THE CAUSES OF POOR VISION AMONG PATIENTS ATTENDING KAMPALA INTERNATIONAL UNIVERSITY-TEACHING HOSPITAL, ISHAKA SOUTH-WESTERN UGANDA.

BY: KIZZA TENDO CATHERINE

BMS/0004/71/DU

A DISSERTATION SUBMITTED IN TO THE FACULTY OF CLINICAL MEDICINE AND DENTISTRY IN PARTIAL FULFILMENT FOR THE AWARD OF THE DEGREEOF BACHELOR OF MEDICINE AND BACHELOR OF SURGERYOF KAMPALA INTERNATIONAL UNIVERSITY

MARCH 2013

DECLARATION

I, KIZZA TENDO CATHERINE, declare that this dissertation is my original work and has never been submitted for any award to any university or institution of higher learning.

Signed…….. Date……

KIZZA TENDO CATHERINE

BMS/0004/71/DU

Student

Supervisor

Signed…… Date……

DR ONYANGO JOHN (MB ChB, MMed. Ophthal, Fellow Paed. Ophthal, FEACO)

DEDICATION

This research is dedicated to my entire family. Thank you for all your support and prayers that have contributed to the achievement of this degree.

ACKNOWLEDGEMENT

I wish to extend my gratitude to my supervisor, DrOnyango for the exceptional guidance he offered throughout the research process.

Special thanks also go to my lovely husband, Denis and my son IsraelOkethwangu for all the support. You are the wind beneath my wings. I am proud and love you all.

To my sponsors DrGalukande and DrBusingye thank you so much for your financial support and being a great inspiration throughout my course. I am grateful for the sacrifice you made to make my future better and brighter.

To my mum NalongoKizza Lovincer, thank you for nurturing me. I would not be here without you. My siblings Christopher, Christine, Peter, Paul, Kato, Wasswa, Godfrey and Harrietthank you for your contribution. To my discussion group members Justine, Felix, Muni, Allan, and Gulom you challenged me throughout my time at medical school. Thank you for your great contribution. Hope Osuta, thank you for dedicating your time to help me whenever I needed help.

Above all, I thank the Almighty God for the love and care, provision and protection, the wisdom and knowledge he granted me throughout this course.

TABLE OF CONTENTS **Page**

.

LIST OF TABLES **PAGES**

LIST OF FIGURES

ACRON YMS AND ABBREVIATIONS

KIU-TH: Kampala International University- Teaching Hospital

WHO: World Health Organization

V/A RE: Visual Acuity Right Eye

V/A LE: Visual Acuity Left Eye

IPNO: In- Patient Number

AMD: Age Related Macular Degeneration

UK: United Kingdom

US: United States.

DEFINITIONS

POOR VISION

Poor vision is defined as visual acuity of less than 6/18 without correction.

VISION 2020

VISION 2020 is an established partnership between the World Health Organization (WHO) and the International Agency for the Prevention of Blindness (IAPB). It was launched in 1999 with the twin aims of eliminating avoidable blindness by the year 2020 and preventing the projected doubling of avoidable visual impairment between 1990 and 2020. (Vision 2020 action plan 2006-2011)

BSTRACT

AIM

To establish the causes of poor vision among patients attending KIU- Teaching hospital in Ishaka ,South-Western Uganda.

Method

A retrospective study was conducted using patients' records. Files of 100 patients were selected and analysis of poor vision was done per eye and not per patient.

Results

Out of the 200 eyes, 151 had poor vision with cataract (60%) being the commonest cause followed by glaucoma (16%).The other causes of poor vision were Pseudophakia, refractive errors, Uveitis, vitreous hemorrhage, retinal detachment, retinitis, corneal ulcers and traumatic iritis. Among the patients who attended eye clinic, females were more affected with poor vision (54%) compared to males (46%). Cataract was the main cause of poor vision among men and women however, glaucoma was more prevalent in women (23.6%) compared to men(15%).The age group commonly affected with poor vision was that above 50years (81%), then 16-49 years (16 %) and 5-15years (3%). Cataract (43%) was the leading cause of poor vision among the age group above 50 years and refractive errors (83%) were the commonest cause of poor vision among children aged 5-15years.

Conclusion.

The study showed that cataract was the leading cause of poor vision. Females were more affected with poor vision compared to males. The age group above 50 years was more affected by poor vision compared to children 5-15 years.

CHAPTER ONE

1.0 INTRODUCTION

It is estimated by WHO (2002) that there are 37 million blind and 161 million visually impaired people worldwide. Of the 37 million blind people in the world, 28 million are in Africa, India and China. Because of demographic changes and the world's steadily growing population these figures are likely to double in the next twenty years unless prompt action is taken.

WHO, in partnership with major international eye care NGDOs, launched the "Vision 2020" Global Initiative for the Elimination of Avoidable Blindness in 1999 in order to try and turn this situation round.

Visual impairment is defined as visual acuity of less than 6/18, but equal to or better than 3/60, or a corresponding visual field loss to less than 20 degrees in the better eye with best possible correction.

Blindness is defined as visual acuity of less than 3/60, or a corresponding visual field loss to less than 10 degrees in the better eye with best possible correction. (Serge Resnikoff et al 2004).

The causes of poor vision are not distributed uniformly throughout the world whereby they vary widely in different parts and even within the same country. World wide, cataract is the most common cause of blindness and low vision among adults and elderly. Infectious diseases such as trachoma and onchocerciasis resulting in low vision and blindness are peculiar to Africa, Asia and South America. Hereditary and congenital conditions are the most common causes of low vision and blindness among children worldwide (Thylefors B et al 1995).

Visual impairment is also unequally distributed across age groups, being largely confined to adults 50 years of age and older. A distribution imbalance is also found with regard to gender throughout the world: females have a significantly higher risk of having visual impairment than males. (Serge Resnikoff al.2004)

1.2 PROBLEM STATEMENT.

Visual impairment affects a large proportion of people worldwide irrespective of the age, sex and race. The magnitude of this varies from community to community. Delays in seeking medical attention due to lack of awareness of the silent but visually disabling conditions and their impact on vision will result in hampering one's performance, thereby impairing the quality of one's life.

The exact situation of visual impairment among patients attending KIU-Teaching hospital is not known as the data available has not yet been analyzed.

1.3 JUSTIFICATION

There are many low vision and blind people worldwide, and there is considerable amount of data available on the prevalence of low vision and blindness in many parts of the world. This data, however, varies significantly from one continent to another. This study will therefore contribute to the statistics on the common causesof poor visionin South-Western Uganda.

1.4 GENERAL OBJECTIVE

To establish the causes and factors associated with poor vision among patients attending eye clinic at KIU - teaching hospital.

1.5 SPECIFIC OBJECTIVES

1. To determine the causes of poor vision among patients attending KIU- teaching hospital.

2. To establish the socio-demographic characteristics of patients with Poor vision attending KIU-teaching hospital eye clinic.

CHAPTER TWO

LITERATURE REVIEW

Causes of poor vision.

The main causes of poor vision globally as reported by WHO (Resnikoff et al. 2004) are cataract (47.8%), glaucoma (12.3%) and age-related macular degeneration (AMD) (8.7%). These diseases affect millions of people globally. Cataract affects 18 million people in the world followed by glaucoma which affects 4.5 million people. Other causes included corneal opacity (5.1%), diabeticretinopathy (4.8%), childhood blindness (3.9%), trachoma (3.6%), and onchocerciasis (0.8%) (WHO, 2010).

Donatella et al (Donatella Pascolini, Silvio Paolo Mariotti, 2011) also estimated that globally, the principal causes of poor vision were uncorrected refractive errors and cataracts, 43% and 33%, respectively. Other causes included glaucoma, 2%, age-related macular degeneration, diabetic retinopathy, trachoma and corneal opacities, all approximately 1%. A large proportion of causes, 18%, are undetermined. They also reported that Posterior segment (retinal) diseases are a major cause of visual impairment worldwide, and are likely to become more and more important with the rapid growth of the ageing population. The proportion of the total visual impairment and blindness from age-related macular degeneration, glaucoma and diabetic retinopathy is currently greater than from infective causes such as trachoma and corneal opacities (Donatella Pascolini, Silvio Paolo Mariotti, 2011)

As reported by Maberley (Maberley et al. 2005) the main causes of poor vision in Canada were cataract (29.9%), AMD (13%) followed by visual pathway disorders (12%) and other retinal diseases (12%). According to(Buhrmann 2007), the most common cause of low vision is age-related macular degeneration (AMD), followed by glaucoma and cataract.

In another study by WHO, the largest proportion of blindness is necessarily related to ageing. Although cataract is not a major cause of blindness in developed countries, globally it is still the leading cause, accounting for almost half of all cases, despite improved delivery of cataract surgical services in many parts of the world.

Cataract is even more significant as a cause of low vision; it is the leading cause of low vision in all sub regions. According to the surveys, glaucoma is the second leading cause of blindness globally as well as in most regions; age-related macular degeneration is the third leading cause. Trachoma, other corneal opacities, childhood blindness and diabetic retinopathy are all of approximately equal magnitude (i.e. all roughly 4–5%). It is noteworthy that trachoma has decreased in significance as a cause of poor vision as compared to earlier estimates. As would be expected given the growing number of people over 70 years of age, age-related macular degeneration is increasing in significance as a cause of blindness; it is the primary cause of blindness in the developed countries and the third leading cause worldwide. Corneal blindness may be primarily attributed to trachoma in areas in which this condition is known to be endemic. In other areas it is caused primarily by trauma and vitamin A deficiency

Of the estimated 45 million cases of poor vision by 1996, approximately 60% were due to either cataract (16 million people) or refractive errors. A further 15% were due to trachoma, vitamin A deficiency or onchocerciasis, with another 15% due to diabetic retinopathy or glaucoma. The remaining 10% of cases were attributable to age-related macular degeneration and other diseases.

The survey also reported that there are estimated to be 153 million people with visual impairment due to uncorrected refractive errors, i.e. presenting visual acuity < 6/18 in the better eye, excluding presbyopia. (WHO 2007)

AO Oduntan (AO Oduntan 2005) reported that the common causes of low vision varied from one continent to another. In America and Canada, Diabetes, cataract, and age-related macular degeneration were the common causes of low vision. In East Mediterranean and Asia Pacific, Cataract, corneal opacities (nontrachomatous), infection (trachomatous and nontrachomatous), retinitis pigmentosa, age-related macular degeneration, diabetic retinopathy, glaucoma, optic atrophy were the common causes of poor vision. In Europe, Age-related macular degeneration, glaucoma, cataract, diabetic retinopathy, hereditary retinal dystrophies, optic atrophy accounted for visual impairment.In Oceania Age-related macular degeneration, diabetic retinopathy, cataracts were the common causes of poor vision. In Africa Senile cataract, glaucoma, corneal opacity (non-trachomatous), uncorrected aphakia, infections and diseases (onchocerciasis, trachomatous and nontrachomatous) xerophthalmia, trauma, macula degeneration are the common causes

According to Zerihun, Glaucomawas one of the leading causes of blindness in the United States, and the most common cause of blindness among African Americans and Hispanics. Nearly three million people have glaucoma, but half do not realize it because there are often no warning symptoms. Zerihun also reported thatIn Ethiopia, Out of a total population of 2 million, an estimated 17,000 people are blind and 34,000 have low vision (i.e., a total of 51,000 people with

visual impairment). Cataracts and refractive errors were the leading cause. (Zerihun N, et al.1997)

In china, Cataract accounted for 58.8% of bilateral low vision, 20.0% of bilateral blindness, and 52.0% of poor visual function (score<90). Glaucoma contributed to 60.0% of bilateral blindness. Glaucoma was the leading cause of blindness in Singaporean Chinese adults, in addition to well-recognized causes in the rest of Asia such as cataract. (http://www.aaojournal.org/article/abstract)

Trachoma is the most common infectious cause of vision loss and affects approximately 84 million people, primarily in remote rural areas of Africa, Asia, Central and South America, Australia, and the Middle East. (http://www.ncbi.nlm.nih.gov/pmc/articles)

Richard Al reported that in Nigeria, Cataract and glaucoma were the leading cause of blindness and low vision. Cataract was responsible for 63% of blindness and 49.8% of low vision while glaucoma accounted for 22% of blindness and 17.9% of low vision. (Richard AI. 2010)

In Kenyan communities, as reported by Whitfield (Whitfield R, et al 1990), 0.7% of the population sample was blind and another 2.6% were partially sighted and Cataract, (36% of all blindness) was the major cause of blindness and was responsible for 39% of all low vision cases. Other common conditions in that rural Kenya study were non trachomatous infections and trachoma, which occurred in 0.4% and 0.3% of the population respectively.

In Uganda, according to the study carried out in south western region by S M Mbulaiteye(S M Mbulaiteye et al 2003) they reported the Incidence of visual loss to have increased with age from 1.21 per 1000 Per Yearamong people aged 13–34 years to 64.2 per 1000 Per Year in those aged 65 years or older (p for trend >0.001). Cataract and refractive error were the major cause of visual loss. Age-related macular degeneration was responsible for 8.7% of all blindness (3 million persons) due to eye diseases, ranging from close to 0% in sub-Saharan Africa to 50% in industrialized countries. The number affected was expected to double by the year 2020 as a result of the ageing of the world's population.

Causes of poor vision among different age groups.

WHO reported that Visual impairment was unequally distributed across age groups, as more than 82% of all blind people were 50 years of age or older, even though people in this age group represent only 19% of the world's population. The study further reported that globally, uncorrected refractive errors are the main cause of visual impairment in children aged 5–15 years. The prevalence of myopia (short-sightedness) is increasing dramatically among children, particularly in urban areas of South-East Asia.

More than 12 million children ages five to 15 were visually impaired because of uncorrected refractive errors, conditions that could be easily diagnosed and corrected with glasses, contact lenses or refractive surgery. (WHO, May 2009)

According to the survey on global prevalence of visual impairment by Donatella et al 2011, 65% of people visually impaired and 82% of all blind were 50 years and older.

SergeResnikoff et al (SergeResnikoff et al.2004) reported that the age specific prevalence of poor vision by WHO sub regions in 2002 was as follows; for the age group of <15

years,Africahad 0.124%, America had 0.03%,Eastern Mediterranean 0.08%,Europe0.03%,South-East Asia 0.08%, and Western Pacific Region 0.05%.
For the age group of 15–49 years,Africa had 0.2%, America 0.1%, Eastern Mediterranean 0.15%, Europe 0.1%,South-East Asia 0.15%,and Western Pacific Region 0.15%.
For those above 50 years, Africa had 9%America had 0.4 0%, Eastern Mediterranean 5.6% Europe-A 0.5 % ,South-East Asia 6.3% andWestern Pacific Region 5.6%.

Rahi (Rahi& Cable et al 2003) estimated that the causes of blindness and low vision in children in the UK were cataract, albinism, optic atrophy and glaucoma.Glaucoma accounted for 9.6% of the causes of blindness and low vision in the UK children. In another study on thecauses of visual impairment in children in the UK, Rogers (Rogers 1996) reported that the major cause of visual impairment was albinism (22%), followed by hereditary retinopathy (19%) and congenital idiopathic nystagmus (16%). Cataract (13.8%), optic atrophy (13%), albinism (13%), congenital malformations (12.2%), glaucoma and retinitis pigmentosa (8.1%) were the major causes of visual impairment at a school for the blind in the United States (DeCarlo&Nowakowski 1999). Causes of blindness in children were commonly genetic in origin. They included congenital cataract, congenital nystagmus, Leber's amaurosis, retinitis pigmentosa, Usher's syndrome, albinism, congenital glaucoma, microphthalmos, anophthalmos, aniridia et cetera. Childhood visual impairment from these parts of East and West Africa has been reported to be mainly due to measles, small pox, malnutrition and congenital cataract (Merin S.1967)
The causes of childhood blindness varied but the main avoidable causes were corneal scarring in Africa and poorer countries in Asia; cataract, glaucoma , retinopathy of prematurity in high- and middle-income countries and some cities in Asia, refractive errors, but particularly in South-East

Asia and low vision, which encompasses visual impairment and blindness from untreatable causes, in all regions.

According to the study done bySerge Resnikoffet **(**Serge Resnikoffet al.2004), they reported that although childhood blindness remained a significant problem with an estimated 1.4 million blind children below the age of 15 years, its magnitude was relatively small when compared to the extent of blindness in older adults: more than 82% of all blind people are 50 years and older.

Thylefors B (Thylefors B, et al 1996) reported that the most common cause of low vision and blindness among adults were cataract, corneal and retinal diseases. Half of the blindness was due to cataract alone

Vision 2020 e- resource team estimated that by age 65, one in three Americans had some form of vision impairing eye disease. Of the 119 million people in the United States who are age 40 or over, 3.4 million were visually impaired or blind.

In the Wenchi district in central Ghana the estimated prevalence of blindness among those 30 years and older to be 1.7%, and additionally, the prevalence of low vision was 2% and cataract (62.5%) was the most common cause of blindness in individuals aged 30 years and older. Others onchocerciasis (12.5%), non trachomatous corneal opacity (8.2%), and refractive error (4.2%). (Moll AC, et al 1994)

Distribution of poor visionby gender

Gender was a significantly associated with visual impairment. Women represented two-thirds of those with blinding eye disease, even after controlling for women's longer life spans. (http://www.ncbi.nlm.nih.gov)

Studies consistently indicated that females in every region of the world and at all ages had a significantly higher risk for being visually impaired than males, mostly because of their longer life expectancy and, in poorer societies, because of their lack of access to services.(WHO 2007).

Serge Resnikoff**(**Serge Resnikoffet al.2004) estimated that the number of women with visual impairment, as estimated from the available studies was higher than that in men even after adjustment for age. Female to male prevalence ratios indicated that women were more likely to have visual impairment than men in every region of the world: the ratios ranged from 1.5 to 2.2. Around 60% of Africa's blind are women (Lewallen and Courtright. Blindness in Africa: present situation and future needs).

CHAPTER 3.

3.0 METHODOLOGY

3.1 STUDY DESIGN

A retrospective study was carried out using patient's files from the records department of Kampala international university teaching hospital.

3.2 STUDY SETTING.

Kampala international university teaching hospital is an over 1000 bed facility located in Ishaka, Bushenyi district in western Uganda, 58 km on Mbarara–Fort Portal road. It has a catchment area covering the western region of Uganda which has an estimated population of 7million people. It serves a population of about 1.5 million people in Greater Bushenyi. Bushenyi-Ishaka town council alone has an estimated population of 22,799 people according to the Bushenyi district population and housing census preliminary results. Bushenyi District is fairly endowed with natural resources. The district has relatively low poverty levels among its residents. The economy of the district depends mainly on agriculture. Agriculture is a source of food for the population, subsistence income for most families and provides direct employment to 86.7% of the district population, as well as supplying raw materials to industries. The majorityof the people are involved in subsistence agriculture with some engaged in commercial production of crops including Coffee, Tea, Sweet bananas and Matooke.

Ranching for beef and dairy farming for milk production are widely practiced on both subsistence and commercial scales in BushenyiDistrict.(en.wikipedia.org/wiki/Bushenyi-District)

3.3 STUDY POPULATION

The study was carried out on the patient's records at KIU_ teaching hospital eye clinic for all the patients who attended the clinic in the year 2009.

3.4 DETERMINATION OF SAMPLE SIZE AND TECHNIQUE

The study included all the people who had poor visionwho attended the eye clinic within the year 2009.

3.5 INCLUSION AND EXCLUSION CRITERIA

The study was done using the records of patients who satisfied the criteria for the study. All other patients whose records were missing, whose visual acuity was not recorded as well as those with a visual acuity above 6/18 wereexcluded.

3.6 DATA COLLECTION METHODS.

Records of patients who fulfilled the inclusion criteria that is, visual acuity less than 6/18 were used. Data was collected using a check list designed for the study. The tool included data on socio-demographic characteristics of respondents as well as their diagnosis.

3.7 DATA ANALYSIS AND PRESENTATION METHOD

The data obtained wasanalyzed using the SPSS and the results presented in forms of chartstables andgraphs.

3.8 ETHICAL CONSIDERATIONS

Permission was sought from the research committee of KIU western campus, the concerned authorities in the administration and the department of ophthalmology to allow me usesthe dataof patients in the department.

Likewise, confidentiality was strictly observed at all stages of this research.

Finally the data collected was usedstrictly for the purpose of this research only.

3.9 STUDY LIMITATIONS.

Time constraints, missing records, financial constraints, load shedding of the local power hindering the typing of the research work were the common study limitations to be faced.

CHAPTER FOUR

4.0RESULTS

4.1 Introduction

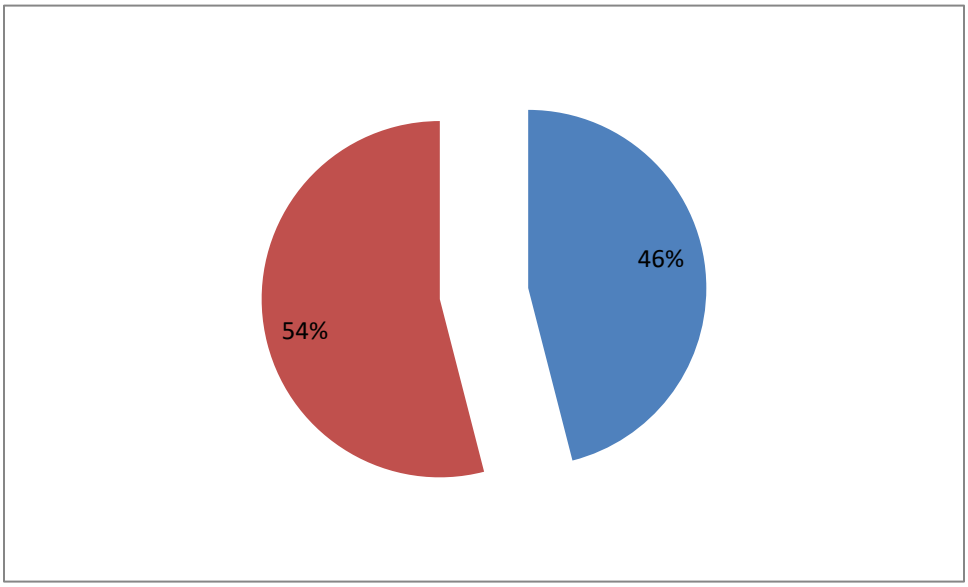
151 eyes with poor vision from 100 patients were analyzed and below are the results.

Table 1: DISTRIBUTION OF THE CAUSES OF POOR VISION

CONDITION	FREQUENCY	PERCENTAGE
CATARACT	90	59.6
GLAUCOMA	21	13.9
PSEUDOPHAKIA	9	5.9
REFRACTIVE ERRORS	7	4.6
MACULOPATHY	6	4.0
CORTICAL BLINDNESS	5	3.3
RETINAL DETARCHMENT	4	2.6
CORNEAL ULCERS	4	2.6
UVEITIS	2	1.3
VITREOUS HAEMORRAGE	1	0.7
RETINITIS PIGMENTOSA	1	0.7
TRAUMATIC IRITIS	1	0.7
Total	151	100

The table above shows that the commonest cause of poor vision among patients seen at the ophthalmology clinic at Kampala InternationalUniversity teachinghospital was cataract (60%), followed by glaucoma (16%).

Figure 1: GENDER DISTRIBUTION OF PATIENTS WITH POOR VISION



The above figure shows that females weremore affected with poor vision (54%) than males (46%).

Table 2: Distribution of the causes of poor vision among Females

Disease	Frequency	Percentage
Cataract	19	34.5
Glaucoma	13	23.6
Refractive errors	5	9.1
Pseudophakia	4	7.2
Retinal detachment	3	5.4
Maculopathy	3	5.4
Cortical blindness	3	5.4
Uveitis	2	3.6
Traumatic iritis	1	1.8
Vitreous hemorrhage	1	1.8
Corneal ulcer	1	1.8
Total	55	100

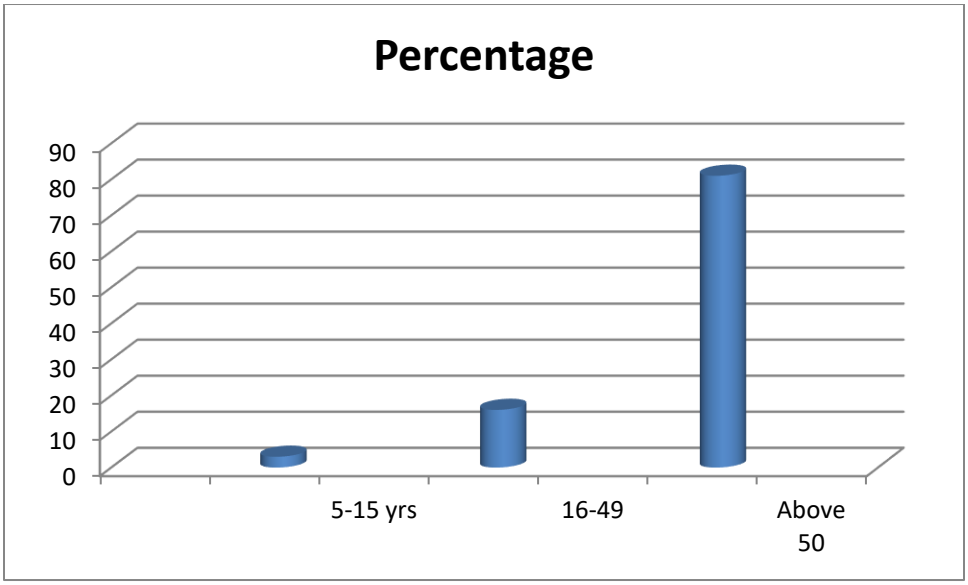
The above table shows that the commonest cause of poor vision among females was cataract (34.5%) and glaucoma (23.6%).

Table 3: Distribution of causes of poor vision among Males

Disease	Frequency	Percentage
Cataract	26	51
Glaucoma	8	15
Pseudophakia	5	10
Maculopathy	3	6
Corneal ulcer	3	6
Refractive errors	2	4
Cortical blindness	2	4
Retinitis pigmentosa	1	2
Retinal detachment	1	2
Total	**51**	**100**

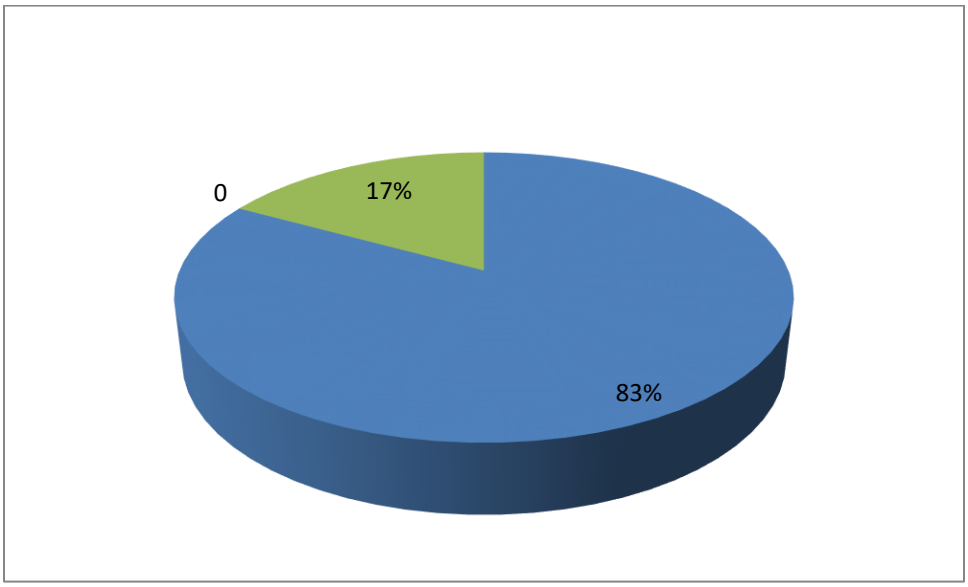
The table above shows that the commonest causes of poor vision among males werecataracts (51%) and glaucoma (15%).

Figure 2: Age distribution of patients with poor vision.



The commonly affected age group was that above 50years (81%), then 16-49 years (16 %) and 0-15years (3%).

Figure 3: Causes of poor vision among the age group of 5-15 years



The figure above shows that refractive errors (83%) were the commonest cause of poor vision among the age groupof 5-15 years followed by Uveitis(17%).

Table 4: Causes of poor vision among those aged 16-49 years

Disease	**Frequency**	**Percentage**
Cataracts	7	44
Corneal ulcers	5	31
Maculopathy	1	6
Glaucoma	1	6
Cortical blindness	1	6
Traumatic iritis	1	6
Total	16	100

The table above shows that the commonest causes of poor vision among the age group of 16-49 years were cataract (44%) and corneal ulcers (31%)

Table 5: Causes of poor vision among those above 50 years

Disease	**Frequency**	**Percentage**
Cataracts	38	43
Glaucoma	20	23
Pseudophakia	9	10
Maculopathy	5	6
Retinal detachment	4	5
Cortical blindness	4	5
Corneal ulcers	3	3
Refractive errors	2	2
Vitreoushemorrhage	1	1
Uveitis	1	1
Retinitis pigmentosa	1 1	1
Total	88	100

The table above shows that the commonest cause of poor vision among those above 50 years wascataract (43%) and glaucoma (23%).

CHAPTER 5

5.0DISCUSSION

5.1 Causes of Poor vision.

In this study, the common causes of poor vision among patients attending KIU-Teaching hospital werecataract (60%), glaucoma (14%), Pseudophakia(6%), refractive errors(5%) and maculopathy (4%).This finding compares well with the global studies done by Resnikoff et al (Resnikoff et al. 2004) as reported by WHO that cataract (47.8%) and glaucoma (12.3%) were the main causes of poor vision.

According to the study done by AO Oduntan 2005 in Europe, Age-related macular degeneration, glaucoma, cataract, diabetic retinopathy, hereditary retinal dystrophies, optic atrophy were the major causes ofpoor vision in Europe. This study did not compare well to the findings in my study because Age related macular degeneration was not the leading cause of poor vision in South- Western Uganda. This could have been attributed to the fact that Europe being in a developed world, preventable causes of blindness are rare after being eliminated throughbetter health services hence the low prevalence of cataract.

In Uganda, according to the study done by S M Mbulaiteye et al (S M Mbulaiteye et al 2003) Cataract and refractive error were the major cause of visual loss. This finding in that study compares well in that cataract was the major cause of poor vision however that study showed that refractive errors were the second leading cause of poor vision which does not compare well with the findings in this study. The difference could be due to the fact that the 2003 study was community based as opposed to this study which was hospital based.

Other causes of poor vision in this study wereUveitis, retinal degeneration, corneal ulcers, vitreous hemorrhage, cortical blindness and retinitis pigmentosa which were reported in other studies too.

5.1.2 Gender distribution

The study showed that females (54%) were more affected by poor vision as compared to males (46%). This finding compares wellwiththe studydone by World Health Organization (2007) whichindicated, that females in every region of the world and of all ages have a significantly higher risk for being visually impaired than males, mostly because of their longer life expectancy and, in poorer societies, because of their lack of access to services.

Serge Resnikoff et al (Serge Resnikoff al.2004) showed that the number of women with visual impairment, as estimated from the available studies, is higher than that in men even after adjustment for age. Female to male prevalence ratios indicated that women were more likely to have a visual impairment than men in every region of the world: the ratios ranged from 1.5 to 2.2. In this study the ratio was 1.2.

Lewallen and Court right also reported that around 60% of Africa's blind are women.

This study also showed that cataract and glaucoma were the leading cause of poor vision in both male and female however, females had a higher prevalence of glaucoma(23%) compared to males(15%).

5.1.3 Age distribution

In this study, the age group above 50 years (81%) was more affected by poor vision compared to 16% who were aged between 16-49 years and 3% who were aged between 5-15years. This was consistent with the WHO 2009 findings which showed that more than 82% of all blind people were aged 50 years and above even though this age group represented only 19% of the world's

population. The cause of visual impairments increases with increasing age and is due to increase in the degenerative disorders, cataract, glaucoma and other disorders among the elderly.

The common causes of poor vision among the different age groups were refractive errors(83%) among the age group of 5-15years, cataracts(16%), and (81%) among the age group of 16-49 and above 50 years respectively. The finding was consistent with the WHO report of May 2009, where by uncorrected refractive errors was the main cause of visual impairment in children aged 5–15 years globally.According to Thylefors B, et al 1996, the common causes of poor vision among adults above 50 years wascataract which is also consistent with the findings in this study. However in the UK and US, as reported by DeCarlo&Nowakowski 1999, Rogers 1996, Rahi& Cable 2003, the most common causes of poor vision in children were cataract, albinism, optic atrophy and glaucoma which were not consistent with my findings. Basically congenital abnormalities contributed to poor vision in the other studies.

Although childhood blindness remains a significant problem (there are an estimated 1.4 million blind children below the age of 15 years), its magnitude is relatively small when compared to the extent of blindness in older adults: more than 82% of all blind people are 50 years and older. **(**Serge Resnikoff al.2004**)**

5.2 CONCLUSION

- The study showed that Cataract (60 %) and glaucoma (16%) were the leading cause of poor vision among patients seen at Kampala International University teaching hospital.
- The commonest cause of poor vision among adults aged above 50 years was cataracts (43%) whereas in children below 15 years were refractive errors (83%).
- Females (54%) had a higher prevalence of poor vision compared to males (46%).

5.3 RECOMMENDATIONS

I recommend that services targeting cataract and glaucoma among patients with poor vision should be improved in this region since they are leading causes of poor vision here**.**

A community based study should be conducted so as to accurately establish the magnitude of poor vision within this region.

Refrences

Courtright P, Klungsoyr P, Lewallen S, Henriksen TH. The epidemiology of blindness and visual loss in Hamar tribesmen of Ethiopia. Trop Geogr Med 1993 45 168-170.

Donatella Pascolini, Silvio Paolo Mariotti, global estimates of visual impairment ; 2010

Foster A, Gilbert CE. Epidemiology of childhood blindness.Eye 1992 6 173- 176. Gilbert CE, Anderton L, Dandona L, Foster A. Prevalence of visual impairment in children: A review of available data. OphthalEpidemiol 1999 6 73-82.

Lewallen S, Courtright P. Blindness in Africa. Present situation and future needs. Br J Ophthalmol 2001 85 897-903.

Loewenthal R, Pe'er J. A prevalence survey of ophthalmic diseases among the Turkana tribe in North West-Kenya. Br J Ophthalmol 1990 74 84-88.

Merin S. Malnutrition as a cause of blindness in children. Malawi Med Bull 1967 2 6-10.

Moll AC, van der Linden AJ, Hogeweg M, Schader WE, Hermans J, de Keizer RJ. Prevalence of blindness and low vision of people over 30 years in the Wenchi district, Ghana in relation to eye care programmes. Br J Ophthalmol 1994 78 275-278.

Pararajasegaram R. Vision 2020 - the right to sight: From strategies to action. Am J Ophthalmol 1999 128 359-360.

Rahi JS & Cable N (2003): Severe visual impairment and blindness in children in the UK. The Lancet 362:9393: 1359-1365.

Resnikoff S, Pascolini D, Etya'ale D, et al. Global data on visual impairment in the year 2002. Bull WHO 2004;82:844e51.

Resnikoff S, Pascolini D, Mariotti SP, et al. Global magnitude of visual impairment

caused by uncorrected refraction errors in 2004. Bull WHO 2008;86:63e70.

S M Mbulaiteye, B C Reeves, F Mulwanyi, J A G Whitworth, G Johnson

Br J Ophthalmol 2003;87:829–833 Background: Surveys

Thylefors B, Negrel AD, Pararajasegaram R, Dadzie, KY. Global data on blindness. Bull World Health Organ 1995 73 115-121.

Thylefors B, Negrel AD, PararajasegaramR, Dadzie, KY. Global data on blindness.

Community Eye Health 1996 9 1-8.

Thylefors B. A global initiative for elimination of avoidable blindness. Am J Ophthalmol

1998 125 90-93.

VISION 2020 Global Initiative for the Elimination of Avoidable Blindness : action plan 2006-2011

VISION 2020: The Right to Sight Blindness and Vision Impairment Global Facts, http://www.vision2020.org/main.cfm?type=FACTS, (Updated April 1, 2010)

World Health Organization, Visual Impairment and Blindness Fact Sheet N°282, http://www.who.int/mediacentre/factsheets/fs282/en/ (Updated May 2009)

Whitfield R, Schwab L, Ross-Degnan D, Steinkuller P, Swartwood J. Blindness and eye disease in Kenya: Ocular status survey results from Kenya rural blindness prevention project. Br J Ophthalmol 1990 74 333-340.

Watkins RD. The management of global blindness.ClinExpOptom 2001 84 104-112.

Zerihun N, Mabey D. Blindness and low vision in Jimma Zone, Ethiopia: result of a population based survey. OphthalEpidemiol 1997 4 19-26.Cook CD, Knight SE, Croften-Briggs I.

APPENDIX 1

PATIENT'S RECORD CHECK LIST

IP NO	Age	Sex	V/A RE	V/A LE	DIAGNOSIS

APPENDIX 2: WORK PLAN

Research Activity	Time Allocation
Research proposal	2 months
Data collection	1month
Data analysis	1month
consultation	2 weeks
Drafting of thesis	1 week
Total time	4months and 3 weeks

APPENDIX 3: BUDGET

ITEM	**UNIT COST**	**TOTAL**
Internet services	1500@hr	15,000/=
Printing	500@page	100,000/=
Photocopy	100 @page	20,000/=
Phone calls	300@min	45,000/=
Binding	2500	20,000/=
Miscellaneous		50,000/=
TOTAL		250,000/=

KAMPALA INTERNATIONAL UNIVERSITY

WESTERN CAMPUS,

P.O.BOX 71, BUSHENYI

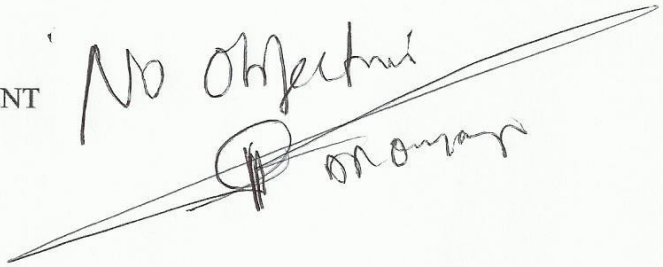
UGANDA

TO: THE HOD

OPTHALMOLOGY DEPARTMENT

KIU-WESTERN CAMPUS

P.O.BOX 71, BUSHENYI



Dear Sir,

RE: PERMISSION TO CONDUCT RESEARCH IN OPTHALMOLOGY DEPARTMENT.

I, Kizza Tendo Catherine (BMS/0004/71/DU), a fifth year medical student hereby seek for your Permission to conduct my research titled "The causes of poor vision among patients attending KIU –Teaching Hospital, Ishaka Southwestern Uganda''. Your consideration will be highly appreciated.

Yours Faithfully

KIZZA TENDO CATHERINE

KAMPALA INTERNATIONAL UNIVERSITY
EXPLORING THE HEIGHTS

Ishaka Bushenyi * PO BOX 71 Ishaka, Uganda
Tel: +256 Fax: +256 (0) 41 - 501 974
E-mail: admin@kiu.ac.ug * Website: http://www.kiu.ac.ug

OFFICE OF THE DEAN,

FACULTY CLINICAL MEDICINE &DENTISTRY

7/3/2013

TO WHOM IT MAY CONCERN

RE: KIZZA TENDO CATHERINE (BMS/0004/71/DU)

The above named is a fifth year student at Kampala International University pursuing a Bachelor of Medicine, Bachelor of Surgery (MBChB) programme.

She wishes to conduct her research project in your Hospital.

Any assistance given will be appreciated.

Thank you

FACULTY OF CLINICAL MEDICINE & DENTISTRY

Dr. Akib Surat
Asso.Dean, FCM & D