's test chart
	b.	E. Chart
	c.	Torch
	d.	Any visible object
	4.2	KNOWLEDGE OF TEST TOOLS FOR ILLITERATE ADULTS
3	a.	E. Chart
	b.	Torch
	c.	Any visible object

	4.3	KNOWLEDGE OF TEST TOOLS FOR ILLITERATE CHILDREN
4	a.	E. Chart
	b.	Kay/Picture chart
	c.	Torch
	d.	Any visible object
	4.4	IMPORTANT FACTOR IN VISUAL ACUITY TEST
1	a.	Distance
	4.5	INTERPRETATION OF VISUAL ACUITY TEST RESULTS
	a.	Poor vision
3	b.	Right eye sees objects normally seen at 60 metres
	c.	Left eye commonly perceive light
	4.6	HISTORY TAKING
	a.	Pain or discomfort
	b.	Persistent headache
	c.	Photophobia
	d.	Watering or lacrimation
	e.	Discharge
	f.	Blurred vision
11	g.	Double vision/diplopia
	h.	Halos
	I.	Flashes and floaters
	j.	Dark certain in front of the eyes
	k.	Distorted images
	g.	

3	4.7 EQUIPMENT USED FOR EXTERNAL OCULAR EXAMINATION a. Visual acuity test charts b. Torch and batteries c. Eye speculum
8	4.8 COMMON ABNORMALITIES TO LOOK FOR AN EYE INSPECTION OF CERTAIN EYE STRUCTURES 4.8.1 Eyelids a. Inflammatory charges b. Bruising, scarring c. Swelling d. Watering e. Discharge f. Falling of eye lashes g. Ptosis (drooping of eyelids) h. Inward or outward turning eyelids
4	4.8.2 Conjunctiva a. Colour (such as yellowish colour indicating jaundice) b. Oedema c. Haemorrhage d. Foreign bodies/lacerations

4	4.8.3 *Cornea* a. Opacity b. Dullness c. Abrasions or ulcers d. Surface and shape
3	4.8.4 *Anterior chamber* a. Pus b. Blood c. Depth
6	4.8.5 *Pupil* a. Abnormal shape b. Reaction to light c. Equality d. Abnormal position e. Occlusion f. Size

5. SECTION E : SPECIFIC EYE CARE MEASURERS

NUMBER OF POINT	

	5.1 AT PRIMARY PREVENTION
	5.1.1 *Care of a new born infant during delivery*
2	a. Immediate swabbing b. Immediate instillation of an antiseptic
	5.1.2 *Care of an unconscious patient*
3	a. Routine eye care (e.g. eye swabbing) b. Lubricate by instilling recommended eye solution c. Keep patient eyes closed
	5.1.3 *Care of a premature infant*
2	a. Avoid 0_2 administration b. Reduce amount of 0_2 to not more than 50%
	5.1.4 *Care of a patient on quinine treatment*
3	a. Observe signs and symptoms of quinine toxicity b. If signs and symptoms are noted, discontinue treatment c. Report signs and symptoms to the medical doctor (immediately).
	5.1.5 *'Prevention of blindness is to be commenced when the client presents with eye problems'.*
1	Answer = (a) False

1	5.1.6 *Nurses' role in assessing eye conditions involves history taking and physical examination* Answer = (a) True

5.2 AT SECONDARY LEVEL

NUMBER OF POINTS	
4	5.2.1 *Care of a patient with a corneal abrasion* a. Instil antibiotic eye drops or eye ointment b. Take history c. Test for visual acuity d. Examine the extent by fluorescein drops
6	5.2.2 *Care of a patient with a red painful eye* a. Take history b. Test visual acuity c. Check intra-ocular pressure d. Instil antibiotics if local problems are identified e. Refer for expert opinion f. Five analgesics

6	5.2.3 *Care of a patient with intra-ocular foreign body* a. No attempt to remove b. Take history c. Pad both eyes d. Give analgesia e. Instill antibiotics f. Refer immediately for expert treatment
3	5.2.4 *Prevention of blindness due to glaucoma* a. Conduct mass screening b. Prescribe antiglaucoma treatment c. Refer immediately for expert treatment
4	5.2.5 *Prevention of blindness due to senile cataract* a. Screening of clients from 40 years old and above b. Market the success of cataract surgery c. Educate on the care and use of aphakic glasses (after lens extraction) d. Refer for expert treatment

APPENDIX 'E'

WORKSHOP AIM(S) AND OBJECTIVES

The aim of the workshop was to enhance an awareness of the clinic professional nurses' role in the prevention of blindness and rehabilitation of the blind and thereby improving nursing care rendered to patients in need of eye care.

OBJECTIVES

1. To describe the role of professional nurses working at the clinics concerning:

   - prevention and promotive eye care
   - management of eye conditions at the clinics
   - rehabilitation of the blind

2. To demonstrate important nursing assessment skills to be performed in relation to eye care (such visual acuity testing, history taking and eye inspection).

APPENDIX 'F'

PARTICIPANTS WORKSHOP EXPECTATION

1. Assessment of patients presenting with eye problems:

   - visual acuity testing
   - eye examination
   - history taking

2. Management of the following:

   - injured eye
   - infected eye
   - eye foreign bodies

3. Role of a nurse in the prevention of blindness (at all levels of prevention)

4. General care of all eye patients
5. Knowledge about eye conditions
6. Health education to be given to patients with eye problems
7. Explanation to be given to the older adults on lens extraction
8. More knowledge on refractive errors
9. Knowledge on rehabilitation resources for the blind patients.

APPENDIX 'G'

WORKSHOP ON EYE CARE: OUTLINE "G"
AREAS COVERED

FIRST DAY: 09H00 - 13H00

1. ASSESSMENT SKILLS
   - history taking
   - visual acuity testing
   - eye examination

SECOND DAY: 09H00 - 13H00

2(a) WORKSHOP ON FACTORS PREDISPOSING TO BLINDNESS
   - nutritional factors
   - environmental factors
   - personal hygiene
   - infections
   - eye accidents
   - some treatments such as certain drugs (especially if given to pregnant mothers during the first trimester), facial radiotherapy (e.g. facial) and oxygen administration, especially to premature infants
   - other risk factors

2(b) ROLE OF A NURSE IN PREVENTION OF BLINDNESS AND REHABILITATION

   (I) Health education at primary level of prevention

THIRD DAY : 09H00 - 13H00

ROLE OF A NURSE CONTINUED

(i) Health education at primary level continued

(ii) Health education at secondary level

(iii) Health education at tertiary level

The emphasis on the importance of community based eye care was made.

Workshop activities included group discussions, presentations and role playing of certain activities (visual acuity testing), giving health education about certain eye problems and eye examinations.

2(c) THE WAY FORWARD

(i) Implementation of the skills learned

(ii) Evaluation of performance will be done through observations, questionnaires and patients' interviews

(iii) Workshops on eye care to be conducted at least twice a year.

University of Zululand

Universiteit van Zoeloeland

Department of Nursing Science

Private Bag X1001
Privaatsak
KWADLANGEZWA 3886
South Africa
(0351) 93911
Telgrams: "Unizul"
SA 631311
Fax (0351) 93735
Fax (0351) 93845 (Buying)
Fax (0351) 93130 (Rectorial)
Fax (0351) 93571 (Library)

Ref./Verw.

04 August 1998

Enquiries:- Mrs B M Zungu

The Regional Director
Dr M L Mhlongo
c/o Lower Umfolozi War Memorial Hospital
Private Bag x 20005
EMPANGENI
3880

Dear Dr Mhlongo

REQUEST FOR PERMISSION FOR CONDUCTING A RESEARCH PROJECT FOR STUDY PURPOSES

I kindly request permission for undertaking research for a doctoral degree in nursing in Region H.

1. The title of the project is:-
   PREVENTION OF BLINDNESS: A NURSING PERSPECTIVE

2. The target population shall be professional nurses employed in health services under the Department of Health in KwaZulu- Natal Region H.

3. The aim of the study is to assess the professional nurses' skills for the prevention of blindness and rehabilitation of the blind.

Enclosed please find the format of the questionare to be submitted to the professional nurses that shall participate in the study. Your assistance will be appreciated.

Yours faithfully

B M. Zungu

MRS B M ZUNGU
ACTING HEAD OF DEPARTMENT

University of Zululand

Universiteit van Zoeloeland

Department of Nursing Science

Private Bag X1001
Privaatsak
KWADLANGEZWA 3886
South Africa
(0351) 93911
Telgrams: "Unizul"
SA 631311
Fax (0351) 93735
Fax (0351) 93845 (Buying)
Fax (0351) 93130 (Rectorial)
Fax (0351) 93571 (Library)

Ref./Verw.

02 September 1997

Enquiries:-
Mrs B.M. Zungu

The Nursing Service Manager
Empangeni Hospital
Private Bag
EMPANGENI
3880

Dear Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN YOUR HOSPITAL

I kindly request permission for conducting research in your hospital. The topic is PREVENTION OF BLINDNESS : A NURSING PERSPECTIVE. The target population is professional nurses and patients with eye problems. Please find enclosed the questionnaire and a checklist.

Yours faithfully

B M. Zungu

B.M. ZUNGU (MRS)
ACTING HEAD OF DEPARTMENT

Permission granted !
An excellent topic.

Province of Kwazulu Natal
LOWER UMFOLOZI DISTRICT WAR MEMORIAL HOSPITAL
1997 -09- 11
EMPANGENI
OORLOGGEDENKHOSPITAAL
ONDER UMFOLOZI EN DISTRIK
Provinsie van Kwazulu Natal

PROVINCE KWAZULU-NATAL	ISIFUNDAZWE SAKWAZULU-NATAL	PROVINSIE KWAZULU-NATAL
HEALTH SERVICES	EZEMPILO	GESONDHEIDSDIENSTE

REGIONAL OFFICE
REGION H
25 NGWELEZANA ROAD
EMPANGENI

TELEPHONE: 0351-7870162	FAX :	PRIVATE BAG	: X20005
UCINGO : 0351-7872008	FAKSI: 0351-7870175	ISIKHWAMA SEPOSI:	EMPANGENI
TELEFOON : 0836550463	FAKS :	PRIVAATSAK	: 3880
ENQ. : DR MHLONGO	DATE : 03.10.97	REFERENCE NO.	:

Mrs B M Zungu
Nursing Science Department
University of Zululand

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH ON PREVENTION OF BLINDNESS IN REGION H

I have pleasure in informing you that you have been granted permission to conduct a research on Prevention of blindness in Region H. The conditions of the said permission are laid out in the attached correspondence from Head Office.

We wish you well.

Yours faithfully,

Dr M L Mhlongo
DIRECTOR: EMPANGENI HEALTH REGION

PROVINCE OF
KWAZULU-NATAL
DEPARTMENT OF HEALTH

ISIFUNDAZWE
SAKWAZULU-NATALI
UMYANGO WEZEMPILO

PROVINSIE
KWAZULU-NATAL
DEPARTEMENT VAN GESONDHEID

NATALIA
330 LONGMARKET ST
PIETERMARITZBURG

TEL. 0331-952111
FAX 0331-426744

Private Bag X9051
Isikhwama Sepost Pietermaritzburg
Privaatsak 3200

REFERENCE: 66/1
ENQUIRIES: Dr C.P.D. Emerson
EXTENSION: 2052

Dr M.L. Mhlongo
Director: Empangeni Health Region
Private Bag X20005
EMPANGENI
3880

02 OCT 1997

REQUEST FOR PERMISSION TO CONDUCT A RESEARCH ON PREVENTION OF BLINDNESS IN REGION H

1. Your letter dated 8 September 1997 refers.

2. Please be advised that authority has been granted for Mrs B.M. Zungu, Acting Head, Department of Nursing Science, University of Zululand, to do research in Region H on Prevention of Blindness, provided that:-

   (a) Confidentiality is maintained;

   (b) The research proposal has been passed by a recognised Ethics Committee of a tertiary institution;

   (c) The Department is acknowledged; and

   (d) The Department receives a copy of the report on completion.

"SECRETARY : DEPARTMENT OF HEALTH
KWAZULU-NATAL

MCH/rcb/s.y72

FAXED
2/10/97

University of Zululand

Universiteit van Zoeloeland

Department of Nursing Science

Private Bag X1001
Privaatsak
KWADLANGEZWA 3886
South Africa
(0351) 93911
Telgrams: "Unizul"
SA 631311
Fax (0351) 93735
Fax (0351) 93845 (Buying)
Fax (0351) 93130 (Rectorial)
Fax (0351) 93571 (Library)

Ref./Verw.

02 September 1997

Enquiries:-
Mrs B.M. Zungu

The Nursing Service Manager
Eshowe Hospital
Private Bag 504
ESHOWE
3815

Dear Madam

REQUEST FOR PERMISSION TO CONDUCT RESEARCH IN YOUR HOSPITAL

I kindly request permission for conducting research in your hospital. The topic is PREVENTION OF BLINDNESS : A NURSING PERSPECTIVE. The target population is professional nurses and patients with eye problems. Please find the questionnaire and a checklist.

Yours faithfully

B.M. Zungu

B.M. ZUNGU (MRS)
ACTING HEAD OF DEPARTMENT

ESHOWE
PROVINCIAL HOSPITAL
1997 -09- 05

Approved
K.D. McDonald

PROVINCIAL HOSPITAL
1997 -09- 0 5

H/W32/1/3

KWAZULU DEPARTMENT OF HEALTH

RECOMMENDATION AND APPROVAL FOR CARRYING OUT RESEARCH

1. Personal Details and Researcher

Name: BUSISIWE ZUNGU Official Title: MRS

Address: P.O. BOX 37674 ESIKHAWINI 3887

Employer: UNIVERSITY OF ZULULAND

2. Research Title: PREVENTION OF BLINDNESS: A NURSING APPROACH

3. Recommendations by Institution/Regional Officer/Study Leader

.....

.....

.....

4. Chairmam of Research Committee:

Remarks: (a) HIGHLY RECOMMENDED.

(b) MRS ZUNGU'S PROJECT IS REGISTERED WITH THE UNIVERSITY'S RESEARCH COMMITTEE

Confirm that the project has been approved by the research Committee PROJECT NO: S559/97

SIGNED: ..... DATE: 4 SEPT. 1997

5. Superintendent or Regional Officer

Remarks: .....

.....

.....

1. Confirm that use of facilities will not, in my opinion, disrupt the routine of the institution.

SIGNED: ..... DATE: .....

H/WJ2/1/3

KWAZULU DEPARTMENT OF HEALTH

RECOMMENDATION AND APPROVAL FOR CARRYING OUT RESEARCH

1. Personal Details and Researcher

Name: BUSISIWE M. ZUMA Official Title: MRS

Address: J2 1775, P.O. BOX 37674 ESIKHAWINI 3887

Employer: UNIVERSITY OF ZULULAND

2. Research Title: PREVENTION OF BLINDNESS: A NURSING APPROACH

3. Recommendations by Institution/~~Regional Officer~~/Study Leader

.....

.....

.....

4. Chairman of Research Committee:

Remarks: The study is recommended for the institutional purpose.

.....

Confirm that the project has been approved by the research Committee

SIGNED: [signature] DATE: 12.09.97

5. Superintendent or Regional Officer

Remarks: Study will be valuable for hospital and will provide assistance if conducted acc. to guidelines.

1. Confirm that use of facilities will not, in my opinion, disrupt the routine of the institution.

SIGNED: [signature] DATE: 12/9/97

DEPARTMENT OF HEALTH
NGWELEZANE HOSPITAL
1997 -09-
PRIVATE BAG X9021
EMPANGENI 3880
UMNYANGO WEZEMPILO

6. Head of professional group of researcher:

Remarks: N/A

SIGNED: ..... DATE: .....

7. Head of Pharmaceutical Services. (In the case of clinical trials)

Remarks: N/A

SIGNED: ..... DATE: .....

8. HEAD OF DEPARTMENT

THIS PROJECT IS APPROVED / NOT APPROVED

Remarks:

Conditions: .....

SECRETARY FOR HEALTH. DATE: