

**Utilization of Public Eye Care Services
By The Rural Population of
Capricorn District, Limpopo Province,
South Africa**

MPH

MD Ntsoane

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**UTILIZATION OF PUBLIC EYE CARE SERVICES BY
THE RURAL POPULATION OF CAPRICORN
DISTRICT, LIMPOPO PROVINCE, SOUTH AFRICA**

BY

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DECLARATION

I declare that the Utilization of Public Eye Care Services by the Rural Population of Capricorn District, Limpopo Province, South Africa hereby submitted to the University of Limpopo, for the degree of Master of Public Health (MPH) has not been previously submitted by me for a degree at this or any other university; and that it is my own work in design and execution, and that all material contained herein has been duly acknowledged.


NTSOANE M.D (Ms)



Date: 01/03/2010

DEDICATION

This dissertation is dedicated to my three lovely children (my daughters Tumelo Shatadi and Tshegofatšo Pheladi and son Moeketsi Katlego Kuaho), and hubby Theko for their unconditional love, patience, encouragement, and support during the study period.

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DEFINITION OF CONCEPTS

Apartheid: The government policy of racial segregation (formerly in South Africa); officially renounced in 1992 (Pearsall, 1999).

Knowledge: Is a measurement of understanding of any given topic (Kaliyaperumal, 2004) or is awareness gained by experience of a fact or situation (Soanes, 2000).

Attitude: Feelings towards a particular subject as well as any preconceived ideas that they may have towards it (Kaliyaperumal, 2004). Attitude is more or less permanent state of mental organization, is a highly emotive feeling reflecting a person's state of mind towards a value such as fear of something (Pearsall, 1999).

Perception: Way of understanding or regarding something, or the ability to understand the true nature of something or have insight on something (Soanes, 2000).

Practices: Is the way in which people demonstrate their knowledge and attitude through their actions (Kaliyaperumal, 2004).

Optometrist: A person who is qualified to examine the eyes and prescribe and supply spectacles and contact lenses (Pearsall, 1999).

Ophthalmology: A branch of medicine concerned with the eye and its diseases.

Service: Is an organized system of labour and material aids used to supply the needs of the public (Pearsall, 1999).

Optometric services: Services rendered by a qualified Optometrist to examine the eyes and prescribe and supply spectacles and contact lenses (Pearsall, 1999).

Refractive error: Occurs in the eye when accommodation is relaxed, and parallel rays of light fail to converge to a sharp focus on the retina. Its categories are short-sightedness, long sightedness and astigmatism (Grosvenor, 2007)

Low Vision: Is defined as visual acuity of less than 6/18, but equal to or better than 3/60, or a corresponding visual field loss between 20 and 10 degrees in the better eye with best possible correction (World Health Organization, 1992).

Blindness: Visual acuity of less than 3/60 or visual field loss of less than 10 degrees in the better eye with best possible correction (World Health Organization, 1992).

Visual Impairment: It includes both low vision as well as blindness (World Health Organization, 1992).

VISION 2020: The Right to Sight: It is a global initiative established by the world Health Organization (WHO) and the International Agency for the prevention of blindness aimed at the elimination of avoidable blindness and impaired vision (World Health Organization, 2000).

Phelophepa: Is a health-care train that travels through eight of South Africa's provinces to bring health services to rural towns (Sandison ,2009).

LIST OF ABBREVIATIONS

WHO: World Health Organization

SA: South Africa

DOH: Department of Health

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ABSTRACT

BACKGROUND

The Department of health, Limpopo province in recent years has developed eye care services in public hospitals. It is reckoned that people living in the rural areas would benefit significantly from the cheaper public eye care services. However, the level of utilization of the public eye care services by the rural communities in the province has not been investigated. It was therefore, considered of interest to evaluate whether or not the services are being utilized adequately or not.

AIM OF THE STUDY

The aim of this study was to investigate whether or not the public eye care services in the Capricorn district, Limpopo Province are adequately utilized by the rural population.

METHODOLOGY

A cross-sectional qualitative survey study design was used. A questionnaire with 42 questions on the utilization of eye care services was developed in English, translated to Northern Sotho (the local dialect) and back translated to ensure veracity. The questionnaire included questions on demography, knowledge of available eye care services, need for eye care services, utilization, attitude and perception of public eye care services. The questionnaire was field-tested in a pilot study conducted prior to the study and involves 20 participants, with final amendments made to ensure clarity of contents. The participants included males and females from 1000 households in selected 38 villages. The questionnaire was delivered to the head of each household for completion. Data analysis was done with computer software SPSS (Statistical Package for Social Sciences) version 15. Results are presented in narrative and tabular forms and as figures.

RESULTS

From the 1000 selected households for the study, a total of 851 participated (completed the questionnaire), a response rate of 85.1%. The participants included 518 (60.9%) females, and 325 (38.2%) males, and 8 (0.9%) did not indicate their gender. All were black South Africans and their ages range from 16 to 103 years with the mean of 49.2 and standard deviation of 16.3 years. Many, 287 (55.4%) females and 187 (57.5%) of males respectively indicated general (private and public) utilization of available eye care services. One hundred and eighty four (64.1%) females and 113 (38.0%) males respectively indicated use of available public (government) eye care services. Knowledge on available public eye care services was associated with the use of public eye care services ($p < 0.05$). Educational level of the participants was also associated with the use of public eye care services ($p < 0.05$). Knowledge of the need for regular eye care services was also associated with the use of public eye care services ($p < 0.05$). Utilization of public eye care services in the district varied with each hospital. Participants around Seshego hospital 114 (83.3%) were the highest users of public eye care services, whereas those around Lebowakgomo hospital 3 (23.1 %) were the lowest users. Participants around Botlokwa hospital area (38.8%) reported the least positive attitude towards public eye care services, and participants around Seshego hospital area (69.5%) reported the most positive attitude towards public eye care services. Knowledge of eye care of the participants was associated with the use of public eye care services adequately ($p < 0.05$). It was also noted that factors like knowledge of the available public eye care services ($p < 0.05$) affected utilization of public eye care services.

CONCLUSION

Based on the above findings, it was concluded that on average, the public eye care services were not being adequately utilized in the rural Limpopo areas. While in some areas, they were being adequately utilized, in others, they were under-utilized. It is recommended that, in order to prevent visual impairment and avoidable blindness, eye care promotions and awareness campaign on the available eye care services must be done extensively in the province. Government, non-governmental

organizations and other stake-holders such as eye care providers must begin to educate people about eye care and eye care services. Better education about prevention of blindness and visual impairment will help to minimize the problems.

CHAPTER ONE

1.1 INTRODUCTION

The World Health Organization (WHO) and the International Agency for the Prevention of Blindness have developed a global initiative for the elimination of avoidable blindness by the year 2020; "VISION 2020": the right to sight" (WHO, 2000). "VISION 2020" includes three major components as target activities: specific disease control, human resource development, infrastructure and appropriate technology development. The key factors in achieving the goals of "VISION 2020" are eye care service and utilization (Fotouhi et al., 2006).

In South Africa, like in other developing nations of the world, there is an uneven distribution of eye care services. These services are provided mainly by private Optometrists, Ophthalmologists, and those working in non governmental organizations (NGO'S) who are concentrated in the urban areas. The South African Optometric Association has noted that the public health optometry does not reach the poor communities that are in most need of eye care services. In view of this, in July 2000, the Association pledged its support to the Right to Sight Project in an attempt to bridge the gap between urban and rural eye care services. The aim of which was to bring eye care services to the uninsured, the unemployed, the economically compromised and needlessly blind populations (Sacharowitz, 2005).

Optometry has much to offer in the eye care services in the government hospitals as it is well positioned as a primary health care profession (Walls, 1996). It has been recognized, however, that part of the problems facing optometry in South Africa up to the recent past, is that the Apartheid Government's health policies did not include optometric posts at national or district hospitals. With the new dispensation, the Department of Health, Limpopo Province, has employed optometrists in both rural and urban government hospitals since 1991 (Sacharowitz, 2005). Presently, there are 79 optometrists in the various hospitals in the Province (DOH-Limpopo Province, 2009). These optometrists complement the eye care services provided by the ophthalmologists and the ophthalmic nurses. The Limpopo Province therefore, has a

good complement of eye care services. Also, according to DOH-Limpopo Province, (2009) all the hospitals are well equipped. However, it has not been documented whether these facilities are being adequately utilized by the rural population that should mostly benefit from them. The purpose of this survey therefore, was to examine the utilization of public eye care services by the people living in the rural areas of the Capricorn district of the Limpopo Province.

1.2 PROBLEM STATEMENT

The Department of Health, Limpopo Province strives to provide good eye care services both in the rural and urban areas of the Province. However, there are anecdotal reports that the services are not being adequately utilized by the rural population who really needed them. This may among other reasons be due to lack of knowledge about the available eye care services or negative attitude towards them.

1.3 RESEARCH QUESTIONS

Anecdotal reports suggest that the rural population such as those in the Capricorn district of Limpopo Province do not adequately utilize eye care services. The research questions to be attempted to provide answers in this study, therefore include the following: Does the rural population in the Capricorn district adequately utilize the public eye care services available to them? If the answer to this question is no; can this be because of lack of knowledge of the public eye care services provided at their local Hospitals or because of their attitude towards the public eye care services?

1.4 HYPOTHESES

There is underutilization of the public eye care services by the rural population of Capricorn district, Limpopo Province, South Africa.

The under utilization is due to lack of knowledge of the available eye care services.

1.5 AIM OF THE STUDY

The aim of this study was to investigate whether the public eye care services are adequately utilized or underutilized by the rural population in the Capricorn district, Limpopo Province.

1.6 OBJECTIVES OF THE STUDY

- To assess the level of utilization of eye care services in Capricorn district, Limpopo Province.
- To determine the knowledge of the rural population in the Capricorn district of Limpopo province about public eye care services available to them.
- To evaluate the attitudes of the rural population in the Capricorn district of the Limpopo Province regarding public eye care services.

CHAPTER TWO

2. LITERATURE REVIEW

Literature review is a critical summary and an assessment of the current state of knowledge or current state of art in a particular field and will provide the reviewer with an up to date account and discussion of the research findings in a particular topic. The researcher will learn about the ways other researchers have conducted their research projects. Also, the researcher will be able to see the methods that other more experienced researchers have used and then decide to follow on their footsteps and copy their methodological approach. Conflicting points of view expressed by different authors will be detected (Cano, 2005).

2.1 BACKGROUND: VISION, VISUAL IMPAIRMENT AND BLINDNESS

Vision is an essential part of everyday life, depended on constantly by people of all ages. Vision affects development, learning, communicating, working, health, and quality of life. Visual problems have significant deleterious effects on patients self reported quality of life (Ellwein et al., 1996). The presence of high rates of blindness in a community implies a significant loss of its productivity, not only because the blind often cannot be productively engaged, but also because others must care for them and generate the resources needed for their survival (Whitfield et al., 1990). However, in many parts of the world; many people are blind or visually impaired due to lack/under utilization of available eye care services. According to Whitfield et al. (1990), approximately 80% of people who are blind in the developing world suffer from conditions which are avoidable in the sense that their blindness could have been prevented or is surgically correctable. In the United States, an estimated 80 million people have potentially blinding eye disease (Vision and Hearing, 2000), 4 million have low vision, 0.7 million people are legally blind, and 4.7 million are visually impaired (Resnikoff et al., 2004). In Africa, an estimated 14 million people are visually impaired: four million was estimated as legally blind and 3 million as low vision (Resnikoff et al., 2004). In South Africa there is an estimated 600 000 (1.3%) visually

impaired people (Statistics SA, 2001). In Limpopo Province, there is an estimated 0.73% prevalence of bilateral blindness (Oduntan et al, 2003).

In Africa, the bulk of blindness is curable and efforts are being made to produce cost effective remedies. However, currently demands for eye care services far outweigh the available resources, not only in terms of funding and facilities for eye surgery, but also for correction of refractive errors and low vision and rehabilitation (Oduntan, 2005). Eye care services are also not readily available in the rural communities due to the fact that optometrists are usually concentrated in the urban areas (Sheni, 1996). This often forces the residents to resort to local treatment/remedies rather than undertake the tortuous journey entailed in seeking an optometric service in the urban areas (Onyeluche, 1993). Public health Optometry has not reached the communities that are in most need in an organized way, especially the rural areas (Holden and Resnikoff, 2002).

Refractive error is correctable with eyeglasses, contact lenses or laser surgery. In the absence of correction or inadequate correction, distance visual impairment may limit function (Smith et al., 2009). Uncorrected refractive errors are a significant cause of avoidable visual disability, especially in developing countries. Lack of awareness and recognition of this correctable cause of visual disability, compounded by the non-availability of affordable eye care services for testing and the provision of corrective lenses, has been highlighted in population surveys of blindness and visual impairment worldwide. Optometry is an essential part of the team necessary to contribute towards solving the problem, mainly by understanding global eye care needs and delivering effective and sustainable vision care to people in need, thereby ensuring their fundamental right to sight (Sacharowitz, 2005).

In Chile, uncorrected refractive error accounts for 33% of those with vision under 6/18 and only 36% of children with reduced acuity utilize spectacles (Silva et al., 2002). This was due to lack of availability of eye care services. In Gambia, a substantial amount (11%) of low vision is due to uncorrected refractive errors, that is, an estimated amount of 4600 people who live in rural areas need spectacles for distance correction because their visual acuity is less than 6/18. This cause of visual loss is potentially remediable by the provision of appropriate optical services (Faal et

al., 1989). In South Africa we have an estimated total of 10 406 000 refractive impaired population (Sacharowitz, 2005). This burden of visual impairment due to uncorrected refractive errors could be reduced if more people undergo a routine eye examination (Dandona et al., 2000). The challenge is to develop basic curative and preventative optometry services that are accessible to, and will be taken up by, the majority of the rural population (Faal et al., 1989).

According to Schaumberg et al. (2000) visual impairment may be preventable or treatable with timely intervention. Differences in the use of eye care service may play a role in fostering the racial and socioeconomic gap in the burden of visual impairment in the United States. Studies conducted on the rural dwellers in Mankweng sub-health district, South Africa, showed that 39% of those who have had eye examinations reported having their eye examined in 5 years or more despite having access to the affordable eye care services. This poor attitude towards eye care utilization was highlighted as a concern because this time interval is high enough for certain ocular diseases to cause irreversible damage or blindness, which may otherwise be avoided by prompt and regular eye examination (Oduntan and Raliavhegwa, 2001).

2.2 UTILIZATION OF HEALTH CARE SERVICES

According to Andersen (1995) health service use is determined by societal factors, health service system factors, and individual factors. Individual factors are categorised as need, enabling factors, and predisposing factors and these factors interact to influence the likelihood of an individuals using health care services (Bradley, 2002). Predisposing characteristics are those that exist before an illness and describe the propensity of an individual to use healthcare services, and they include age, sex, marital status, race/ethnicity, and occupation, as well as beliefs (e.g., attitudes towards health services, knowledge about disease, and values (Keeffe et al., 2002). Enabling factors are those factors that influence a person's ability to use healthcare services e.g. having a regular source of medical care and health insurance (Andersen, 1995). Enabling factors encompass family and community resources and accessibility to those resources (Keeffe et al., 2002). Need includes individuals' perceived and evaluated functional capacity, symptoms, and

general state of health e.g. their perception of health and the physician's judgement about their need for care (Andersen, 1995). The need for service, for example, can be either evaluated as the presence of eye disease or a perceived need such as a noticed change in vision (Keeffe et al., 2002).

2.3 UTILIZATION OF EYE CARE SERVICES

A potential eye care patient is one with the motivation to seek services for an examination or for treatment of an eye disease. This motivation has been related to both the educational level and the public awareness (Silva et al., 2002). Also, limited availability, poor accessibility and in-affordability of the services have been identified as important causes of the high prevalence of blinding eye diseases (Silva et al., 2002).

Utilization of eye care services in simple terms could be defined as accessing the available eye care services (Dandona et al., 2000). It has been reported that in rural areas of Iran (Tehran population) despite the availability of eye care services, there is a general under-utilization of available eye care services (Fotouhi et al., 2006). In a study conducted in a rural county in Ireland, it was also found that there was underutilization of eye care services by glaucoma patients. This low rate visits for glaucoma may be that, although there was an awareness of glaucoma, patients did not utilise the care that was available to them (Clendenin et al., 1997). Even, in the urban areas of certain countries, under-utilization has been reported. Despite the available eye care services to the Tehran population in Iran, over one third of the participants in a survey had never had an ophthalmic examination, nor had over two fifth of the visually impaired population ever received any eye care service (Fotouhi et al., 2006).

Dandona et al., (2000) in a study on utilization of eye care services in an urban population in southern India, also reported that a large proportion of people with visual impairment in the urban population of Hyderabad in India are not accessing eye care services. Bylsma et al., (2004) also reported that despite the available eye care services, the only group statistically more likely than the general population to remain unassessed up to 5 years were those with under corrected refractive error. At

some villages in India where there were eye camps, only seven percent of people having eye problems go for eye care (Bhagwan et al., 2006). Underutilization of eye care services has also been reported in the Mankweng area of Limpopo Province, South Africa (Oduntan and Raliavhegwa, 2001).

Factors affecting the utilization of general health care services can also apply to the use of eye care services. According to Keeffe et al. (2002), utilization of eye care services can be explained by a combination of predisposing, enabling, and need characteristics. Andersen's model creates some insights into the factors that create barriers to the use of eye care services. Predisposing and personal attributes were found to be associated with utilization of eye care services. Enabling factors like private health insurance, rural residence, and language spoken also independently explained some of the variations in utilization for eye care services. People with a change in vision or a known risk factor such as diabetes (need) had also utilized eye care services more frequently than those without perceived or diagnosed risk. Palagyi et al. (2008) also found that women with either low vision or blindness were more likely to not seek treatment than women without impairment, and in agreement with studies done by Fotouhi et al (2006) and Schaumberg et al. (2000) states that women generally seek eye care services more than men.

According to Robin et al. (2004), in a study on utilization of eye care in Baltimore it was found that 35.5% of people 35 years and older were needlessly disabled by curable cataracts, 6.6% by diabetic retinopathy, and 4.7% by glaucoma. Had these individuals utilized available eye care, much of this disability might not be present. Fletcher et al., (1999) reported that a high proportion of people who could have benefited from eye treatment were not using available services because either they had not sought treatment advice or they had not accepted treatment recommendations. Robin et al. (2004) further states that in India despite relatively recent sustained efforts by the ophthalmic community that has seen a doubling of cataract output to 3.5 million in 2000. Still more than 40% of those with bilateral blindness had never visited an eye doctor. Nirmalan et al., (2004) also states that in rural south India approximately two thirds (61%) of those requiring eye care services had not previously sought such services. According to Dandona et al., (2000), and Whitfield et al., (1990), refractive errors and cataract were found to be the leading

causes of visual impairment and blindness. Most of the visual impairment from refractive errors could be alleviated by access to optometric services and spectacles.

In view of the above facts, various measures like free primary school screening and provision of free spectacles to remove financial and transportation barriers have been employed. These measures were employed in an attempt to reduce the burden of blindness in the United States because for preventable blindness to be minimized, people must first utilize the available eye care resources (Robin et al., 2004).

2.4 FACTORS AFFECTING UTILIZATION OF EYE CARE SERVICES

Several barriers prevent people from presenting for evaluation and management of their eye problems, and these include accessibility of services, cost, poor knowledge of availability of services, lack of time to come, fear of outcome of surgery and cultural and social barriers (Sacharowitz, 2005). Besides improving infrastructure and manpower, a major challenge will be to address the barriers currently preventing a large proportion of the blind population from utilizing existing services (Robin et al., 2004). The ability to identify this factors affecting utilization of eye care services is important information for policy makers given the relationship between blindness and the postponement of timely eye examination, and the high social and personal cost associated with blindness (Barraza, 1998).

Visual impairment from uncorrected refractive errors can have immediate and long-term consequences in children and adults, such as lost educational and employment opportunities, lost economic gain for individuals, families and societies, and impaired quality of life. There are various factors that are responsible for refractive errors to remain uncorrected which includes: lack of awareness and recognition of the problem by the patient or patient's family, non availability of and/or inability to afford refractive services for testing, not able to afford corrective lenses, cultural disincentives to comply (Reskinoff et al., 2008).

The use of eye care services is related to several demographic characteristics, including age, race, education and income, and is consistent with the idea that

increased access to care may play a role in greater utilization among those in the higher income and education strata (Schaumberg et al., 2000).

2.4.1 Factors that may contribute to underutilization of eye care services

2.4.1.1 Availability to eye care services

Availability of eye care services varies from country to country within the regions of the world, and the number of eye care providers per million-population in the richest countries may be nine times more than in the poorest countries (Silva et al., 2002). The shortage of staff to provide eye care in Africa is legendary (Lewallen and Courtright, 2001). Poor availability of eye care services leads to high prevalence of blindness in communities. In Bioko, Equatorial Guinea, West Africa, the prevalence of blindness is very high (3.2%) due to a very poor availability of eye care resources (Moser et al., 2002). Therefore there is a need for all the developing countries to increase the availability of eye care services.

According to Naidoo et al., (2003) in South Africa, availability of eye care personnel is much better than the rest of Africa, particularly with regard to optometrist, but poor distribution has resulted in most of the population's finding refractive services inaccessible or unaffordable. This limited availability of refractive services in the public sector is due to the fact that optometrists practice almost exclusively in the private sector, whereas ophthalmologists focus mainly on the management of ocular disease and surgery and provide little with regard to refractive services. Ophthalmic nurses with training in basic refraction techniques are also often deployed to eye care services other than refraction (Naidoo et al., 2003).

General health indicators in the Limpopo Province, South Africa have steadily improved social, environmental, economic, and cultural factors, as well as greater accessibility and high quality of services. This was reinforced by the introduction of optometry post in government hospitals in Limpopo Province, South Africa (Oduntan and Raliavhegwa, 2001).

Public eye care in most parts of South Africa is rendered by Ophthalmologists and Ophthalmic nurses. One of the services that the Department of Health, Limpopo

Province gives priority to is the eye care. In addition to Ophthalmologic clinics, the department has optometric services in many of the provincial hospitals in which optometrist engage mainly in refraction (Oduntan and Raliavhegwa, 2001). The Department also has an eye care steering committee consisting of officials of the Department, ophthalmologists, optometrist, ophthalmic nurses, UL Optometry Department Staff, and officials of the Limpopo Bureau for the blind. The committee meets regularly to deliberate on several eye related issues such as how to improve the eye care services in the Province especially to the rural communities (Oduntan and Raliavhegwa, 2001). Currently there are 76 optometrists in the various hospitals in the Province out of which Capricorn district boasts 19 qualified optometrists distributed amongst its 7 hospitals (DOH- Limpopo Province, 2009).

2.4.1.2 Accessibility to eye care services

Access is defined as the distance between the consumer and the services. Access to eye care service can be measured by the travel time required by public transportation to reach the nearest eye care provider (Silva et al., 2002). According to Ashaye et al. (2006), in Oyo State, Nigeria, the majority of health facilities for eye care services are located in the urban areas and far from reach to the rural dwellers, and therefore leaving many rural areas underserved. Consequently blindness affecting people in rural areas with avoidable and treatable eye conditions are largely unattended while city facilities remain underutilized. This agrees with the view that, It is a common knowledge that eye care services like other health care services are not easily accessible especially in the rural areas of developing countries, and is problematic in countries with isolated areas in the rainforest or high mountains, poor road systems, or lack of public transportation (Silva et al., 2002).

In India, it has been identified that one of the reasons for poor utilization of government facilities for eye care was due to the distance of the hospitals from rural villages (Chandrashekhar et al., 2007). In a study done in a rural county in Ireland it was also found that poor public transport and expensive taxi services militate against seeking care much further away than their local clinic for most residents (Clendenin et al., 1997). Fletcher et al., (1999) also states that people living 3 kilometres or less from the eye camps were more likely to attend than those living further away.

Palagyi et al. (2008) reported that there is unequal access to eye care services due to the fact that some countries such as Timor-Leste, the roads to rural villages are underdeveloped and frequently impassable during the wet seasons. Transportation is limited and the average walking time for a rural dweller to reach a health centre is about 70 minutes. In a study done in Oyo State, Nigeria it was also found that many rural communities still rely on alternative sources of care including traditional healers and patent medicine sellers, who serves as frontline health workers, in the absence of modern eye facilities (Ashaye et al., 2006).

Most developed countries incorporate key elements of the welfare state, one of which is a public health system characterized by the provision of benefits to the whole population, which aims to ensure equal access to use of health services according to the need for care (Lostao et al., 2007). Gold et al. (2006) reported that, although poor access to general medical care services has been documented widely, the unmet need for supplemental health care services such as eye glasses has been largely ignored. The authors further indicate that more than 5% of the USA population reported unmet need for eye glasses, presumably due to poor access.

Most Africans communities are rural and the eye care services are in the cities, therefore a journey, often a major one, is necessary to reach the eye care services (Lewallen and Courtright, 2001). In South Africa, like its fellow African countries, accessibility is one of the problems facing eye care. According to Cochrane (1995), it is difficult to reach some rural areas of South Africa (including the Capricorn district of Limpopo Province) because of the condition of the roads. Some of these roads are not maintained and in rainy season are slippery such that even the best vehicles cannot access the areas easily. Although, the Phelophepa health train (a health-care train that travels through eight of South Africa's provinces to bring health services to rural towns) has brought about a significant change in health care services in rural areas including eye care; part of the problems faced by people in the rural Capricorn district of the Limpopo Province is that the train does not reach many parts of this district because there are no rails. Bucher and Ijsselmuiden (1988) also states that one of the reasons for the low effectiveness of Elim Hospital's surgical interventions

to reduce blindness prevalence was due to the relative inaccessibility of the Eye Hospital's services.

The bill of rights in the constitution of South Africa 27(1), however, indicates that everyone has the right to have access to health care services, including reproductive health care (National Government, South Africa, 1996). Therefore, the issue of accessibility needs to be given due attention country wide.

2.4.1.3 Affordability of eye care services

Affordability of eye care delivery is based on income levels, cost, efficiency, and prizes (Silva et al., 2002), This includes not only the actual cost of the services received, but less obvious costs such as transportation to the hospitals, loss of work, and living expenses while in hospitals as well (Lewallen and Courtright, 2001). Affordability is related to eye care utilization as one cannot use any service that one cannot afford.

In a study conducted in the Latin America and the Caribbean, it was found that affordability was an important issue that limits utilization of services by the poorest segments of the population (Silva et al., 2002). In Trinidad and St. Vincent, the cost of eye care may be 15 days of salary; and in Honduras 30 days of salary; in Jamaica, even more (Silva et al., 2002). Robin et al. (2004) states that, in developing countries like in more developed nations, finances can definitely influence the utilization of ophthalmic health care. Money is always an obvious reason for not seeking medical care.

Clendenin et al., (1997) found that some of the reasons for declining eye care services were the perceived cost and problem getting assistance to the clinic. Fletcher et al., (1999) also states that direct cost was a barrier to seeking treatment, and efforts to reduce them includes reducing the costs of surgery and providing money for food , travel, and medication. Schaumberg et al., (2000) found that women with annual income exceeding \$50 000 were nearly twice as likely to have had an examination within two years compared with women with the lowest income and those with higher household incomes were particularly likely to have more frequent

eye examinations. The higher utilization level in this group is also influenced by the fact that most of the higher earners have higher education and therefore are more knowledgeable regarding how to look after their health.

Vilas et al. (2007) states that the low service level (refraction, spectacles and surgical devices) in rural areas along with issues of affordability may also have resulted in very few people using eye care services; this in turn has resulted in low levels of appreciation of the need of and benefits from routine eye examination, use of spectacles and surgical services. In the study half the subjects cited economic reasons for not seeking treatment even after having noticed decreased vision.

Dhaliwal and Gupta (2007) found that insufficient family income due to indirect cost relating to loss of a day's income, delegating house hold responsibilities and transportation for both the patient and his attendant are important barriers to eye care utilization. Palagyi et al. (2008) also reported that low utilization of eye care services was due to the fact that rural dwellers were unable to afford transport to eye care service centres. Owsley et al. (2006) also agreed with the above researchers that one of the barriers of not using eye care services was the cost of eye care which was cited by both the users of eye care services and the eye care providers. Cost comments were centred on issues such as the high cost of prescription drugs, co-payments, deductibles, supplemental health insurance, and eye glasses and their relationship to poor compliance with treatment plans and skipping follow up care.

In the Limpopo Province of South Africa as in many rural communities in Africa, self medication using local herbs or non ophthalmic drugs or medication from the pharmacy without proper prescription drugs is a common practice (Oduntan and Raliavhegwa, 2001). The self medication patronage of the traditional healers for eye care services may be related to the economic status of the people and locations of the traditional healers for eye care services may be related to economic status and locations of the people. The rural dwellers may find these treatments methods cheaper and more accessible than seeking optometric or ophthalmological services (Oduntan and Raliavhegwa, 2001). In a study on prevalence and causes of blindness in the Northern Transvaal (now Limpopo Province), South Africa, Bucher and Ijsselmuiden (1988) also reported that uncorrected aphakia after cataract

surgery was the third most common cause of blindness. One of the reasons was due to loss of eye glasses or inability to afford them.

The introduction of optometry posts and services at government hospitals in the Limpopo Province by the Department of Health has increased the affordability for eye care services (Sacharowitz, 2005). This will also be associated with many factors which will enhance eye care utilization such as accessibility of services.

2.4.1.4 Knowledge of available eye care services

According to Bradley (2002), knowledge in consistence with the Andersen' model was identified as a determinant of health care service use. Within the knowledge domain, several themes emerged: the content and amount of information available, the source of the information, and the accessibility of the information. The study also found that gaps in knowledge were common place among both African–American and white participants, who reported inadequate information about the types of services offered, eligibility, and financial coverage for different services. African-American participants also indicated that they did not know how to access needed information. White participants, while acknowledging their limited knowledge, knew how they would obtain information, if needed. Accessibility of information included its attainability and its comprehensibility.

Bhagwan et al. (2006), in a study of knowledge, attitude and practices regarding cataract surgery in parts of India, found that poor knowledge regarding eye diseases like cataract has been reported and people are unaware of the possibilities to get their sight restored through operations. Chandrashekhar et al. (2007), in a study on utilization and barriers to cataract surgical services conducted in rural South India, also found out that the reason for under-utilization of eye care services was that the rural population was not aware of the existing free-of-cost services by non-governmental organizations, and low-cost eye surgeries. Farmer et al. (2006), in agreement with other studies, in a study of rural/urban differences in accounts of patients' initial decision to consult primary care; reported that knowledge of where to get services and also who to consult have a big impact on eye care service utilization.

In a study in India about utilization of eye care services by persons with glaucoma; it was found that even though actual eye care was free, underutilization of the available eye care was due to the fact that patients may or may not have known that they could have received free eye care (Robin et al., 2004). Clendenin et al., (1997) also found underutilization of eye care services by glaucoma patients may be due to the fact that glaucoma is a silent killer and many people may be unsure that they have glaucoma due to lack of education about eye diseases. Fletcher et al., (1999) reported that ignorance about the availability of eye care services was not a reason for the low uptake of the eye camps. Many people with cataract, however, were not aware of their diagnosis. It was also found that even though medications and surgical skills to treat glaucoma were available, 30% of those detected were blind or visually impaired in one eye and 35% had severe visual field loss in both eyes. Low utilization of eye care services was due to lack of knowledge of the available free eye care (Robin et al., 2004).

Vilas et al. (2007) states the predominance of personal reasons like lack of knowledge demonstrate that greater awareness regarding the importance of seeking treatment for visual impairment is needed to facilitate uptake of eye care services. Palagyi et al. (2008) also reported that lack of awareness of service availability was the most frequent reason for not seeking treatment especially for rural respondents. Rural dwellers, who were almost four times more likely to not seek care, reported this more frequently than urban counterparts. Lewallen and Courtright, (2001) also reported that lack of awareness that people can get help for their eye problem prevents many from seeking treatment, and also lack of understanding of what will be entailed like time, money or pain.

In a study on rapid assessment of cataract at pension pay points in South Africa, Cook et al., 2007 also states that the single most barrier to eye care utilization identified in 50.0% of people was a lack of awareness of the availability of a cure for their severe visual impairment or blindness. These clearly indicated a need to raise awareness of the availability and benefits of available eye care services to indigent people. Eye care providers must begin to educate individuals at an early age about the role of healthcare resources and how to better utilize them. People should know

that blindness is not a normal part of ageing. Better education about prevention of blindness in a nation whereby blindness is so evident, might help to minimize it (Robin et al., 2004). Schaumberg et al. (2000) states that better knowledge of the increased rates of blindness and vision impairment among blacks in the study population of demographic predictors of eye care amongst women, prompted these health-conscious women to have more frequent eye examinations.

2.4.1.5 Attitude and cultural beliefs

Blindness in most developing countries is preventable. Lots of people are still becoming blind due to the fact that barriers to the usage of eye health services to prevent blindness are still numerous including factors such as belief, attitudes, and practice of the predominantly rural population (Ashaye et. al., 2006). According to Bradley (2002), attitudes were defined as personal view concerning the use of health care services and were characterized by four major themes namely: care providers, affordability, social environment, and self determination. Attitude was also described as having a direct effect on health care utilization. In Canada, one-third to one-fourth of the population still faces a situation of inequality and cultural differences between health providers and users. This has been identified as a major issue of concern for underutilization of health services in the Canadian rural community (Pampalon et al., 2005).

Patel et al. (2006) reported that social attitude towards visual health issues along with need for seeking help for their visual impairment were the principal barriers to uptake of eye care services. In some areas of India, strabismus (tropia or squint) was not considered treatable and was not considered related to loss of vision, in fact, it was considered a sign of good luck. Majority also felt that children below 4 years should not wear spectacles and most did not feel that children's vision should be checked periodically and that vision for children should be checked, only if the care-taker felt there was a problem or if a child complained (Nirmalan et al., 2004). Also it has been reported that segments of the community still look up on the traditional healers for primary level of health care delivery in India (Nirmalan et al., 2004).

Palagyi et al. (2008) also reported attitudinal reasons like 'feel there was no need for eye care services' was cited by greater proportion of participants, even though this might have been related to how debilitating the individual perceived the problem to be. For example, those with poor vision, most likely to be due to cataract or refractive error, and so most likely of gradual onset, tended to be less likely to seek treatment than those with a more acute onset or painful problem, such as eye injuries or ocular irritation. Fletcher et al., (1999) also reported attitudinal reasons like "they do not need treatment or they can cope and also if you go for surgery you will loose face (be blind)' as barriers to eye care utilization. Clendenin et al., (1997) also found underutilization of eye care services by glaucoma patients was due to the wrong perceptions about the disease and fear of surgery. Owsley et al. (2006) reported that older African Americans do not make eye care a priority like other aspects of health and do not fully understand the importance of preventative strategies and available treatments. These attitudinal tendencies may be due to the fact that most of the older African Americans were not literate and therefore not knowledgeable of how best to care for themselves. Snelling et al., (1998) also reported that lack of social support and a perception that the procedure was not needed were major barriers to eye care utilization.

Oduntan and Raliavhegwa (2001) found that 5% of the Mankweng sub-district population would consult traditional healers for certain eye problems, rather than seek eye care from the Government or private eye care providers even though public eye care services were readily available to them and affordable. The use of corrective spectacles was also considered highly unconventional and was accompanied by fear of being ridiculed as being blind (Oduntan and Raliavhegwa, 2001).

2.4.1.6 Level of education

In a study on the role of educational attainment in utilization of eye care services, a positive association between education and eye care use was found; the higher the level of education, the more likely that timely eye exams are performed, and the less likely that blindness will occur. The higher utilization level in this group is influenced

by the fact people with higher education are also more knowledgeable regarding how to look after their health (Barraza, 1998).

In a study conducted in America, Orr et al. (1999) in agreement with other studies found that people with more education were significantly more likely to see either an ophthalmologist or an optometrist. The higher utilization level in this group was also influenced by the fact that most people with higher education were higher earners and could afford health care services.

In a study on the utilization of eye care services by persons with glaucoma in rural South India, it was also found that the use of eye care increased with increasing education (Robin et al., 2004). Also, in the Tehran population study, it was reported that the likelihood of seeking eye care was associated with higher levels of education. This relationship was attributable to greater knowledge and therefore, more reasonable behaviour. It was also presumed to be due to the fact that educated people are members of the higher social economic class and may thus have more access to the eye care services and find them more affordable (Fotouhi et al., 2006).

Nirmalan et al., (2004) also reported that educated people were more likely to use eye care services than those with lower education. This relationship was attributable to the fact that people with higher education may have a higher need for eye care services in this rural population because of improved health status. Snellingen et al., (1998) also reported even when there is awareness of the availability of treatment; it is the urban, affluent, and literate segments of the society that seek the services.

In the study on demographic predictors of eye care among women in America, it was also found that there were significant associations between educational level and having an eye examination within two years. Women with more extensive education, particularly those with bachelor's degrees or master's degree were generally more likely to having had an examination than those with primary or high school level of training (Schaumberg et al., 2000). Vilas et al. (2007) in a study of barriers to accessing eye care services among visually impaired populations in rural Andhra Pradesh also found that the majority of rural population studied were illiterate and by definition blind (mainly due to cataract) and did not seek eye care services. This

relationship could be attributed to their lack knowledge of how to take care of themselves as most of the rural dwellers do not have higher education or were illiterates.

In a study on prevalence and causes of blindness in the Northern Transvaal (now Limpopo Province), South Africa, Bucher and Ijsselmuiden (1988) also reported the lower utilization of available cataract services in women was due to their lower literacy rate.

2.4.1.7 Race

In a study conducted in America, it was found that factors like race also affect underutilization of health services due to lack of knowledge. Blacks were significantly less likely than whites to consult any type of eye care provider. This low utilization of eye care services by black people was influenced by the fact that most black people are poor and therefore can not afford health care services and higher education fees (Orr et al., 1999). Ganz et al. (2006) in a study on the patterns of eye care use and expenditure among children found that black children had lower levels of use of services. This low utilization of eye care services by black children was influenced by the fact that most of their parents did not have higher education and therefore only earned meagre wages and hence falls below the federal poverty level. Bylsma et al., (2004) also reported that despite the available eye care services, subjects whose main language was other than English did not seek eye care services more than their English speaking counterparts.

In a study on demographic predictors of eye care among women in the United States of America, Schaumberg et al. (2000) found that black women were more likely to seek eye care services than whites. The results differ with other studies regarding racial/ethnic group in health seeking behaviour. These was due to the fact that other factors such as the higher level of overall health awareness and schooling in health care professions in the study population has offset any racial/ethnic influence on healthcare seeking behaviour that may be present in the general United States population.

2.4.1.8 *Gender of the service user*

Gender of eye care users has also been considered as a possible factor in eye care utilization. It has been reported that women were more likely to seek eye care than men (Fotouhi et al., 2006). In the study on demographic predictors of eye care among women in America, it was found that most women (83%) had an eye examination within the past two years (Schaumberg et al., 2000). The data found in this study about utilization of eye care services are encouraging in that most women tended to have frequent eye exam, however the potential clinical significance of lower rates of eye care utilization among some subgroups of the population deserves some further study. Bylsma et al., (2004) also in agreement with the above studies reported that males were less likely to seek eye care services than their female counterparts.

However, in a study on low uptake of eye services in rural India, Fletcher et al., (1999) reported that men were twice as likely as women to attend the eye camps. In a study on prevalence and causes of blindness in the Northern Transvaal (now Limpopo Province), South Africa, Bucher and Ijsselmuiden (1988) also reported that women were 1.6 times less likely to have undergone cataract surgery than men, and had a significantly higher prevalence of blindness than men. Bucher and Ijsselmuiden (1988) further states that women were significantly more affected by blindness than men ($p < 0.0001$).

Nirmalan et al., (2004) in a study on utilization of eye care services in rural south India, found that there is no significant difference overall between sexes for utilization of eye care services in this rural population, but males were more likely to access the eye camps than females. Dandona et al., (2000) in a study on utilization of eye care services in an urban population in southern India, also found that there is no significant difference overall between sexes for utilization of eye care services in this rural population.

2.4.1.9 Quality of the service provided and efficiency of provider

Consumer satisfaction is an important factor in sustaining utilization of health care generally. This is also expected for eye care services as it is also reported in other studies that dissatisfaction is a barrier to eye care utilization (Palagyi et al., 2008). In a study conducted in India, it was found that the quality of service rendered was one of the factors affecting under-utilization of public eye care services. Good quality surgery with adequate optical correction is the best advertisement to create demand for eye care services (Chandrashekhar et al., 2007), and a few bad outcomes can discourage a whole community (Lewallen and Courtright, 2001).

It has been identified that one of the reasons for poor utilization of government health facilities in India was that the services at the primary health centres are provided by general nurses and these centres are usually not equipped to provide necessary services (Chandrashekhar et al., 2007).

Ellwein et al. (2006) also reported that service use depends as much on provider's characteristics, quality of service and reimbursement of schemes as it does on the affected population and the biologic forces underlying the ocular problem. Palagyi et al. (2008) also reported that dissatisfaction with treatment is one of the barriers of eye care utilization, and satisfaction with treatment from private services was higher than that for government and expatriate service providers. Therefore, in addition to an increase in service quantity, there needs to be an improvement in intervention and service quality, to facilitate equitable, acceptable and effective eye care. The development, implementation and monitoring of standards of care and treatment/clinical guidelines is one mechanism by which this may be achieved.

2.4.1.10 Age of the user

In a study on the utilization of eye care services by persons with glaucoma in rural South India it was found that the use eye care increased significantly with age (Robin et al., 2004). This may be due to the fact that most of the eye diseases manifest themselves during old age. Schaumberg et al. (2000) states that the likelihood of having eye examination in the past two years increased with age. Older women were

particularly likely to have more frequent eye examinations than younger ones. The relationship of age and eye care utilization was largely explained by variations in the prevalence of diabetes, hypertension, cataract, and related maculopathy (Schaumberg et al., 2000).

Vilas et al. (2007) found significant association between age and noticeable decrease in vision over the past five years and suggested that this might be due to the health seeking priorities in relation to age in rural areas, as age influences the decision to seek health. Kuang et al. (2007) state that the high utilization of eye care services by the older people was due to old age health problems. Bylsma et al., (2004) and Nirmalan et al., (2004) also in agreement with the above studies reported that younger subjects were less likely to use available eye care services than older subjects. This increase in utilization of older people might be due to an increased burden of blindness and vision impairment among the elderly.

In a study on prevalence and causes of blindness in the Northern Transvaal (now Limpopo Province), South Africa, Bucher and Ijsselmuiden (1988) also reported that people over the age of 60 were more likely to have undergone cataract surgery than the younger ones due to the fact that after the age of 60 the prevalence of blindness increased sharply.

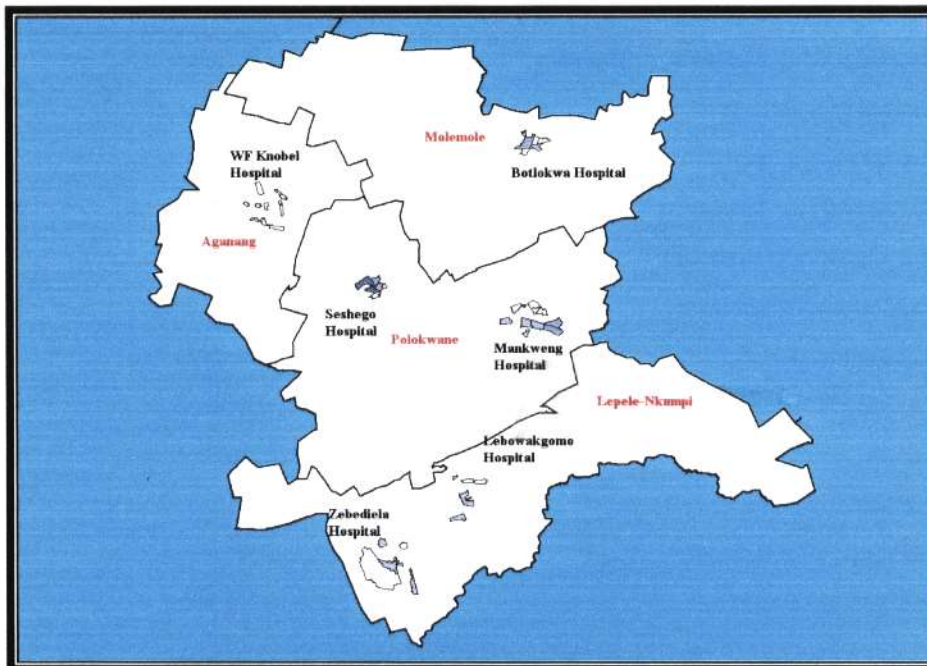
CHAPTER THREE

3. MATERIALS AND METHODS

3.1 STUDY SITE

The study was conducted in the rural areas of Capricorn District, Limpopo Province. The district has a total population of approximately 1.2 million people and a large proportion of the people live in the rural areas (Statistics SA, 2001). The district is further divided into seven municipalities, namely Polokwane, Lepelle-Nkumpi, Aganang, Blouberg, and Molemole. The district has seven hospitals distributed in its municipalities, namely Polokwane-Mankweng complex which is situated centrally, to the East are Seshego, W.F. Knobel and Helen Franz hospital, to the Southern side are Lebowakgomo and Zebediela Hospitals, and lastly to the North is Botlokwa Hospital. All the hospitals have optometry services except Helen Franz Hospital. Not all, however, have ophthalmology services. Fig 3.1 shows the map of the Capricorn district of Limpopo province, South Africa (municipalities and hospital distribution).

Figure 3.1: Map showing the Capricorn District with its 5 municipalities and the public hospital distribution.



3.2 STUDY DESIGN AND INSTRUMENT

This is a cross-sectional qualitative survey. A questionnaire (instrument) (with both open and closed ended questions) on the utilization of eye care services was developed in English, translated to Northern Sotho (the local dialect) and back translated to ensure veracity. It was used to collect information regarding demography of participants, knowledge of available eye care services and the attitudes and perceptions of rural dwellers towards public eye care. Section A of the questionnaire addressed the demography of the participants. Section B of the questionnaire dealt with knowledge of participants regarding eye care services. Section C of the questionnaire dealt with the need of eye care services. Section D of the questionnaire dealt with utilization of eye care services. Section E of the questionnaire dealt with attitudes towards and perceptions regarding public eye care services.

Knowledge of eye care was evaluated by asking whether respondents know if there was any problem if you don't go for regular eye examination; how often should a person go for a regular eye examination (those who reported regular eye examinations of once in one or two years were considered to know how often a person should go for regular eye examination); or if children 5 years and younger need eye examination. Knowledge of public eye care services was evaluated by asking whether the respondents knew whether there were eye care services in government hospitals, whether optometrists were available in public hospitals, or whether glasses were cheaper at public hospitals.

The need for eye care services was measured by the symptoms which the participants had ever experienced such as poor distance and near vision; symptoms that may be eyes-related such as headaches, as well as the presence of systemic diseases like diabetes and high blood pressure which can cause visual impairment. A history of eye care visit was considered a determinant of eye care utilization. Attitudes and perception towards public eye care services were evaluated by asking whether the respondents had ever tried to get spectacles from public hospital, or have they ever recommended family, friends, etc for eye care in government

hospitals, or if they will consider treatment at government hospital when having eye problems.

3.3 SAMPLE POPULATION AND SAMPLING

Sample population included villages situated within 5km radius of each of the six hospitals (with optometrist) located in the study site. There were 38 villages in this selected site and there was an estimated adult population of 40,125. The number of households in the 38 villages was 35 831 (Statistics SA, 2001). Cumulative households were calculated for each village, and the sampling interval was calculated by dividing total population of households by the number of households selected in each village. The number of households to participate in the study per village was determined by calculating how much percentage each village contributed to the total cumulative population. This was done in order to ensure that the estimated 1000 participants needed for the study were distributed evenly across the 38 villages. A simple random sampling method was used to select the 1000 houses in the 38 villages included in the study.

On reaching the villages, a reference point was chosen and using a sampling interval, a random number was chosen between one and the sampling interval and that number was used to determine where to start from the reference point. From that household a sampling interval was used to determine the next house hold until the required number was achieved. It was pre-planned to give the questionnaire to the head of the family in each house for completion. On reaching each house, the nature and purpose of the study was explained to the head of the family. A consent form and questionnaire were administered. A total of 1 000 participants from the selected households were given the questionnaire for completion. This number is greater than the minimum sample of 380 using the table for determining sample size from a given population (Morgan and Krejcie, 1994).

3.4 ETHICAL CONSIDERATIONS

I. Approval was obtained from:

- The Research Committee of the School of Health Care Sciences. University of Limpopo.
- The University of Limpopo ethics committee.
- The Department of health and the local chief.

II. Participants were informed about the aims and the purpose of the study and that their participation was voluntary and that they had the right to abstain from participation.

III. Confidentiality of information collected from the participants was maintained. Participants were requested to sign the consent form (Appendix B). Only those who signed the consent forms were included in the study.

IV. Permission to conduct the study was obtained from the chiefs of the villages.

V. Permission to conduct the study was obtained from the Provincial Department of Health.

3.5 PILOT STUDY

Prior to the main study, a pilot study was conducted by the researcher in one of the villages that was included in the study, but the participants (subjects) in the pilot study were not included in the main study. The main idea was to test if there were items in the questionnaire that the participants had difficulty understanding (Saunders, 2000). Also, it helps to check the reliability, validity and the objectivity of the instrument. Before the pre-testing on the subjects, the questionnaire was administered to five optometrists who have been in practice for five years or more in order to verify content validity. Subsequently, the pilot study (pre-testing of questionnaires) was conducted on a small population samples, and was done in three stages. Firstly, it was administered to 20 subjects in a village which was included in the study. This was to ensure that the questionnaire measures what it is intended to measure and presents no difficulty to the participants. Secondly, the original twenty subjects were re-tested after four weeks to establish whether or not they give similar answers to those previously given (reliability of the questionnaire).

Finally, the questionnaire was tested on two other groups of ten subjects (from the same village) and findings compared to those previously obtained. This was to ensure that the results obtained were not by chance. During the pilot study, the skills of administering the questionnaire were polished in order to eliminate biases such as information and communication bias.

3.6 DATA COLLECTION

The questionnaire was administered to respondents by the researcher and research assistants to ensure greater percentage of return and at the same time accord the participants the opportunity to clarify some misunderstandings in the questions. The questionnaire was distributed to the participants chosen as the sample for completion. Those who could not read or write were assisted in completing the questionnaire by the researcher. Data collection was carried out from 02 to 30 May 2008.

3.7 DATA ANALYSIS AND DATA PRESENTATION

All statistical analysis was done using computer software SPSS 15 (Statistical Package for Social Sciences version 15). Summary statistics such as frequencies and cross tabulations were used. Modelling with the logistic regression was also utilized to analyze the data. It was decided that fifty percent utilization will be considered as adequate utilization. Results are presented in the form of tables and graphs.

3.8 VALIDITY

The population had been carefully defined with the samples that represent it. A total of 1 000 participants from the selected house holds were given the questionnaire for completion. This number is greater than the minimum sample of 380 using the table for determining sample size from a given population (Morgan and Krejcie, 1994), and it was done in order to improve the quality of the results. The interviewer correctly understood and recorded the respondent' responses. Appropriate techniques of

analysis were used; the descriptive statistics was applied to analyze data using the statistical Packages for Social Sciences.

3.9 RELIABILITY

Pilot study was done to check the appropriateness of the instrument in a village included in the study population. Self administered and careful wording of questions increased participants' reliability.

3.10 BIAS

Bias is a deviation from information which is correct and true. It refers to systematic deviation from the truth (Katzenellenbogen et al., 1997). It is distinct from precision or random error, which refers to repeatability. A small degree of bias may be inevitable in research but the first step in assessing the validity of a study estimate is to identify potential biases (Katzenellenbogen et al., 1997). The following potential biases were identified with this study:

- Sampling Bias

It occurs if the sample is not representative of the study population, that is, if the individual in the sample differ systematically from the study population, for example using volunteers as respondents to eliminate this bias the researcher used random sampling. This bias was eliminated in this study by appropriate sampling.

- Selection bias

It occurs when the sample is not representative of the total population, that is, when the sample size is too small (Katzenellenbogen et al., 1997). In order to make the findings of the study applicable to the population the sample size must be representative (Katzenellenbogen et al., 1997). To eliminate this bias the researcher selected a large sample size for this study.

- Non response bias or information bias

It occurs due to non-participation of the sample group (Bowling, 2002). The large sample used in this study and the method of distribution of questionnaires eliminated this bias.

- Communication bias

This occurs when the researcher and research assistant mis-interprets the data given (Bowling, 2002). To eliminate this bias enough training was provided to the research assistants prior to the study. Also, a pilot study was conducted prior to the main study.

3.11 REPORTING AND UTILIZATION OF RESULTS

Data reporting and dissemination of information include the following:

- Mini- dissertation.
- Publication in peer review journals.
- Presentation at conferences, seminars and to professional colleagues.
- Appropriate recommendations to Department of Health and Social Development.

CHAPTER FOUR

4. RESULTS

SECTION A: DEMOGRAPHIC INFORMATION

4.1 DEMOGRAPHY OF THE RESPONDENTS

A total of 38 villages situated approximately 5km from the six hospitals in the rural parts of Capricorn district of Limpopo Province were included in the study (Table 4.1 shows the selected villages and sample population). Out of the 1000 selected households for study, a total of 851 participated in the study (completed the questionnaire), a response rate of 85.1%. The ages of the respondents ranged from 16 to 103 years, with a mean of 49.2 ± 16.3 years (Table 4.2). The participants included 325 (38.2%) males and 518 (60.9%) females (Table 4.3). Table 4.4 illustrates the gender of respondents in relation to each hospital. The distributions of the respondents in relation to the hospitals are shown in Table 4.5. All the respondents were black South Africans (South Africans of African origin).

Table 4.1 Showing the name of hospitals, number of villages, total number of house holds and sample size for each hospital area in the selected villages 5km around the hospitals in Capricorn district, Limpopo province.

Hospital	Number of villages	Total number of house holds	Sample size per hospital area
Mankweng	10	11244	314
Seshego	5	7821	218
Botlokwa	6	6386	178
Zebediela	5	4128	116
W.F Knobel	8	3040	96
Lebowakgomo	4	2888	80
Total	38	35507	1000

Table 4.2 Showing the number (N) and ages of the respondents in relation to each hospital.

Hospital	N	Age of respondents			
		Minimum	Maximum	Mean	SD
WF Knobel	89	16	74	41.0	13.7
Botlokwa	113	18	74	50.3	14.5
Zebediela	50	19	85	43.7	15.1
Lebowakgomo	78	18	86	50.8	15.5
Mankweng	314	20	89	48.7	12.7
Seshego	197	18	103	53.9	21.5
No response	10				
Total	851	16	103	49.2	16.3

The ages ranged from 16 to 103 years with a mean of 49.2 ± 16.3 years. Ten respondents did not report their ages, hence the total was 841 (98.8%).

4.1.1. Gender of the respondents

There were 518 (60.9%) females and 325 (38.2%) males among the respondents, Table 4.3. The gender of the respondents per hospital is shown in Table 4.4

Table 4.3 Showing gender of respondents.

Gender	Respondents (N)	Respondents (%)
Male	325	38.2
Female	518	60.9
No response	8	0.9
Total	851	100

A vast majority 518 (60.9%) were females, 325 (38.2%) were males and 8 (0.9%) did not specify their gender.

Table 4.4 Showing gender of the respondents in relation to each hospital.

Hospital	Gender		Total
	Male	Female	
Mankweng	114 (36.9%)	195 (63.1%)	309 (100%)
Seshego	81 (41.1%)	116 (58.9%)	197 (100%)
Botlokwa	46 (40.0%)	69 (60.0%)	115 (100%)
WF Knobel	27 (29.7%)	64 (70.3%)	91 (100%)
Lebowakgomo	41 (51.9%)	38 (48.1%)	79 (100%)
Zebediela	16 (30.8%)	36 (69.2)	52 (100%)
Total	325 (38.6)	518 (61.4)	843 (100%)

Eight respondents (0.9%) did not report their gender; hence the total number of respondents was 843. Females were more than males in all the groups except Lebowakgomo hospital.

4.1.2. Respondents in each hospital area

The number and percentages of respondents in each hospital area are shown in Table 4.5. The number ranges from 314 (36.9%) to 52 (6.1%).

Table 4.5 Showing the number of respondents per hospital.

Hospital	Respondents (N)	Percentages (%)
Mankweng	314	36.9
Seshego	197	23.1
Botlokwa	116	13.6
WF Knobel	92	10.8
Lebowakgomo	80	9.4
Zebediela	52	6.1
Total	851	100

Mankweng hospital had the greatest number 314 (36.9%) of respondents and Zebediela hospital had the least number of respondents.

4.1.3. Marital status of the respondents

Out of the 851 participants, 222 (26.1%) were single, 327 (38.4) were married. Others are shown in Table 4.6.

Table 4.6 Showing the marital status of respondents.

Marital status	Respondents (N)	Respondents (%)
Single	222	26.1
Married	327	38.4
Divorced	80	9.4
Widowed	157	18.4
Living Together	58	6.8
No response	7	0.8
Total	851	100

A vast majority 327 (38.4%) of the respondents were single and the least 80 (9.4%) were divorced. Seven (0.8%) respondents did not report their marital status.

4.1.4. Educational status of the respondents

Out of the 851 participants, 190 (22.3%) had no formal education, 175 (20.6) studied up to grade 7 level. Others are shown in Table 4.7.

Table 4.7 Showing the highest level of education of the respondents.

Highest Level of Education	Respondents (N)	Respondents (%)
No Formal Education	190	22.3
Up to Grade 7	175	20.6
Grades 8 - 12	306	36.0
Undergraduate Degree/Diploma	141	16.6
Postgraduate Degree	27	3.2
No response	12	1.4
Total	851	100

A significant proportion 306 (36.0%) of the respondents had Grade 8-12. Only 27 (3.2%) had postgraduate degrees. A few, 12 (1.4%) did not specify their educational levels.

4.1.5 Household size of the respondents

Out of the 851 households that participated, 33 (3.9%) were single person household, 207 (24.3%) household were made of 2 or 3 people. Others are shown in Table 4.8. A minority, 72 (8.5%) did not report how many persons in the household.

Table 4.8 Showing respondents house hold sizes.

Household size	Respondents (N)	Percentages (%)
Single person household	33	3.9
2 or 3 members	207	24.3
4 or 5 members	290	34.1
6 or more members	249	29.3
No Response	72	8.5
Total	851	100

Majority 290 (34.1%) of the house hold had 4 or 5 members. The least number 33 (3.9%) were single person house hold.

4.1.6. Monthly income of the respondents

Of the participants who were 18 years and older, 358 (42%) were employed and 493 (58%) were unemployed. Many 476 (55.9%) did not give a response about their income level per month (Table 4.9).

Table 4.9 Showing the level of monthly income as reported by the respondents.

Monthly income level	Respondents (N)	Percentages (%)
R0 - R1200	172	20.2
R1201 - R3000	117	13.8
R3001 - R10 000	64	7.5
Above R10 000	22	2.6
No Response	476	55.9
Total	851	100

Many, 476 (55.6%) of the respondents did not disclose their income level. For those

Many, 476 (55.6%) of the respondents did not disclose their income level. For those who disclosed their income level, **172 (20.2%)** earn between R0-R1200, and the least number 22 (2.6%) of respondents earn above R10 000.

4.1.7. Total monthly household income

Three hundred and fifty eight (42.1%) households had a monthly income and reported it. The monthly incomes are shown in Table 4.10. Majority 493 (58.0%) of the respondents did not disclose their income level. For those who disclosed their income level, the majority 123 (14.5%) earned between R1200 – R3000 and the least number 28 (3.3%) of respondents earned above R10 000.

Table 4.10 Showing the level of monthly income for the whole household.

Income Group	Respondents (N)	Percentages (%)
R0 - R1200	122	14.3
R1201 - R3000	123	14.5
R3001 - R10 000	85	10.0
Above R10 000	28	3.3
No Response	493	58.0
Total	851	100

SECTION B: KNOWLEDGE OF EYE CARE SERVICES.

4.2 KNOWLEDGE OF EYE CARE AND EYE CARE SERVICES.

4.2.1. Knowledge of eye care.

Less than a third (28.3%) of the respondents reported that there was a problem if one does not go for regular eye examination. However, 63.4% of the responded reported to have knowledge regarding how often a person should go for regular eye examination. Many, 79% knew that children 5 years and younger need eye examination. The gender, related hospitals and use of eye care distribution of those who answered correctly on the above questions are discussed below.

4.2.1.1. Knowledge of respondents on eye care by gender

More male 29.2% than female 27.7% respondents knew that a person should go for regular eye examination. Also, 59.8% of the males and 65.6% of the females reported that there could be a problem if a person does not go for regular eye exams. Further, 76.4% of the males and 80.6% of females reported correctly that children five years and younger need eye examinations (Table 4.11). The answers given by those who felt children needed eye examinations included: children are born with eye problems; therefore it was important to know if they had sight problems. The answers given by those who felt children do not need eye examinations included: children don't have eye problems, children only go for eye test if they are ill, children are not allowed to test their eyes, don't know that children need to go for eye test.

Table 4.11 Showing knowledge of respondents on eye care by gender

Questions regarding eye care	Gender of Household Head		
	Male %	Female %	All Respondents
Knows how often a person should go for regular eye examination.	29.2%	27.7%	28.3%
Yes, there are problems if you don't go for regular eye examinations.	59.8%	65.6%	63.4%
Yes, children 5 years and younger need eye examinations.	76.4%	80.6%	79.0%
Knows that you can get glasses at a cheaper rate in government hospitals.	54.2%	55.5%	55.0%
Yes, they had recommended family, friends, etc for eye care in government hospitals.	41.3%	39.3%	40.1%

4.2.1.2. Knowledge of eye care per hospital.

Participant's knowledge with regard to each hospital area is shown in Table 4.12.

Table 4.12 Showing knowledge of eye care per hospital.

Questions regarding eye care	Hospital						
	WF Knobel	Botlokwa	Zebediela	Lebowakgomo	Mankweng	Seshego	All Respondents
Knows how often a person should go for regular eye examination.	21.7%	21.1%	38.5%	33.8%	42.7%	7.6%	28.3%
Yes, there is a problem if you don't go for regular eye examinations	59.8%	52.6%	58.0%	61.5%	70.6%	61.0%	63.4%
Yes, children 5 years and younger need eye examinations	69.6%	78.2%	84.0%	52.6%	90.7%	73.7%	79.0%

4.2.1.3. Knowledge of eye care by public eye care users and non-users.

In our study, utilization of eye care services differs depending on whether the respondents used public eye care services or private eye care services. Participants' knowledge with regard to each hospital area also differs depending on whether the respondents used public eye care services or private eye care services (non-public eye care services users) See Table 4.13.

Table 4.13 Knowledge of eye care among respondents who used public eye care services and those who did not. Those who responded correctly are shown.

Questions regarding eye care	Public eye care services users	Non-public eye care services users
Knows how often a person should go for regular eye examination.	24.7%	54.8%
Yes, there are problems if you don't go for regular eye examinations.	70.2%	77.9%
Yes, children 5 years and younger need eye examinations.	85.9%	87.1%

4.2.2. Knowledge of eye care services that are available in government hospitals.

4.2.2.1. Knowledge of available eye care services per hospital area.

Responses from W.F Knobel hospital area showed they are the most knowledgeable of all the areas. Responses from Botlokwa hospital area showed they are the least knowledgeable (Table 4.14). Respondents were aware of eye care services that are available in government hospitals and clinics with regard to each hospital area are shown in Table 4.14.

Table 4.14 Showing the knowledge of available eye care services in public hospitals.

Questions regarding knowledge of eye care services	Yes Respondents per Hospital (%)					
	WF Knobel	Botlokwa	Zebediela	Lebowakgomo	Mankweng	Seshego
Knows that there are eye care services in government hospitals	91.3%	55.3%	82.7%	75.0%	89.5%	77.4%
Know that there are optometrists in government hospitals	90.2%	54.4%	82.7%	61.5%	88.2%	76.5%
Knows that you can get glasses at a cheaper rate in government hospitals.	69.6%	26.5%	65.4%	66.3%	60.5%	49.0%

W.F Knobel hospital area has greater knowledge.

Table 4.15 Showing knowledge of respondents on available eye care services by users-gender.

Questions regarding knowledge of eye care services	Gender of Household Head	
	Male	Female
Knows that there are eye care services in government hospitals	78.8%	81.4%
Know that there are optometrists in government hospitals	78.0%	80.2%
Knows that you can get glasses at a cheaper rate in government hospitals.	54.2%	55.5%

Female respondents had more knowledge regarding available public eye care services than their male counterparts.

4.2.2.3. Knowledge of respondents on available eye care services by public eye care users and non-users.

Those respondents who utilized public eye care services had more knowledge regarding available eye care services in public hospitals than those who did not use public eye care services (Table 4.16)

Table 4.16 Knowledge of eye care services among respondents who used public eye care services.

Questions	Public eye care services users	Non-public eye care services
Knows that there are eye care services in government hospitals	97.7%	84.7%
Know that there are optometrists in government hospitals	97.6%	83.6%
Knows that you can get glasses at a cheaper rate in government hospitals.	65.6%	43.9%

Those who used public eye care services had more knowledge than those who did not use them.

SECTION C: NEED FOR EYE CARE SERVICES

4.3. NEED FOR EYE CARE SERVICES

4.3.1 Eye problems experienced by the respondents.

There were 850 subjects who responded to the need for eye care services; out of these, 587 (69.1%) indicated that they had experienced one form of eye problems or another in the past. Out of these 587, most respondents (80.6%) were from Mankweng Hospital area, and the least 266 (31.3%) were from Lebowakgomo hospital area (Table 4.17). Out of 850 subjects who responded to questions on the need for eye care services, 369 (43.4%) subjects experienced poor vision. Respondents around Seshego Hospital reported the highest rate 462 (54.3%) of deteriorating vision problems. The lowest rate of 160 (18.8%) was from respondents around Lebowakgomo Hospital. One hundred and thirty nine (42.8%) male and 227 (43.9%) female respondents reported experiencing poor vision in the past year.

Table 4.17 Showing questions on eye problems experienced by the respondents in the past by hospital.

Questions	Hospitals/Number and percentages(%) of yes respondents					
	Mankweng	Seshego	Botlokwa	W.F Knobel	Zebediela	Lebowa kgomo
Any eye problem?	253 80.6%	147 74.6%	62 67.4%	62 67.4%	33 63.5%	25 31.3%

4.3.2. Reports of headaches after reading

Many, 12.1% of the respondents reported headaches after reading. These include 39 males (12.0%) and 63 (12.2%) females. Mankweng Hospital area also had the highest rate of 16.2% while the lowest rate was reported from Lebowakgomo Hospital area where only 1 respondent (1.3%) reported having headaches.

4.3.3. Systemic diseases associated with eye problems.

A significant number of the respondents (16.5%) reported that they had high blood pressure, 11.3% had diabetes Mellitus and 6.5% had rheumatoid arthritis (Table 4.18).

Table 4.18 Showing questions on systemic diseases experienced by the respondents in the past by hospital area. Number and percentages (%) of respondents:

Questions	Responses	Do you suffer from High blood pressure? N (%)	Do you suffer from Diabetes Mellitus? N (%)	Do you suffer from Rheumatoid Arthritis N (%)
Mankweng	Yes	14 (7.1%)	46 (14.6%)	28 (8.9%)
	No	183 (92.9%)	268 (85.4%)	286 (91.1%)
Seshego	Yes	14 (7.1%)	22 (11.2%)	9 (4.6%)
	No	183 (92.9%)	175 (88.8%)	188 (95.4%)
Botlokwa	Yes	27 (23.5%)	15 (13.0%)	10 (8.7%)
	No	88 (76.5%)	100 (87.0%)	105 (91.3%)
W.F Knobel	Yes	8 (8.7%)	1 (1.1%)	2 (2.2%)
	No	84 (91.3%)	91 (98.9%)	90 (97.8%)
Zebediela	Yes	13 (25.0%)	3 (5.8%)	3 (5.8%)
	No	39 (75.0%)	49 (94.2%)	49 (94.2%)
Lebowakgomo	Yes	14 (17.5%)	8 (10.0%)	5 (6.3%)
	No	66 (82.5%)	72 (90.0%)	75 (93.8%)

The rates of reported High Blood Pressure ranged from 7.1% for respondents around Seshego Hospital; 23.5% for those around Botlokwa Hospital; and 25% around Zebediela Hospital (Table 4.18). Only 1 out of 92 respondents (1.1%) from WF Knobel Hospital and 3 out of 52 respondents (5.8%) from the area around Zebediela Hospital reported that they had Diabetes Mellitus. The highest rates were 46 out of 314 respondents (14.6%) for the area around Mankweng Hospital and 15 out of 115 respondents (13.0%) for the area around Botlokwa Hospital. Rheumatoid Arthritis seemed to be less of a problem amongst the respondents. The overall rate was 6.7 %, with WF Knobel Hospital reported the lowest rate of 2.2% (2 out of 92 respondents) and Mankweng Hospital had the highest rate of 8.9% (314 respondents).

Data of systemic diseases in relation to each hospital area and it is summarised in Table 4.19.

Table 4.19 Showing the presence of any systemic diseases experienced by the respondents in the past by gender of the respondents.

Questions	Yes Respondents		
	N (%)	Male N %	Female N %
Do you suffer from High blood pressure?	139 16.5%	53 16.3%	86 16.6%
Do you suffer from Diabetes Mellitus?	95 11.3%	48 14.8%	47 9.1%
Do you suffer from Rheumatoid Arthritis	55 6.5%	25 7.7%	30 5.8*%

SECTION D: UTILIZATION OF PUBLIC EYE CARE SERVICES

4.4 UTILIZATION OF EYE CARE SERVICES.

4.4.1. General utilization of eye care services

Utilization of general eye care services was measured by having had an eye examination in the past, either from the public or private sector. Out of the 851 subjects that participated in our study, 474 (55.7%) indicated to have had their eyes examined and 366 have never had an eye examination (Table 4.11). Three (0.5%) females did not indicate whether they used available eye care services or not. Out of the 474 who had had their eyes examined, 187 (39.5%) were males and 287 (60.6) were females indicated (Table 4.20).

Table 4.20 Showing general utilization of eye care services and the use of public hospitals or clinic.

Questions on utilization of eye care services	Yes Respondents		
	N (%)	Male (N) %	Female (N) %
Have you ever had an eye examination?	474 (55.7%)	187 (39.5%)	287 (60.5)
Do you go to Public Hospital or Public Clinic for eye care services?	297 (62.97)	113 (38.0%)	184 (61.9%)

In general the respondents who had utilized the available eye care services were more than those who had never utilized the available services. Female respondents who had used the eye care services were more than males.

Analysis of the ages of respondents and the use of public eye care services showed no association ($p>0.05$). Also, gender of the respondents was not associated with the use of public eye care services ($p>0.05$). Educational level from no formal education to grade 7 was associated with the use of public eye care services ($p<0.05$). Level of education, grade 8 to post graduate was not associated with the use of public eye care services ($p>0.05$). Also, the household size was not associated with the use of public eye care services ($p>0.05$). Monthly income of the participant was not associated with the use of public eye care services ($p>0.05$). Further, the monthly income of each household was associated with the use of public eye care services ($p<0.05$).

The knowledge of eye care of the participants was associated with the use of public eye care services ($p<0.05$). There was no association between the gender of respondents with the knowledge that there would be a problem if one does not go for regular eye exams ($p>0.05$). There was association between gender of the participant and knowledge that there could be a problem if one doesn't have regular eye exams ($p<0.05$). There was an association between hospitals with knowledge that children 5 years and younger need eye examination ($p<0.05$). The knowledge regarding the need for regular eye care services was associated with the use of public eye care services ($p<0.05$). The knowledge on available public eye care services was associated with the use of public eye care services ($p<0.05$).

Knowledge regarding the need for regular eye care services was associated with the use of public eye care services ($p<0.05$). High blood pressure among the participants was associated with the use of public eye care services ($p<0.05$). Occurrence of diabetes among the participants was not associated with the use of public eye care services ($p>0.05$). The presence of eye problem among the participants was not associated with the use of public eye care services ($p>0.05$).

4.4.1.1. Cost of the available eye care services

Out of the 476 who had had an eye exam, 121 were tested free of charge, 158 paid R100 and less, 158 paid over R100, and 13 did not respond (Table 4.21).

Table 4.21 Showing cost of eye examination for the respondents.

Cost of eye examination	Respondents (N)	Percentages (%)
Free	121	25.4
R1 - R100	158	33.2
R100 and Over	184	38.7
Total	463	97.3

One hundred and eighty-four (38.7%) of the respondents paid R100 and more for their eye examination, and only 121 (25.4%) of the respondents received a free eye test. 13 (2.7%) respondents did not indicate how much was paid for the eye test.

4.4.1.2. Mode of payment for eye examination

Among those who paid, 209 (43.9%) used cash, 122 (25.6%) used Medical aid. (See Table 4.22)

Table 4.22 Showing how respondent paid for the eye examination.

Mode of Payment for eye examination	Respondents (N)	Percentages (%)
Free	121	25.5
Cash	209	44.1
Medical Aid	122	25.6
Credit Card / Store Card	16	3.4
Never had an eye examination	6	1.3
Total	474	100

Two hundred and nine (44.1%) of the respondent paid cash, and the least number 16 (3.4%) of respondents paid by credit card/store card.

4.4.2. Utilization of public eye care service

Utilization of public eye care services was evaluated by the response of having had an eye examination at a government institution in the past. Out of the 474 who had had an eye examination, a majority of 297 respondents utilized the public eye care services available. These included 113 (38.0%) males and 184 (62.0%) females (see Table 4.19).

Three hundred and sixty six subjects indicated that they never had their eyes tested. Out of the 366, 138 males and 228 females indicated to have not had their eyes tested. Of all the 474 eyes tested, 177 (37.0 %) of the test were carried out in private practice. A total of 297 (63.0%) eye tests were carried in public hospitals or clinics.

Out of the 297 of all those who visited the local hospital for eye care services, most of the respondents (15.5% males and 27.3% females) were tested in the last year, and the least (8.1% males and 1.1% female) were tested in the more than five years previously. Many, 331 respondents (40.2% males and 59.8% females) indicated that they have been examined by an optometrist in the local hospital. Most, 127 (36.2% males and 63.8% females) were examined in the last year, and the least, 57 (42.1% males and 57.9% females) were tested more than five years previously.

4.4.3. Utilization of public eye care service at different hospital areas

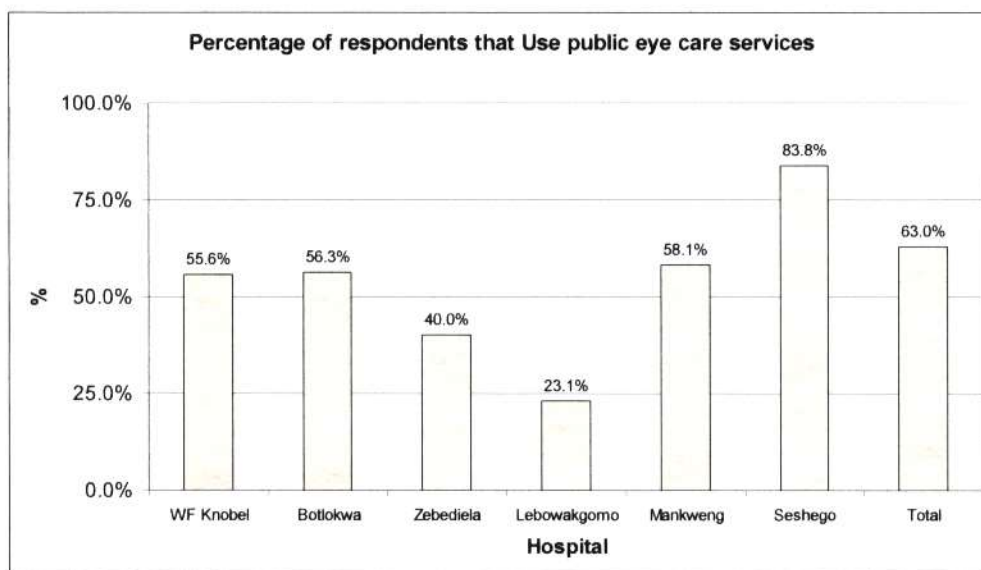
Of the 474 respondents that had had an eye examinations, 297 (62.7%) reported having been examined at a government hospital and 177 (37.3%) subjects were examined elsewhere. The highest usage rate is for respondents around Seshego hospital, where 83.3% of those who had eye examinations used public eye care services. The lowest usage rate is for respondents around Lebowakgomo Hospital, where only 23.1% of respondents who had eye examinations used public eye care services. Table 4.23 and Figure 4.2 show the usage rates around the hospitals surveyed. Utilization of public eye care service differ significantly among respondents in the areas around the hospitals in the survey (Pearson Chi-Square = 44.239, with 5 degrees of freedom). Out of 297 respondents who utilized public eye care service 55.6% used W.F Knobel hospital, 56.3% used Botlokwa hospital, 40% used Zebediela hospital, 23.1 % used Lebowakgomo hospital, 58.1% used Mankweng hospital and 83.8% used Seshego Hospital (Table 4.23). Fig 4.2 shows the bar graph of utilization of public eye care services amongst the five hospitals.

Table 4.23 Showing utilization of public eye care services in the six hospitals in Capricorn district.

Questions	Hospitals/Number and percentages(%) of yes respondents					
	Mankweng	Seshego	Botlokwa	W.F Knobel	Zebediela	Lebowa kgomo
Do you go to Public Hospital or Public Clinic for eye care services?	108 58.1%	114 83.8%	40 56.3%	25 55.6%	10 40.0%	3 23.1%

Majority 114 (83.8%) of the respondents who utilized the public eye care services were from Seshego Hospital. Lebowakgomo Hospital has the least number of respondents with only 3(23.1%).

Fig 4.1 A bar graph showing percentages of respondents that used public eye care services.



Majority of the respondents who used the eye care services were around the Seshego Hospital with 83.8 % utilization, and the least were around the Lebowakgomo hospital (23.1%).

4.4.4. Satisfaction level of users of eye care services

Out of the 317 who have been examined by an optometrist at the hospital, 224 (70.6 %) subjects were satisfied, and 110 (34.7%) were not satisfied with the services given. Many (59.3%) public eye care users in the Capricorn district were satisfied with the public eye care services that were available. The highest satisfaction rate of 90.4% was for Seshego Hospital area, and the lowest was 38.5% was for Lebowakgomo hospital area. Those who were satisfied gave reasons for their satisfaction as follows: They could see well with spectacles and doctors are patient with them. Those who were not satisfied gave reasons for dissatisfaction as follows: Long queues, could not see very well with the spectacles received, doctors were not patient with them, and they expected free spectacles.

Out of 474, 271 (57.1%) subjects 117 (24.7%) males and 154 (32.5%) females indicated that they have been examined by an ophthalmologist in the local hospital. Of all those who have examined by ophthalmologist in the local hospital, most of them 39 (14.4%) males and 60 (22.1%) females) were tested in the last year, and the least 21 (7.7%) males and 28 (10.3 %) females were tested more than five years previously.

4.5 ATTITUDES AND PERCEPTION TOWARDS PUBLIC EYE CARE SERVICES

4.5.1 Attitudes/ perception towards public eye care services at different locations

Generally, the respondents had a negative attitude towards public eye care services. When asked if they had ever tried to acquire spectacles from the public hospital, the area around Seshego Hospital gave the most positive responses (Table 4.23) At all other areas the responses were poor (see Table 4.23). One hundred and fifty seven respondents comprising of 66 (39.5%) of males and 91 (58.0%) of females reported that they would recommend their family, friends, etc for eye care in government hospitals. The most positive responses (55.6%) were from the Mankweng Hospital area. Others are shown in Table 4.24

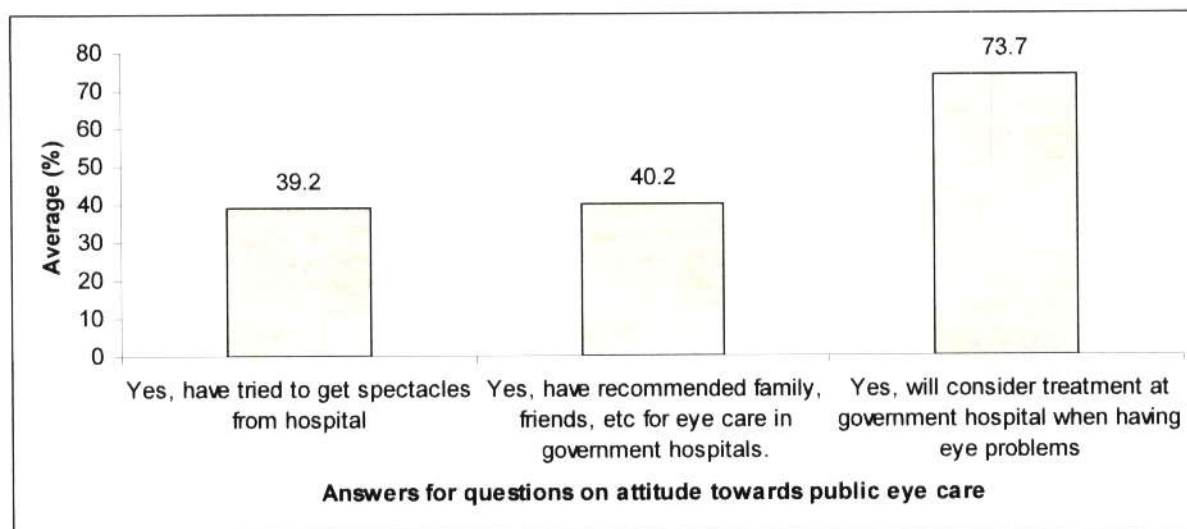
A significant number, 138 respondents, comprised of 46 (33.3%) of males and 92 (66.6%) of females reported that they would not recommend their family, friends, etc for eye care in government hospitals. The reasons given for not recommending

public eye care services include long queues, insufficient doctors, and long waiting periods. Many, 73.9% of the respondents responded positively when asked if they would consider treatment at government hospital when having eye problems.

Table 4.24 Showing attitude towards public eye care services at different hospital areas

Answers for questions on attitude towards public eye care	Hospital						
	WF Knobel	Botlokwa	Zebediela	Lebowakgomo	Mankweng	Seshego	Average
Yes, have tried to get spectacles from hospital	35.9%	43.3%	33.3%	14.8%	25.7%	83.2%	39.2%
Yes, have recommended family, friends, etc for eye care in government hospitals.	37.0%	14.5%	32.7%	15.4%	55.6%	43.6%	40.2%
Yes, will consider treatment at government hospital when having eye problems	79.3%	57.8%	86.5%	70.9%	77.2%	71.8%	73.7%

Fig 4.2 Attitude of respondents toward government eye care services by users of public services at different hospital areas



When asked if they will consider getting spectacles at government hospitals if found cheaper; 69 respondents, 30 (43.5%) males and 39 (56.5 %) females indicated that they will not get their spectacles from the government hospital even if found cheaper than any other place (Table 4.25). The reasons given included the following: Long queues, long waiting periods, and insufficient doctors.

Out of the 467 (55.1%) who indicated that they would get spectacles from hospitals if found cheaper, most respondents was for W.F Knobel hospital area with 69.6%, and the least was 26.5% for Botlokwa hospital area.

Table 4.25 Showing attitudes towards public eye care services between public eye care users and non users.

Answers for questions on attitude towards public eye care	Respondents who use public eye care services	Respondents who does not use public eye care services
Yes, have tried to get spectacles from hospital	64.6%	31.2%
Yes, have recommended family, friends, etc for eye care in government hospitals.	53.4%	48.6%
Yes, will consider treatment at government hospital when having eye problems	89.9%	64.0%

Fig 4.3 Attitude towards Government eye care services by the users and non-users.

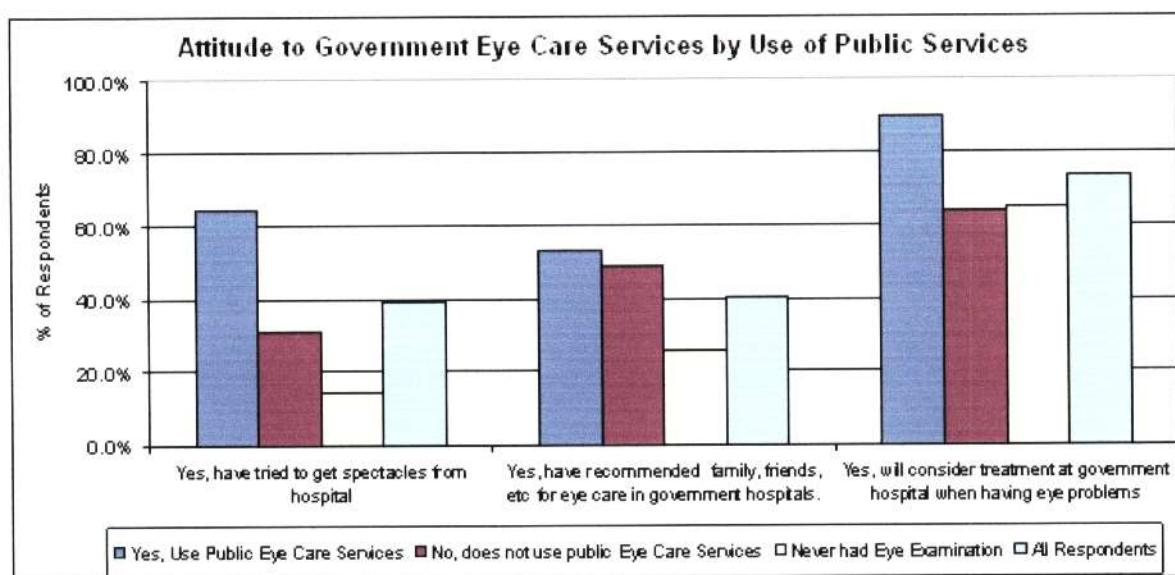
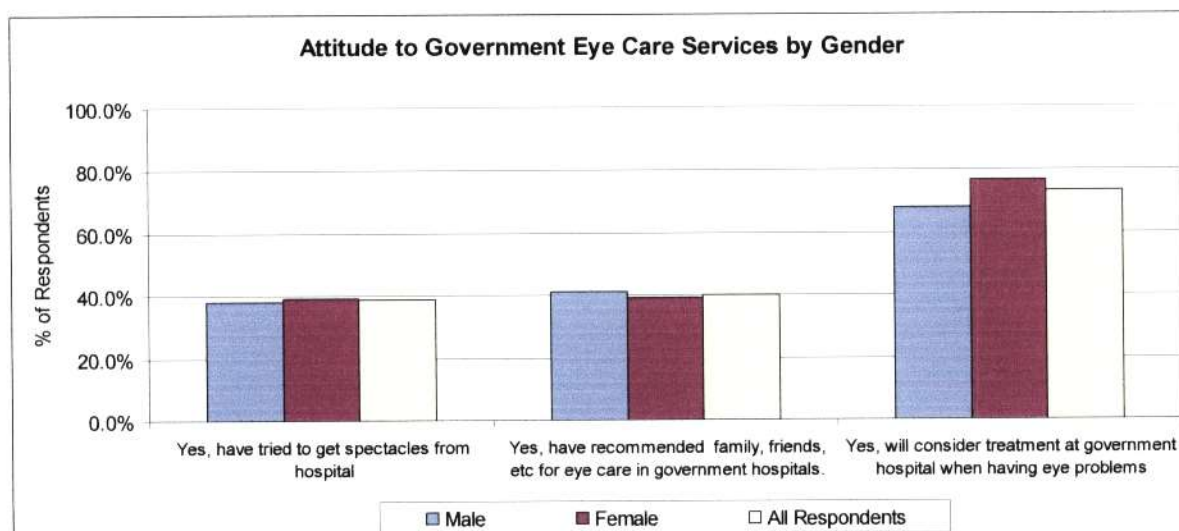


Table 4.26 Attitude to Government eye care services by gender of respondents.

Answers to questions on attitude towards public eye care services	Gender of respondents		
	Male	Female	All Respondents
Yes, have tried to get spectacles from hospital	38.1%	39.2%	38.7%
Yes, have recommended family, friends, etc for eye care in government hospitals.	41.3%	39.3%	40.1%
Yes, will consider treatment at government hospital when having eye problems	68.0%	76.9%	73.4%

Fig 4.4 Bar graph showing attitude towards Government eye care services in relation to gender of users



Many, 264 respondents, 102 (38.6%) males and 162 (61.4%) females reported that they would consider treatment at government hospital if they had eye problems. Thirty respondents, including 10 (33.3%) males and 20 (66.6%) females reported that they will not consider treatment at government hospital even if they had eye problems. Sixty nine respondents, comprised of 30 (43.5%) of males and 39 (56.5%) of females indicated that they will not get their spectacles from the government hospital even if found cheaper than anywhere else. Many, 69.6% were from W.F Knobel hospital area, and the least 26.5% were from the Botlokwa Hospital area.

4.6 RATING OF LEVEL OF CARE OF PUBLIC EYE CARE SERVICES BY THE USERS.

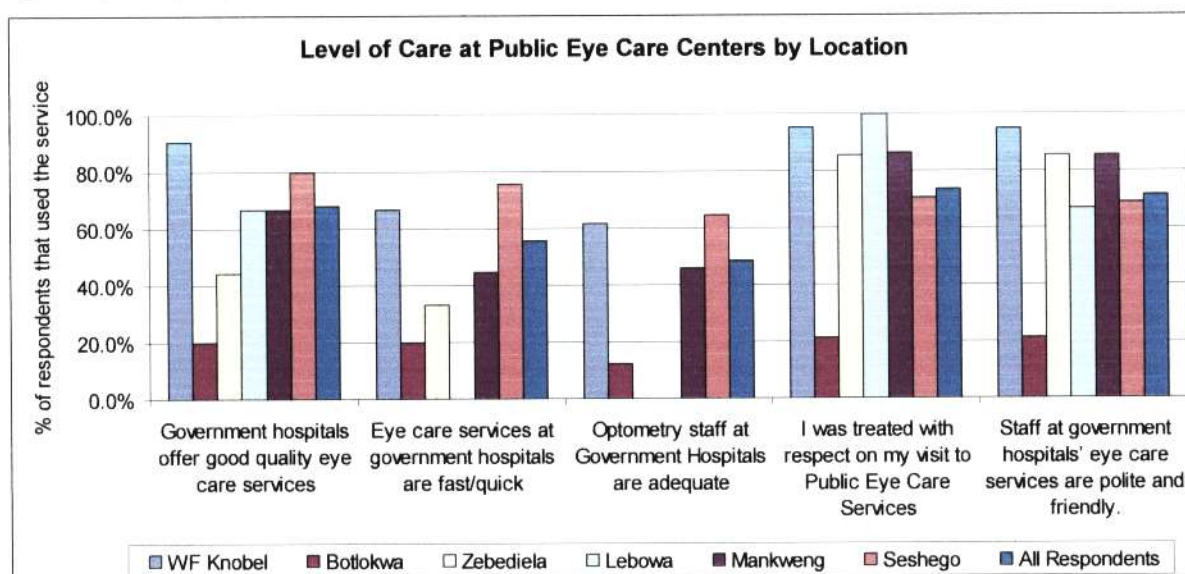
On average 68.3% respondents reported that Government hospitals offered good quality eye care services. Many respondents 90.5% were from WF Knobel hospital area and the least with 20.0% was for Botlokwa hospital area (see Table 4.27). On average 55.7% respondents reported that eye care services at government hospitals are fast/quick. Many respondents 75.9% were from Seshego hospital area and the least with 0.0% was for Lebowakgomo hospital area (see Table 4.27). On average 48.7% respondents reported that Optometry staff at government hospitals are adequate Many respondents 64.5% were from Seshego hospital area and the least with 0.0% was for Lebowakgomo and Zebediela hospital area (see Table 4.26). On average 73.8% respondents reported that they were treated with respect on their visit

at government hospitals. Many respondents (100%) were from Lebowakgomo hospital area and the least with 21.4 % was for Botlokwa hospital area (see Table 4.27).

Table 4.27 Showing how respondents rated public eye care service when asked questions regarding the quality of the service received at government hospitals.

Responses to questions regarding the quality of the service received at government hospitals.	Respondents per Hospital						All Respondents
	WF Knobel	Botlokwa	Zebediela	Lebowakgomo	Mankweng	Seshego	
Government hospitals offer good quality eye care services	90.5%	20.0%	44.4%	66.7%	67.0%	80.2%	68.3%
Eye care services at government hospitals are fast/quick	66.7%	20.0%	33.3%	0.0%	44.8%	75.9%	55.7%
Optometry staff at Government Hospitals are adequate	61.9%	12.5%	0.0%	0.0%	45.8%	64.5%	48.7%
I was treated with respect on my visit to Public Eye Care Services	95.2%	21.4%	85.7%	100.0%	86.5%	70.5%	73.8%
Staff at public hospitals' eye care services are polite and friendly.	95.0%	21.2%	85.7%	66.7%	85.6%	68.8%	71.3%

Fig 4.5 Bar graph showing how respondents rated public eye care service when asked questions regarding the quality of the service received at government hospitals.



4.7 RATING OF PUBLIC EYE CARE SERVICES BY THE USERS

There were 259 respondents who rated the public eye care services; Many 67 (25.9%) respondents 24 (22.9%) males and 43 (27.9%) females rated public eye

care services as poor. Only 28 respondents, 13 (8.4%) males and 15 (14.3%) females rated the public eye care services as excellent (see table 4.28)

Table 4.28 Showing the rating of the public eye care services of users when asked to rate services at government hospital that they have used.

If you have consulted eye care services at government hospital, how do you rate the services there?						
Service level		Poor	Good	Very Good	Excellent	Total
Gender of respondents(N) %	Male	24 22.9%	41 39.0%	25 23.8%	15 14.3%	105 100.0%
	Female	43 27.9%	59 38.3%	39 25.3%	13 8.4%	154 100.0%
Total(N)		67	100	64	28	259
Percentages		25.9%	38.6%	24.7%	10.8%	100.0%

There were 67 (25.6) respondents who rated the public eye care services as poor, Botlokwa hospital area was the leader with 54.6 %, and the least (25.0%) was for W.F Knobel hospital (Table 4.29). There were 100 (38.9%) respondents who rated the public eye care services as good, Mankweng hospital area was the leader with 48.1 %, and the least was 0.0% for Lebowakgomo hospital area (Table 4.29). There were 64 (24.7%) respondents who rated the public eye care services as very good, the most with 33.3% was for Zebediela hospital area, and the least was 0% was for Lebowakgomo hospital area (Table 4.29). There were 28 (10.8%) respondents who rated the public eye care services as excellent, the most was 35.0% for W.F Knobel hospital area, and the least 0% was for Lebowakgomo hospital area (Table 4.29).

Table 4.29 Showing how public eye services was rated by users per hospital area

Responses	WF Knobel	Botlokwa	Zebediela	Lebowakgomo	Mankweng	Seshego	All Respondents
Poor	15.0%	48.1%	16.7%	0.0%	13.4%	33.3%	25.6%
Good	25.0%	25.9%	33.3%	100.0%	54.6%	30.6%	38.9%
Very Good	25.0%	7.4%	33.3%	0.0%	26.8%	27.0%	24.8%
Excellent	35.0%	18.5%	16.7%	0.0%	5.2%	9.0%	10.7%

CHAPTER FIVE

5.1 DISCUSSIONS, CONCLUSION AND RECOMMENDATIONS

In this chapter, the results are discussed.

5.1.1 Introduction

The aim of this study was to investigate whether the public eye care services are adequately utilized or underutilized by the rural population in the Capricorn district, Limpopo Province. The findings will help in providing recommendations to the Provincial Department of Health, Limpopo province whether or not there is a need to embark on intensive eye care promotions and awareness campaigns regarding available public eye care services.

5.1.2 Demography

In South Africa, like in other parts of the world households are led by people 21 years and older, but in our study it was found that 12 households were led by people younger than 21 years. This child-led household might be due to the fact that HIV/Aids is killing parents and leaving children alone to fend for themselves. The results also showed a significant number of households led by people 65 years and older; this might be due to the fact that in some cases when parents died, the grand parents took over in raising the children. As shown in table 4.3, females were more than males in the study. This is in agreement with the national demography of South Africa (Statistics SA, 2001).

5.1.2.1 Age and utilization of public eye care services

In this study it was found that there was no statistically significant association between age and utilization of public eye care services ($p > 0.05$), and there was a significant association between the use of general eye care services and age ($p < 0.05$). This might be due to the fact that older people indeed use eye care services more but they don't just use public eye care services only, they also use private eye care services. Robin et al. (2004) reported that the odds of using general eye care increased significantly with age due to the fact that most eye diseases

manifest themselves during old age. Also, Schaumberg et al. (2002) reported that the likelihood of using general eye care increased with age due to the prevalence of diabetes, hypertension, rheumatoid arthritis, cataract, and related maculopathy. The present findings suggest that old age alone does not increase the use of public eye care services, but other factors are involved.

5.1.2.2 Gender and utilization of public eye care services

There was a general agreement that utilization of eye care services varied with gender. Fotouhi et al. (2006) reported that women were more likely to seek eye care services than men. Palagyi et al. (2008) also reported that women with either low vision or blindness were more likely to seek treatment than men. Schaumberg et al. (2002) reported that women tended to have frequent eye examination. In the present study it was found that there is no statistically significant association between the use of public eye care services and gender ($p>0.05$) and there was a significant association between the use of general eye care services and gender ($p<0.05$). This was due to the fact that women generally used eye care services both private and public, not just public eye care services.

5.1.2.3 Level of education and utilization of public eye care services

In this study it was found that there was a statistically significant difference between the use of public eye care services and level of education ($p<0.05$). The odds of using public eye care services decreased/increased with the level of education of the respondent. The higher the education level had the respondent, the less likely that the respondent would use public eye care services. This may be attributed to the fact that most of the people with higher education were employed, earned better salaries and were able to afford private health care insurance. Other studies also reported that utilization of eye care services varied with the individual's level of education. Barraza (1998) reported that there was a high utilization of eye services in the group with higher education due to the fact that they were learned and were more knowledgeable regarding how to look after their health. Orr et al. (1999) reported that people with more education were significantly more likely to see either an optometrist or ophthalmologist. Robin et al. (2004) reported that the odds of using eye care increased significantly with increasing level of education. Fotouhi et al. (2006) and Schaumberg et al. (2002) agreed with other reports that the likelihood of seeking eye

care was associated with higher levels of education of the user. Rural residents are usually uneducated and poor, which may contribute to their not using health services. Vilas et al. (2007) also reported that the majority of the rural population studied were illiterate and by definition blind (mainly due to cataract) and did not seek eye care services.

5.1.2.4 House hold size and utilization of public eye care services

It was found that the use of public eye care services was related to house hold size. There was a statistically significant difference between the use of public eye care services and house hold size ($p < 0.05$). The bigger the household size, the more likely the use of public eye care service due to the fact that there are usually limited financial resources. Dhaliwal and Gupta (2007) reported that insufficient family income due to indirect cost relating to bigger house hold responsibilities was an important barrier to utilization of eye care services.

5.1.2.5 Income level and utilization of public eye care services

In the present study it was found that the use of public eye care services was related to income level. There was a statistically significant difference between the use of public eye care services and income level ($p < 0.05$). The higher the income level, the less likely the use of public eye care service. This might be due to the fact that high earners are able to pay for health insurance and therefore more likely to go to private eye care providers, but the higher the income level the more likely the use of eye care services due to the fact that high earners can afford the available services. Other studies also agree with the fact that the higher the income level the more likely to use eye care services. Silva et al. (2002) reported that affordability was an important issue that limits utilization of eye care services by the poorest segments of the population. This agrees with the views of Robin et al. (2004) who reported that the odds of using eye care increased significantly with the higher the income the subject earns, and finances definitely affects the use of ophthalmic health care.

Schaumberg et al. (2002) also found that women with annual income exceeding \$50 000 were twice as likely to have had an eye examination within two years as compared with women with the lowest income and those with higher house hold incomes were particularly likely to have more frequent examination. Vilas et al.,

(2007), Dhaliwal and Gupta (2007), Palagyi et al. (2008), Owsley et al. (2006) in agreement with other researchers also reported that low utilization of eye care services in their studies was due to inability to afford the services because of low house hold income.

5.1.3 Knowledge of eye care and utilization of public eye care services

In the present study, it was found that there was a statistically significant association between the use of public eye care services and knowledge of eye care ($p < 0.05$). Knowledge investigated included how often a person should go for regular eye examination; whether children five years and younger need eye care services et cetera. Those who knew how often a person should go for regular eye examination and whether children five years and younger need eye care services, used eye care services more than those who did not know. This is in agreement with the findings of Bhagwan et al. (2006) and Schaumberg et al. (2000), who reported that poor knowledge regarding eye diseases results in poor utilization of available eye care services. People must be equipped with the knowledge that regular eye examination is important in order to prevent unnecessary visual impairment and blindness. This agrees with Vilas et al. (2007) who stated that the predominance of personal reasons like lack of knowledge, demonstrate that greater awareness regarding the importance of seeking treatment for visual impairment is needed to facilitate uptake of eye care services.

In the present study it was also found that lack of information about eye care for children also had a direct effect on utilization of eye care services. According to Vision and Hearing (2000), many infants and young children are at high risk for vision problems because of hereditary, prenatal, or perinatal factors. These individuals need to be identified and tested early and annually to make sure their eyes and visual system are functioning normally. In order to achieve that people ought to be well equipped with the correct knowledge. Amblyopia was also a leading cause of visual impairment in children. It resulted from visual problems in very early life. These problems could be prevented or reversed with early detection and appropriate intervention of a knowledgeable society.

5.1.4 Knowledge of available public eye care services and utilization.

In the present study it was found that there was a statistically significant association between the use of public eye care services and knowledge regarding available public eye care services ($p < 0.05$). Respondents who knew that there were eye care services at public hospitals and clinics were more likely to use these services than respondents who did not know. Their odds of using the services were almost 28 times the odds of those who did not know about the services. This is in agreement with other studies that utilization of eye care services depends on whether the subjects have knowledge of the available eye care services to them or not.

Chandrashekhara et al. (2007) reported that the reason for under-utilization of eye care services was that the rural population was not aware of the existing free-of-cost services by non-governmental organizations, and low-cost eye surgeries. Farmer et al. (2006) also reported that knowledge of where to get services and also who to consult had a big impact on eye care service utilization. (Robin et al., 2004), also reported that low utilization of eye care services was due to lack of knowledge of the available free eye care services. Palagyi et al. (2008) also reported that rural dwellers were almost four times more unlikely to seek eye care than their urban counterparts due to lack of awareness of the available eye care service.

5.1.5 Location and utilization of public eye care services

In the present study it was found that utilization of eye care services differs between the six different hospitals. Patients around Seshego hospital were the most likely to use public eye care services. The odds of using public eye care services were significantly lower when other hospitals are compared to Seshego Hospital. The odds was reduced by 85% when WF Knobel hospital was compared to Seshego, and they were reduced by 77% when compared with Botlokwa hospital, 94% when compared to Zebediela hospital, 94% when compared to Lebowakgomo hospital, 75% when compared to Mankweng hospital. These might be due to the fact that areas around Seshego hospital are nearer to the city, hence were more enlightened than all the other rural areas around the other hospitals. This is in agreement with other studies that knowledge of available eye care services increased the utilization of eye care services. Palagyi et al. (2008), Chandrashekhara et al. (2007), Farmer et al. (2006),

Bhagwan et al. (2006), and Schaumberg et al. (2000), reported that knowledge of available eye care services increased the utilization of eye care services.

Access to eye care service can be measured by the travel time required by public transportation to reach the nearest eye care provider (Silva et al., 2002). Cochrane (1995), Lostao et al. (2007), Gold et al (2006), (Silva et al. (2002), Chandrashekhar et al. (2007) reported that poor utilization of eye care services was due to lack of poor road systems , or lack of public transportation. In the present study, transport availabilities was not a problem as all the villages selected were situated within a radius of 5Km (which is a distance that can be walked by rural dwellers) from the Government hospitals offering public eye care services.

5.1.6 Need and utilization of public eye care services

Need involved individuals' perceived and evaluated functional capacity, symptoms, and general state of health (Keeffe et al., 2002). In general there was an agreement that utilization of eye care services varies with needs. Keeffe et al. (2002) reported that the odds of using eye care increased significantly with the presence of symptoms and general state of health. Schaumberg et al. (2002) also reported that the likelihood of using eye care increased with the presence of eye problems like cataract, and related maculopathy, and systemic diseases like diabetes, hypertension, and rheumatoid arthritis. In the present study it was found that there was no statistically significant association between the use of public eye care services and the need factor ($p>0.05$). This was due to the fact that subjects who had need factors would generally use eye care services both private and public, not just public eye care services because they had needs. However there was a statistically significant association between the use of public eye care services and rheumatoid arthritis ($p<0.05$). More research need to be done on this to evaluate further why people with rheumatoid arthritis used public eye care services more.

5.1.7 General utilization of public of eye care services

A potential eye care patient is the one with the motivation to seek services for an examination or for treatment of an eye disease (Silva et al., 2002). In general there was an agreement that despite the availability of eye care services in both rural and urban areas there was underutilization of available eye care services.

Fotouhi et al. (2006), reported that despite the available eye care services to the Tehran population in Iran, over one third of the participants in a survey had never had an ophthalmic examination, nor had over two fifth of the visually impaired population ever received any eye care service. Bhagwan et al. (2006) also reported that in villages in India where there were eye camps, only seven percent of people having eye problems turned up for eye care. Oduntan and Raliavhegwa (2001) also reported underutilization of eye care services in the Mankweng area of Limpopo Province, South Africa).

In our study it was found that utilization of eye care services was around 50%, and utilization of public eye care services was around sixty percent. In the study it was also noted that various factors like knowledge of the available public eye care services, attitude and perception towards the available services affected utilization of public eye care services. Those who knew about available eye care services and the need for regular eye care services used the services adequately, and also a positive attitude towards the available eye care services made the people to adequately utilize the available eye care services. Therefore in order to correct visual impairment and prevent avoidable blindness eye care promotions and awareness on available eye care services must be done intensively. Eye care providers must begin to educate individuals at an early age about the role of healthcare resources and how to better utilize them. People should know that visual impairment/blindness is not a normal part of life or ageing, but can be corrected or prevented. Better education about prevention of blindness and visual impairment will help to minimize them.

5.1.8 Effect of attitude /perception on utilization of public eye care services

According to Bradley (2002), attitudes were defined as personal view concerning the use of health care services and were characterized by four major themes namely: care providers, affordability, social environment, and self determination. Attitude was also described as having a direct effect on health care utilization. In the present study it was found that the use of public eye care services was affected by attitude towards public eye care services. The more people had a positive attitude towards the available services, the more likely they were to use public eye care services. The more people had a negative attitude towards the available services, the less likely they were to use public eye care services. This was in agreement with other studies

like Ashaye et al. (2006) which state that belief, attitudes, and practice of the predominantly rural population was still a major barrier to utilization of eye care services. Patel et al. (2006) in agreement with other studies in the world also reported that social attitude towards visual health issues along with need for seeking help for their visual impairment were the principal barriers to uptake of eye care services. Dhaliwal and Gupta (2007) also reported that major barriers to eye care utilization were more related to patient's attitude e.g. Ability to manage work, cataract not mature, could see clearly with the other eye, and busy with work.

5.1.9 Perceived quality and utilization of public eye care services

According to Palagyi et al. (2008) consumer satisfaction was an important factor in sustaining utilization of health care generally. In the present study it was found that the use of public eye care services was related to the level of quality of public eye care services available. The higher the public eye care rating the more the people are likely to utilize the available public eye care services. This is in agreement with other studies like Palagyi et al. (2008), Owsley et al. (2006) and Chandrashekhar et al. (2007) who reported that dissatisfaction was a major barrier to eye care utilization. Palagyi et al. (2008), further reports that in addition to an increase in service quantity there need to be an improvement in intervention and service quality, to facilitate equitable, acceptable and effective eye care. The development, implementation and monitoring of standards of care and treatment/ clinical guidelines is one mechanism by which this may be achieved. Owsley et al. (2006) also further states that trust was a critical element in medical care, and that trust of the physician was related to the degree to which patients seek routine medical care and comply with prescribed treatments

2 SIGNIFICANCE OF THE STUDY

Findings of the study established that there was inadequate utilization of available public eye care services among the target rural population. The reasons were established and recommendations for improvement will be made to the Provincial Department of Health and Social Development.

5.3 LIMITATIONS OF THE STUDY

A possible limitation of the study was that, the outcome results were from the answers on the Questionnaire (self-report of eye care attendance) and not from actual testing of the subjects. This might have caused recall bias from the subjects as they may choose to recall only some information.

5.4 CONCLUSION AND RECOMMENDATIONS

The main objective of this study was to investigate whether the public eye care services in the rural Limpopo Province are being adequately utilized or underutilized. It was found that on average, public eye care services are not being adequately utilized. Under-utilization of public eye care services is an indication of wasteful spending of public funds. A major reason for underutilization was the lack of knowledge of eye care services. Therefore, it is recommended that, in order to prevent avoidable visual impairment and blindness, strategies to improve the uptake of available public eye care services are required, that is, eye care promotions and awareness on available public eye care services must be done intensively. Government, non-governmental organizations and other stake-holders such as eye care providers must begin to educate individuals at an early age about the role of healthcare resources and how to better utilize them. People should know that public eye care facilities offers excellent eye care services and that visual impairment/blindness is not a normal part of life or ageing, but can be corrected or prevented. Better education about prevention of blindness and visual impairment will help to minimize them.

REFERENCES

1. Andersen R. Revisiting the behavioural model and access to medical care: Does it matter? *Journal of health and social behaviour* 1995 **36** 1-10.
2. Ashaye A, Ajuwon A, Adeoti C. Perceptions of blindness and blinding conditions in rural communities. *Journal of the national medical association* 2006 **98** 887-893.
3. Barraza J. The role of educational attainment in utilization of eye care services by Medicare recipients with diabetes mellitus. *Medicare* 1998 **15** 253-54.
4. Bhagwan J, Rastogi I, Malik J, Dhull C. Knowledge, attitude and practices regarding cataract surgery among severe cataract cases in Haryana. *Indian Journal of Community Medicine* 2006 **31** 66-68.
5. Bowling A. Research methods in health. Investigating health and health services. Second edition, 2002. Open University Press. Buckingham Philadelphia.
6. Bradley E. Health services research: Expanding the Anderson Model: The role psychosocial factors in long term care use (2002). Web page available at: <http://findarticles.com/p/articles/mi-m4149/is-5-37/ai-95105506/print/tag.04/07/2008>.
7. Bucher P J M, Ijsselmuiden C B. Prevalence and causes of Blindness in the Northern Transvaal. *British Journal of Ophthalmology* 1988 **72** 721-726.
8. Bylsma GW, Anhchuong L, Bickol N Mukesh, Taylor HR, McCarty CA. Utilization of Eye Care services by Victorians likely to benefit from eye care. *Clinical Experimental Ophthalmology*. 2004 **32** 573-577.

9. Cano, V. The importance of literature review.2005 [On line] Retrieved April 20 2007 from World Wide Web: [Http://www.uk-student.net/modules/wfsection/article.php?articleid=40](http://www.uk-student.net/modules/wfsection/article.php?articleid=40).
10. Chandrashekhar T, Bhat H, Pai R, Nair S. Utilization and barriers to cataract surgical services in rural South India, Results from a population based study. *Public Health* 2007 **121** 130-136.
11. Clendenin C, Coffey M, Marsh M, West S. Eye care utilization patterns in a rural county in Ireland: implications for service Delivery. *British Journal of Ophthalmology* 1997 **81** 972-975
12. Cochrane GM. Access, affordability and appropriate optometric eye care. *The South African Optometrist* 1995 **54** 42-43.
13. Cook C, Kluever H, Mabena L, Limburg H. Rapid assessment of cataract at pension pay points in South Africa. *British Journal of Ophthalmology* 2007 **91** 867-868.
14. Dandona R, Dandona R, Naduvilath TJ, McCarty CA, Rao GN. Utilization of eye care services in an urban population in Southern India: the Aravind Comprehensive Eye Survey. *British Journal of Ophthalmology* 2000 **84** 22-27.
15. Department of health Limpopo Province Provincial co-ordinator. Private conversation 01 Aug 2009.
16. Dhaliwal U, Gupta S. Barriers to uptake of cataract surgery in patients presenting to a hospital. *Indian journal of ophthalmology* 2007 **55** 133-136.
17. Ellwein LB, Frielin V, McBean AM, Lee PP. Use of eye care services among the 1991 Medicare population. *Ophthalmology* 1996 **103** 1732-1743.
18. Faal H, Minassian D, Sowa S, Foster A. National survey of blindness and low vision in The Gambia: Results. *British Journal of Ophthalmology* 1989 **73** 82-87.

19. Farmer J, Iversen L, Campbell NC, Guest C, Chesson R, Deans G, Macdonald J. Rural /Urban differences in accounts of patients' initial decision to consult primary care. *Health and Place* 2006 **12** 210-221.
20. Fletcher AF, Donoghue M, Devaram J, Thulasitaj RD, Scott S, Abdalla M, Shamugham CAK, Murugan B. Low uptake of Eye Services in Rural India. *Arch Ophthalmology* 1999 **117** 1393-1399.
21. Fotouhi A, Hashemi H, Mohammed K. Eye care utilization patterns in Tehran population: A population based cross-sectional study. *British Journal of Ophthalmology* 2006 **6** 4-12.
22. Ganz M, Ziming X , David G, Hunter M. Patterns of eye care use and expenditure among children with diagnosed eye conditions *Community Ophthalmology* 2006 **5** 7-9.
23. Gold D, Zufela B, Hodge W.G. Perspectives on low vision in Canada: a pilot study. *Canadian Journal of Ophthalmology* 2006 **41** 328-354.
24. Grosvenor T. Primary Health Optometry, fifth edition 2007. London. Butterworth.
25. Holden BA, Resnikoff S. The role of Optometry in vision 2020. *Community eye Health Journal* 2002 **5** 33-36.
26. Kaliyaperumal K. Guideline for conducting knowledge, attitude and practice (KAP Study). *Community Ophthalmology* 2004 **4** 7-9.
27. Katzellenbochen J, Joubert G, Karim S. Epidemiology. A manual for South Africa, 1997. Oxford University Press. South Africa.
28. Keeffe J, Wein L, McCarty C, Taylor H. Utilization of eye care services by urban and rural Australia. *British journal of Ophthalmology* 2002 **86** 24-27.

29. Kuang T.M, Tsai S.Y, Hsu W.M, Cheng C.Y, Liu J.H, Chou P. Correctable visual impairment in an elderly Chinese population in Taiwan: The Shipah eye study. *Investigative Ophthalmology and visual science* 2007 **48** 1032-1037.
30. Lewallen S, Courtright P. Blindness in Africa: present situation and future needs. *British Journal of Ophthalmology* 2001 **85** 897-903.
31. Lostao L, Regidor E, Geyers S, Aiach P. Patient cost sharing and social inequalities in access to health care in three western Europe countries. *Social Science and Medicine* 2007 **65** 367-376.
32. Morgan DW, Krejcie RV. Determining sample size for Research Activities. 1994. University of Minnesota. USA.
33. Moser C L, Martin-Baranera M, Vega F, Draper V, Gutierrez J, Mas J. Survey of blindness and visual impairment in Bioko, Equatorial Guinea. *British Journal of Ophthalmology* 2002 **86** 257-260.
34. Naidoo KS, Raghunandan A, Mashige KP, Govender P, Holden BA, Pokharel GP, Ellwein LB. Refractive error and visual impairment in African Children in South Africa. *Investigative Ophthalmology and Visual science* 2003 **44** 3764-3770.
35. National Government, South Africa. Constitution. Act No. 108. 1996.
36. Nirmalan P, Katz J, Robin AL, Krishnadas R, Ramakrishnan R, Thulasiraj RD, Tielsch J. Utilization of eye care services in rural South India: the Aravind Comprehensive Eye Survey. *British Journal of Ophthalmology* 2004 **88** 1237-1241.
37. Nirmalan P. Sheeladevi D, Tamilselvi S, Victor A, Vijayalakshmi P, Rahmathulla L. Perception of Eye disease and eye care needs of children among parents in rural South India: The Kariapatti Pediatric Eye Evaluation Project (KEEP). *Community Eye care* 2004 **2** 163-167.

38. Onyeluche C.E. Constraints to optometric practice in the third world. *Journal of American Optometric Association*. 1993 **64** 710-715.
39. Oduntan AO. Global visual impairment. *Epidemiological implications and preventions* 2005 1-2. University of Limpopo press.
40. Oduntan AO, Nthangeni ME, Ramudzuli MR, Madu SN. Causes and prevalence of low vision and blindness in black South African adults in the Limpopo Province. *South African Optometrist* 2003 **62** 8-15.
41. Oduntan AO, Raliavhegwa M. An evaluation of the impact of the eye care services delivered to the rural communities in the Mankweng Health sub-district of the Northern Province. *The South African Optometrist* 2001 **60** 71-76.
42. Orr P, Barron Y, Schein OD, Rubin GS, West SK. Eye care utilization by older Americans. *Ophthalmology* 1999 **106** 905-909.
43. Owsley C, McGwin G, Scilley K, Girkin C, Phillips J, Searcey K. Perceived barriers to care and attitudes about vision and eye care: Focus groups with older African Americans and eye care providers. *Investigative Ophthalmology and visual Science* 2006 **47** 2797-2802.
44. Palagyi A, Ramke J, du Toit R, Brian G. Eye care in Timor-Leste: a population-based study of utilization and barriers. *Clinical and experimental ophthalmology* 2008 **36** 47-53.
45. Pampalon R, Martinez J, Hamel D. Does living in rural areas make a difference for health in Quebec? *Health and place* 2005 **12** 421-435.
46. Patel D, Baker H, Murdoch I. Barriers to uptake of eye care services in the Indian population living in Ealing, London. *Health education journal* 2006 **65** 267-276.

47. Pearsall J. Concise Oxford Dictionary 10th edition 1999, Oxford University Press, Great Britain.
48. Robin A, Nirmalayan P, Ramasamy K, Rengappa R, Katz J, Tielsch J, Ravilla D, Friedman M. The utilization of eye care services by persons with Glaucoma in rural South India. *Trans American Ophthalmology Soc* 2004 **102** 47-52.
49. Resnikoff S, Pascolini D, Etya'ale D, Kocur I, Parajasegaram R, Pokharel G P, Mariotti S P. Global data on visual impairment in the year 2002. *Bulletin of the World Health organization* 2004 **82** 844-851.
50. Resnikoff S, Pascolini D, Etya'ale D, Mariotti S P, Pokharel G P, Global magnitude of visual impairment caused by uncorrected refractive errors in 2004. *Bulletin of the World Health organization* 2008 **86** 1-80.
51. Sacharowitz HS. Visual impairment in South Africa: achievements and challenges. *The South African Optometrist* 2005 **64** 139-149.
52. Sandison A. Phelophepa Health Care Train. Available at <http://www.nmmu.ac.za/default.asp?=39467bhcp=1>
53. Saunders M and Lewis P. *Research methods for business Students* 2000. London. Butterworth Publishers.
54. Schaumberg D, Christen W, Glynn R, Buring J. Demographic predictors of eye care utilization among women. *Medical care* 2000 **38** 638-646.
55. Sheni DDD. The future of optometry in Africa. *The South African Optometrist* 1996 **55** 16-18.
56. Silva JC, Bateman JB, Contreras F. Eye disease and care in Latin America and the Caribbean. *Survey of Ophthalmology* 2002 **47** 267-274.

57. Smith TST, Frick KD, Holden BA, Frickie TR, Naidoo KS. Potential lost productivity from the global burden of uncorrected refractive error. *Bull World Health Organ* 2009 **87** 431-437.
58. Snellingen T, Shrestha BR, Gharti MP, Upadhyay MP, Pokhrel RP. Socioeconomic barriers to cataract surgery in Nepal: *the South Asian cataract management study*. *British Journal of Ophthalmology* 1998 **82** 1424-1428.
59. Soanes C. South African Pocket Oxford Dictionary 9th edition 2000. Oxford University Press Southern Africa. Cape Town.
60. Statistic South Africa, 2001, available at: <http://www.statssa.gov.za>.
61. Vilas K, Sannapaneni K, Ramaswamy S, Ravi T, Gullapalli R. Barriers to accessing eye care services among visually impaired populations in rural Andhra Pradesh, South India. *Community eye care* 2007 **55** 365-371.
62. Vision and Hearing. Healthy people 2010, available at: <http://phpartners.org/hp/hearing.html>.
63. Walls LL. Issues for optometrist relating to inter-professional relations in a hospital and medical center. *Optom Vision Science* 1996 **73** 307-308.
64. Whitfield R, Schwab L, Ross-Degnan D, Steinkuller P, Swarwood J. Blindness and eye disease in Kenya: ocular status survey results from the Kenya Rural Blindness Prevention Project. *British Journal of Ophthalmology*. 1990 **74** 333-340.
65. World Health Organization (WHO). Elimination of affordable visual disability due to refractive errors. (WHO/PBL/00.79). Geneva: World Health organization, 2000.
66. World Health Organization. International statistical classification of disease and related health problems 10th revision. Volume 1 Disease tabular list World Health organization, 1992.

APPENDICES

Appendix A Table showing the name of hospital, gender and sample size of the selected 38 villages within 5km radius around each hospital.

	Hospital Name	Selected Villages	Gender of HH Head		Total	Proportion of male headed HH	Sample size
			Male	Female			
1	WF Knobel	Ga-Mmabasotho	235	290	525	45%	15
2	WF Knobel	Ga-Ngwetsana	172	266	437	39%	12
3	WF Knobel	Ga-Rametlwana	218	313	531	41%	15
4	WF Knobel	Ga-Ramoshwane	218	378	596	37%	17
5	WF Knobel	Ga-Rampuru	138	222	359	38%	10
6	WF Knobel	Olympus	141	205	346	41%	10
7	WF Knobel	Rapitsi	166	321	487	34%	14
8	WF Knobel	Chloe	27	56	83	33%	2
9	Botlokwa	Mangata	168	232	400	42%	11
10	Botlokwa	Mmatseke	461	860	1321	35%	37
11	Botlokwa	Mphakane 1	1106	1625	2730	41%	76
12	Botlokwa	Mphakane 3	327	578	905	36%	25
13	Botlokwa	Ramatsowe	302	451	753	40%	21
14	Botlokwa	Sefene	126	151	277	45%	8
15	Zebediela	Ga-Madisaleolo	228	358	586	39%	16
16	Zebediela	Ga-Phaswana	341	622	963	35%	27
17	Zebediela	Madishaditoro	376	611	987	38%	28
18	Zebediela	Mapatjakeng	36	104	140	26%	4
19	Zebediela	Magatle	603	849	1452	42%	41
20	Lebowakgomo	Mamaolo	573	863	1436	40%	40
21	Lebowakgomo	Makurung	301	642	943	32%	26
22	Lebowakgomo	Malemang	12	75	87	14%	2
23	Lebowakgomo	Serobaneng	165	257	422	39%	12
24	Mankweng	Badimong	957	1353	2310	41%	64
25	Mankweng	Megoring	845	1186	2031	42%	57
26	Mankweng	Ga-Motholo	355	537	892	40%	25
27	Mankweng	Ga Thoka	708	791	1499	47%	42
28	Mankweng	Mamotintane	153	283	436	35%	12
29	Mankweng	Syferkuil	33	48	81	41%	2
30	Mankweng	Thakgalang	677	724	1401	48%	39
31	Mankweng	Nchechane	234	187	421	56%	12
32	Mankweng	Makanye	729	949	1678	43%	47
33	Mankweng	Ga-Magowa	234	261	495	47%	14
34	Seshego	Murasie	153	65	219	70%	6
35	Seshego	Bloedrivier	86	35	120	72%	3
36	Seshego	Blood River	833	711	1544	54%	43
37	Seshego	Perskebult	1972	1753	3725	53%	104
38	Seshego	Makgofe	1208	1005	2213	55%	62
			15617	20217	35831	44%	1000

QUESTIONNAIRE NUMBER:

INFORMATION SHEET

QUESTIONNAIRE (ENGLISH VERSION)

UTILIZATION OF PUBLIC EYE CARE SERVICES BY THE RURAL POPULATION OF CAPRICORN DISTRICT, LIMPOPO PROVINCE, SOUTH AFRICA.

Dear participant

This survey is being conducted in Capricorn district of South Africa, to assess the knowledge, perceptions and attitudes of rural dwellers concerning public optometry services. The outcome of this study will assist in guiding our health department provincially to address the distribution and equipping our health facilities with optometrist where there is a need. Your input in completing this questionnaire is very valuable. It should take you not longer than 15 minutes to complete this questionnaire and your responses will be kept strictly confidential. Your co-operation is greatly appreciated.

N.B: PLEASE FILL IN THE SPACES AND TICK WHERE APPROPRIATE.

PLEASE USE CAPITAL LETTERS

DECLARATION BY FIELD WORKER

DECLARATION BY FIELDWORKER

I hereby declare that I explained to the respondent that he or she is participating freely in this research. I also explained to the respondent that he or she may stop this interview at any point and that such a decision would not in any way affect them negatively.

I explained to the respondent that this is a research project whose purpose is not necessarily to benefit him or her personally.

I explained to the respondent that the answers he or she will provide during the interview would remain confidential.

.....
Signature of enumerator

Date:

SECTION A DEMOGRAPHIC INFORMATION

A.1. Age and Gender of Household Head

(a) Age in years	(b) Gender	
	Male	1
	Female	2

**A.2. Marital status of Household Head (HH).
(Tick only one option)**

Single	1
Married	2
Divorced	3
Widowed	4
Living Together but not married	5

A.3. Highest level of education attained by the Household Head. (Tick only one option)

No formal Education	1
Up to grade 7	2
Grades 8 - 12	3
Undergraduate degree/Diploma	4
Postgraduate Degree	5

A.4. Please indicate the total number of people living in your household as of today

Single person household	1
2 or 3 members	2
4 or 5 members	3
6 or more members	4

A.5. What is the monthly household income?

	HH	HH+M'S
R0 – R1200	1	1
R1201 – R3000	2	2
R3001 – R10000	3	3
Above R10000	4	4
Refuse to answer	5	5

SECTION B KNOWLEDGE ON EYE CARE SERVICES

B.6. Is there any problem if you don't go for regular eye exams?

Yes	1
No	2

B.7. Give reasons for your answer

--

B.8. How often should a person go for regular eye examination?

--

B.9. Give reasons for your answer

--

B.10. Do children 5 years and younger need an eye examination?

Yes	1
No	2

B.11. Give reasons for your answer

--

B.12. Do you know that there are eye care services in government hospitals?

Yes	1
No	2

B.13. Do you know that there are optometrists in government hospitals?

Yes	1
No	2

B.14. Do you know that you can get glasses at a cheaper rate in government hospitals?

Yes	1
No	2

SECTION C: NEED FOR EYE CARE SERVICES

C.15. Have you or any member of your household ever experienced any eye problems?

Yes	1
No	2

C.16. Have you or any member of your household ever experienced headaches after reading?

Yes	1
No	2

C.17. Are you or any member of your household suffering from the following systemic diseases? (you can select more than one option)

	Head	Member
High blood pressure	1	1
Diabetes Mellitus	2	2
Rheumatoid Arthritis	3	3
Others (Please specify)	4	4
Never had an eye examination	5	5

SECTION D: UTILIZATION OF EYE CARE SERVICES

D.18. Have you ever had an eye exam?

Yes	1
No	2

D.19. Do you go to public hospital or clinic for eye care services?

Yes	1
No	2

D.20. What was the cost of your eye examination?

Free	1
R1-R100	2
R101 and over	3
Never had an eye examination	4

D.21. How did you pay for your eye examination?

Free	1
Cash	2
Medical Aid	3
Credit Card / Store Card	4
Never had an eye examination	5

D.22. Have you ever been examined by an optometrist at your local public hospital?

Yes	1
No	2

D.23. Were you satisfied with the services given?

Yes	1
No	2

D.24. Give reasons for your answer

--

D.25. Have you ever been examined by an Ophthalmologist at your local public hospital?

Yes	1
No	2

D.26. When was the last time you were examined by an Ophthalmologist at your local public hospital?

Less than a year	1
1 – 2 years	2
More than 2 years but less than 5 years	3
5 or more years	4
Never had an eye examination	5

SECTION E: ATTITUDES TOWARDS AND PERCEPTION OF PUBLIC EYE CARE SERVICES

E.27 If hospital spectacles were found to be cheaper, have you ever tried to get them from there?

Yes	1
No	2

E.28. Give reasons for your answer

--

E.29. Have you ever recommended your family, friends, etc for eye care in government hospitals?	
Yes	1
No	2
E.30. Give reasons for your answer	

E.31. Will you ever consider treatment at government hospital when having eye problems?	
Yes	1
No	2

E.32. If you have ever consulted at government hospital, do you feel that government hospitals offer good quality eye care services?	
Yes	1
No	2
Never had an eye exam	3
E.33. Give reasons for your answer	

E.34. If you have consulted at government hospital, do you feel that eye care services at government hospitals are fast/quick?	
Yes	1
No	2
Never had an eye exam	3

E.35 Give reasons for your answer

--	--

E.36. If you have consulted for eye care at government hospital, do you feel that optometry staff is adequate?

Yes	1
No	2
Never had an eye exam	3

E.37. Give reasons for your answer

--	--

E.38. If you have consulted for eye care services at government hospital, were you treated with respect on your visit?

Yes	1
No	2
Never had an eye exam	3

E.39. Give reasons for your answer

--	--

E.40. If you have consulted for eye care at government hospital, do you feel that staff at government hospitals' eye care services is polite and friendly?

Yes	1
No	2
Never had an eye exam	3

E.41. Give reasons for your answer

--

E.42. If you have consulted for eye care services at government hospital, how do you rate the services there?

Poor	1
Good	2
Very Good	3
Excellent	4
Never had an eye exam	5

THANK YOU FOR COMPLETING THE QUESTIONNAIRE.

QUESTIONNAIRE NUMBER:

INFORMATION SHEET

QUESTIONNAIRE (NORTHERN SOTHO VERSION)

TŠHOMIŠO YA DITIRELO TŠA HLOKOMELO YA MAHLO KA BATHO BA DINAGAMAGAE TŠA SEDIKODIKO SA CAPRICORN, PROFENSENG YA LIMPOPO, AFRIKA BORWA.

Go motšekarolo

Dinyakišišo di diriwa sedikodikong sa Capricorn, Afrika Borwa, go tšweletša kelo ya tsebo, dikgopolo le mekgwa ya batho ba dinagamagae mabapi le ditirelo tša setšhaba tša mahlo. Dipoelo tša dinyakišišo di tla hlahla kgoro ya maphelo ya profense ya Limpopo go aba le go tlabakela mafelo a maphelo ka didirišwa tša mahlo mo go hlokegago. Dikakanyo tša gago mabapi le dipotšišo tše di tla ba mohola. Ga go a swanela go go tšea metsotso ya go feta e lesomehlano (15) go araba dipotšišo tše, gomme le dikarabo tša gago e tla ba sephiri. Tšhomišano ya gago e lebogwa kudu.

HLOKOMELA: KA KGOPELO TLATŠA DIKGOBA O BE O SWAYE MO GO SWANETŠEGO.

ŠOMIŠA DIHLAKAKGOLO HLE.

DECLARATION BY FIELDWORKER

BOIKANO BJA MOTŠEIŠA KAROLO

Ke ikana gore ke hlaloseditše motšekarolo gore o tšea karolo a lokologile mo dinyakišišong tše. Ke mo hlaloseditše le gore a ka emiša go tšea karolo nako efe goba efe ge a rata gomme aka se amege felo.

Ke mo hlaloseditše le gore dipoelo tša dinyakišišo tše ga se tša go hola yena ka boyena a nnoši.

Ke mo hlaloseditše le gore dikarabo tsa gagwe ge a tšea karolo e tlo ba tša sephiri.

.....
Signature of enumerator

Letšatši:

KAROLO A: DIPALOPALO TŠA BATŠEA KAROLO

A.1. Mengwaga le bong bja hlogo ya lapa.

a) Mengwaga	(b) Bong	
	Male	1
	Female	2

**A.2. Maemo a Lenyalo a Hlogo ya lapa
(Kgetha e tee feela)**

Ga wa nyalwa	1
O nyetšwe	2
O hladile	3
O hlokofaletšwe ke molekane	4
O dula le molekane ka ntle ga lenyalo	5

A.3. O fihlile kae ka dithuto? (Kgetha e tee feela)

Ga wa tsena sekolo	1
O fihlile go mphato 7	2
O fihile go Mphato 8 - 12	3
O na le Dikerii/Diploma	4
O na le Dikerii ya ka godimo	5

A.4. Lapa la gago le na le batho ba ba kae go fihla lehono.

Motho o tee	1
2 goba 3 ya batho	2
4 goba 5 ya batho	3
6 le go feta ya batho	4

A.5. O gola bokae ka kgwedi ge re ela ka diranta?

	Hlogo	Kamoka (HH+M)
R0 – R1200	1	1
R1201 – R3000	2	2
R3001 – R10000	3	3
Ka godimo ga R10000	4	4
Ga o nyake go araba	5	5

KAROLO B: TSEBO KA GA DITIRELO TŠA HLOKOMELO YA MAHLO

B.6. Naa go na le bothata ge motho a sa se ye go hlahlobiwa mahlo kgafetša- kgafetša?

Ee	1
Aowa	2

B.7. Hlalosa mabaka a karabo ya gago

--

B.8. Motho o swanetše go hlahlobiwa mahlo kgafetšakgafetša ka morago ga nako e kakang?

--

B.9. Hlalosa mabaka a karabo ya gago

--

B.10. Naa go bohlokwa gore bana ba mengwaga ye mehlano ba hlahlobiwe mahlo?

Ee	1
Aowa	2

B.11. Efa mabaka a karabo ya gago.

--

B.12. O a tseba gore go na le ditirelo tša hlokomelo ya mahlo dipetleleng tša mmušo?

Ee	1
Aowa	2

B.13 O a tseba gore go na le dingaka tša mahlo dipetleleng tša mmušo?

Ee	1
Aowa	2

B.14. Na o tseba gore o ka hwetša digalase tša theko ya fase go tšwa dipetleleng tša mmušo?

Ee	1
Aowa	2

KAROLO C: NYAKEGO YA DITIRELO TŠA HLOKOMELO YA MAHLO**C15. Naa wena goba o mongwe wa ba lapa la gago nkile la bolawa ke mahlo?**

	Hlogo	Leloko
Ee	1	1
Aowa	2	2

C16. Naa wena goba o mongwe wa ba lapa la gago nkile la opa ke hlogo ge le badile?

	Hlogo	Leloko
Ee	1	1
Aowa	2	2

C.17. Naa wena goba o mongwe wa ba lapa la gago o bolawa ke bolwetši bya mmele go swana le:

	Hlogo	Leloko
Madi a magolo	1	1
Bolwetši bja swikiri	2	2
Bolwetši bja marapo	3	3
Tše dingwe (Hlalosa)	4	4
Ga gona bolwetši	5	5

KAROLO D: TŠHOMIŠO YA DITIRELO TŠA HLOKOMELO YA MAHLO**D.18. Naa o kile wa hlahlobiwa mahlo ke bahlahlobi ba mahlo? (Kgetha e tee feela)**

Ee	1
Aowa	2

D.19. Naa o hlahlobilwe sepetleleng goba kliniking ya mmušo? (Kgetha e tee feela)

Ee	1
Aowa	2

D .20. O lefile bokae?

Mahala	1
R1-R100	2
R101 le go feta	3
Ga sa ba waka wa hlahlobiwa mahlo	4

D.21. O lefile bjang gore o hlahlobiwe mahlo?

Mahala	1
O šomišitše tšhelete	2
O šomišitše Medikhale Aid	3
Keredit Karata / Karata ya mabenkele a magolo	4
Ga sa ba waka wa hlahlobiwa mahlo	5

D.22. O kile wa hlahlobiwa ke ngaka ya mahlo sepetleleng sa geno?

Ee	1
Aowa	2

D.23. O kgotsofaditšwe ke ditirelo tšeo naa?

Ee	1
Aowa	2

D.24. Hlalosa mabaka a karabo ya gago

--	--

D.25. O ile wa hlahlobiwa ke matwetwe (ophthalmologist) wa mahlo sepetleleng sa geno sa mmušo?

Ee	1
Aowa	2

D.26. Ke neng la mafelelo moo o kilego waya sepetleleng sa geno sa mmušo sa kgauswi go hlahlobiwa mahlo ke matwetwe wa mahlo?

Ka fase ga ngwaga o tee	1
Mengwaga e 1 – 2	2
Go feta mengwaga e 2 eupša ka fase ga e mehlano	3
Go feta mengwaga e mehlano	4
Gas a ba waka wa hlahlobiwa mahlo.	5

**KAROLO E: MEKGWA LE DIKGOPOLO TŠA SETŠHABA MABAPI LE
DITIRELO TŠA HLOKOMELO YA MAHLO**

E.27. Ge digalase go tšwa sepetlele e le tša theko ya fase, o kile wa leka go di tšea gona?

Ee	1
Aowa	2

E.28. Efa mabaka a karabo ya gago.

--

E.29. Naa nkile wa hlohleletša ba lapa, bagwera bjalobjalo go hlahlobiwa mahlo dipetleleng tša mmušo?

Ee	1
Aowa	2

E.30. Efa mabaka a karabo ya gago.

--

E.31. O ka leka go hwetša kalafo dipetleleng tša mmušo ge o e na le mathata a mahlo?

Ee	1
Aowa	2

E.32. Ge o ile wa hlahlobiwa dipetleleng tša mmušo, o bona ge di efa ditirelo tša hlokomelo ya mahlo tša maemo a godimo?

Ee	1
Aowa	2
Ga sa ba waka wa šomiša ditirelo tša mmušo tša mahlo	3

E.33. Efa mabaka a karabo ya gago

--

E.34. Ge o ile wa ya go hlahlobiwa sepetleleng sa mmušo, o bona ditirelo tša bona e le tša bonako?

Ee	1
Aowa	2
Ga sa ba waka wa šomiša ditirelo tša mmušo tša mahlo	3

E.35. Efa mabaka a karabo ya gago

--

E.36. Ge o ile wa ya go hlahlobiwa sepetleleng sa mmušo, o bona bašomi ba gona ba ditirelo tša hlokomelo ya mahlo ba lekane naa?

Ee	1
Aowa	2
Ga sa ba waka wa šomiša ditirelo tša mmušo tša mahlo	3

E.37. Efa mabaka a karabo ya gago

--

E.38. Ge o ile wa ya go hlahlobiwa sepetleleng sa mmušo, o filwe hlomphe ge o fihla moo?

Ee	1
Aowa	2
Ga sa ba waka wa šomiša ditirelo tša mmušo tša mahlo	3

E.39. Efa mabaka a karabo ya gago

--	--

E.40. Ge o ile wa ya go hlahlobiwa sepetleleng sa mmušo, o bona bašomi ba gona ba ditirelo tsa mahlo ba na le lethabo le boikokobetšo?

Ee	1
Aowa	2
Ga sa ba waka wa šomiša ditirelo tša mmušo tša mahlo	3

E.41. Efa mabaka a karabo ya gago

--	--

E.42. Ge o ile wa hlahlobiwa sepetleleng sa mmušo, o ka fa kelo ya ditirelo tša hlokomelo ya mahlo bjang?

Go se kgahliše	1
Gabotse	2
Gabotsebotse	3
Maemo a phagamego	4
Ga sa ba waka wa šomiša ditirelo tša mmušo tša mahlo	5

RE LBOGA GE O KGONNE GO FETOLA DIPOTŠIŠO TŠE

APPENDIX C

APPLICATION FORM FOR PROPOSED RESEARCH PROJECT UNIVERSITY OF LIMPOPO

MEDUNSA CAMPUS RESEARCH ETHICS COMMITTEE

A. PARTICULARS OF APPLICANT/CHIEF RESEARCHER

Title: **Ms** First name: **Mologadi** Surname: **Ntsoane**

Department: **Optometry** Tel: **(015) 223 0730**

School: **Health Care Sciences**

B. DETAILS OF RESEARCH PROJECT

(Tick appropriate block(s) with a 'x')

1.a New project or : Continuation of project

1.b Independent research : or : Contract research:

Post-graduate research: or : Undergraduate research :

Degree (specify) **MPH**

At which university is the degree registered? **University of Limpopo, Turfloop Campus**

2.a. Title of project: **Utilization of public eye care services by the rural population of Capricorn district, Limpopo Province, South Africa**

b. Co-workers (Not for post-graduate research. See Guidelines)

Name	Department/Institution	Signature
Not applicable		
Not applicable		
Not applicable		
Not applicable		
Not applicable		

c. Research Co-ordinator (In the case of independent or contract research)

Name	Department/Institution	Signature
Not applicable	-	-

d. Supervisor (In the case of post-graduate research)

Prof. AO Oduntan		

e. Co-supervisor (In the case of post-graduate research)

Dr. MBL Mpolokeng		

Hospital Superintendent/Health Care Manager

Name	Department/Institution	Signature
Not applicable	-	

g. Other involved departmental heads

Name	Department/Institution	Signature
-	-	

C. SPECIAL REQUIREMENTS

Will the research involve the following?

	Yes	No		Yes	No
Experimental animals		X	Approval from Animal ethics Committee attached (separate application form required)		
Special apparatus		X	Is it available at Medunsa?		
Special drugs (medicaments)		X	Explanation of who will supply the drugs attached		
Radio isotopes		X	Completed radio Isotopes form attached (Appendix 4)		
Special laboratory facilities		X	Is it available at Medunsa?		
Electron microscopy		X	Completed Electron microscope form attached (Appendix 3)		
Health care services		X	Signature of health care manager attached		

Statistical analysis	X	Has a statistician been consulted? If yes, attach form. (Appendix 2) If no explain.	X
----------------------	---	---	---

D. ETHICAL ISSUES

1. *Indemnity*

If a hospital (human, dental or veterinary) will be involved, please attach the written approval of the Superintendent. Should the use of the service laboratories be required, attached a letter of consent of the hospital management that this is in order.

(N/A)

2. *Consent*

Will human volunteers form part of the survey? If so, kindly modify the attached form, specifically for your project. (Appendix 1)

E. BUDGET

Who will finance this project? (Tick appropriate block with a "x")

University of Limpopo Campus)	Health Department	Self	X	Other (specify)
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Please indicate the institutions where application has been made for financial support or where it is intended to apply for financial support. **(N/A)**

MRC	NRF	CSD	Other (specify)
-----	-----	-----	-----------------

NB: Approval of the research project does **NOT** imply that the requested funds will be made available to the applicant.

G. DECLARATION BY RESEARCHER(S)

Should this project be approved, I fully understand the conditions under which I am authorized to carry out the above-mentioned research. I guarantee to ensure compliance with these approved conditions. Furthermore, I undertake **not to change the procedure as detailed in the protocol but will submit a further application to the Research Committee if changes become necessary**

SIGNATURE: _____ **DATE:** _____

CHIEF RESEARCHER:

SIGNATURE: _____ **DATE:** _____

HEAD OF DEPARTMENT

SIGNATURE: _____ **DATE:** _____

DIRECTOR OF SCHOOL

APPENDIX D

UNIVERSITY OF LIMPOPO CONSENT FORM

Statement concerning participation in a Research Project.

Name of Project: **Utilization of public eye care services by the rural population of Capricorn district, Limpopo Province, South Africa**

I have read the information on the aims and objectives of the proposed study and was provided the opportunity to ask questions and given adequate time to rethink the issue. The aim and objectives of the study are sufficiently clear to me. I have not been pressurized to participate in any way.

I understand that participation in this Project is completely voluntary and that I may withdraw from it at any time and without supplying reasons. This will have no influence on the regular treatment that holds for my condition neither will it influence the care that I receive from my regular doctor.

I know that this Project has been approved by the Research, Ethics and Publications Committee of Faculty of Medicine, University of Limpopo. I am fully aware that the results of this results of this Project will be used for scientific purposes and may be published. I agree to this, provided my privacy is guaranteed.

I hereby give consent to participate in this Project.

.....
Name of patient/volunteer

.....
Signature of patient or guardian.

.....
Place.

.....
Date.

.....
Witness

Statement by the Researcher

I provided verbal and written information regarding this Project
I agree to answer any future questions concerning the Project as best as I am
able.

I will adhere to the approved protocol.

.....
Name of Researcher Signature Date Place

*Delete whatever is not applicable.

APPENDIX E (LETTER OF PERMISSION TO THE CHIEFS)

P O BOX 1523

SESHEGO

0742

20 February 2008

.....
.....
.....

APPLICATION TO CONDUCT RESEARCH IN YOUR VILLAGE.

I am Mologadi Dimakatso Ntsoane, Master of Public Health Student at the University of Limpopo (Turfloop Campus). I hereby request permission to conduct research in your villages.

The title of my study is **“Utilization of public eye care services by the rural population of Capricorn district, Limpopo Province, South Africa.**

The aim of my study is to investigate utilization of public eye care services by rural population in the Capricorn district. The objectives are: To determine the knowledge of the rural population in the Capricorn district about public eye care services available to them. To evaluate the attitude of the rural population in the district regarding public eye care services and finally to assess the level of utilization of eye care services in the Capricorn district. The study will be conducted in the form of a survey and no question will cause any discomfort to the participants.

The proposal for the study has been approved by the Research and Ethics Committees of the University of Limpopo.

Thanking you in advance.

.....

APPENDIX F: LETTER TO THE PROVINCIAL DEPT. OF HEALTH.

P O BOX 1523

SESHEGO

0742

20 February 2008

Department of Health & Welfare
Limpopo Province
Polokwane.

**APPLICATION TO CONDUCT RESEARCH IN THE RURAL AREAS OF
CAPRICORN DISTRICT.**

I am Mologadi Dimakatso Ntsoane, Master of Public Health (MPH) Student at the University of Limpopo. I hereby request permission to conduct research in rural areas of the Capricorn District around the areas surrounding the following hospitals: Mankweng, Botlokwa, W.F knobel, Lebowakgomo, Zebediela and Seshego.

The title of my study is "**Utilization of public eye care services by the rural population of Capricorn district, Limpopo Province, South Africa.**" The aim of my study is to investigate utilization of public eye care services by rural population in the Capricorn district. The objectives are: To determine the knowledge of the rural population in the Capricorn district about public eye care services available to them. To evaluate the attitude of the rural population in the district regarding public eye care services and finally to assess the level of utilization of eye care services in the Capricorn district. The study will be conducted in the form of a survey and no question will cause any discomfort to the participants.

The proposal for the study has been approved by the Research and Ethics Committees of the University of Limpopo.

Thanking you in advance.