PREVALENCE & PROFILE OF BLINDNESS AMONG PATIENTS SEEN IN JIMMA SPECIALIZED HOSPITAL, SOUTH WESTERN ETHIOPIA, 2013.

By: Hirpo Teno (MD)

Phone=+251911003570

Email address= tenohirpo@yahoo.com

A research paper submitted to College of Public Health and Medical Sciences, Department of Ophthalmology in partial fulfillment of specialty in Ophthalmology.

Jimma, Ethiopia

Prevalence & Profile of Blindness among Patients seen in Jimma Specialized Hospital, Jimma South Western Ethiopia, 2013.

Advisors

Dr. Jafer kedir (MD, Ass.Professor)

Dr. Sissay Bekele (MD, Ass.Professor)

ABSTRACT

Background: The World Health Organization (WHO) estimates that the number of people with visual impairment worldwide was in excess of 284 million, of whom about 39 million were blind. While approximately 10 million Africans are blind; there are also 1.2 million blind people in Ethiopia. . In the least developed world, blindness is associated with considerable disability and excess mortality; resulting in huge economic and social consequences.

Objective is to determine prevalence and profile of blindness in Jimma university Department of Ophthalmology, Southern Ethiopia.

Methods: a cross-sectional, descriptive study was conducted in patients attending Jimma hospital department of ophthalmology over a period of 6 months, from July 2013 to January 2014.

A questionnaire was used for data collection. The data was cleaned, edited and entered into the SPSS window for analysis. Data was analyzed, using version 20 SPSS and statistical test done

RESULT: A total of 7,878 patients were seen during study period. Of these 206 were blind proportion of blindness was 206/7,878(2.61%). Out of 206 patients, 167(81.1%) were unilaterally blind while 39(18.9%) were bilaterally blind. The Out of 206 patients, 101(49%) were greater than or equal 55 years of age. 140 (68) were males while 66(32) were females, giving a male to female ratio 2.2:1 The most common cause of blindness was cataract followed by glaucoma,. From cataract cases age related cataract was the commonest 77.7% while among glaucoma POAG consisted (42.6%). Majority of retinal causes of blindness is retinal detachment (62.5%). Age related macular degeneration comprises 12.5% of retinal cases. Post traumatic corneal opacity consisted majority of the cases (59.1%). Post inflammatory was 31.8%.

Conclusion: Cataract is the most common cause of blindness while glaucoma is the second most common causes of blindness. Corneal eye diseases are the 3rd. Blindness is more common in old ages & in illiterate people. Blindness more prevalent among males blindness than female. Unilateral blindness more common than bilateral blindness.

Health education should be given to community to come early to health facility. Extension of health facility should be to provide eye care service in closer area for those who in need of service. Outreach service should be strengthened to reach to these people where closer to them.

ACKNOWLEDGEMENTS

I would like to extend my heartfelt gratitude to data collectors' lammi Seyoum & abdeta bayisa for their efforts during all the work.

My special thanks go to other staffs working in the departement for valuable help.

My thanks also go to college of public health & medical sciences, Jimma University for all the efforts to provide me with the necessary knowledge & skill to conduct this research.

Table of contents

LIST OF TABLES & FIGURES

Abbreviations used

V/A----- Visual Acuity

WHO---- World Health Organization

CO---Corneal opacity

POAG---Primary open angle glaucoma

AACG---Acute angle closure glaucoma

AMD---Age related macular degeneration.

JUDO--- Jimma University Department of Ophthalmology

CHAPTER ONE: INTRODUCTION

1.1 Background

Blindness: Visual acuity <3/60 or a corresponding visual field loss to less than 10 degrees in the better eye with the best possible correction. In the United States, legal blindness is defined as distance visual acuity ≤20/200 (1). It is estimated that over seven million people become blind every year. 75% of blindness is avoidable Most of the people with visual impairment are older, and females are more at risk at every age, in every part of the world.90% of people with visual impairments live in developing countries

Blindness is particularly devastating in the developing world where it has a profound impact on the quality of life for the blind person and his or her community. The majority of blind people in developing countries live in remote areas, while most of the eye care providers and hospitals are situated in the cities. Women and children face extra challenges, including limited access to financial resources and health information, fewer travel options, and less social support in seeking care (1). 90% of blind people in the developing world cannot work.50% report a reduced of social status and decision-making authority.Blind people in the developing world are subject to low employment, inadequate housing, substandard health care, barriers to education, cultural activities, sports and recreation .Life expectancy is half or less than age matched sighted individuals(2).

The "VISION 2020 initiative: The Right to Sight" launched by WHO was adopted in Ethiopia in 2002. This initiative comprises three components, namely the elimination of preventable blinding diseases as a public health problem by the year 2020, human resource development, and infrastructure development (2).

A cross–sectional descriptive study was carried out to determine prevalence & profile of blindness. Findings will serve as a baseline in formulating intervention strategies to control blindness in the region in collaboration with the central administration and various National and international partners.

1.2. Statement of Problem

Globally, it is estimated that there are 38 million persons who are blind. Moreover, a further 110 million people have low vision and are at great risk of becoming blind (2). In sub-Saharan Africa it is estimated at 1.4% (2). In Ethiopia, the prevalence of blindness is 1.6% and corneal blindness accounts over 19% of the blindness (5).

Many causes of blindness differ according to the socioeconomic condition of the nation being studied. In developed nations, the leading causes of blindness include ocular complications of diabetes, macular degeneration, and traumatic injuries. In third-world nations, where blindness is much more common and where about 85% of the world's blindness occurs, principal causes include infections, cataracts, glaucoma, injury, and inability to obtain any glasses (7).

The age-specific prevalences of the major causes of blindness that are related to age indicate that the trend will be for an increase in such blindness over the decades to come, unless energetic efforts are made to tackle these problems.(7)

Blindness has profound human and socio-economic consequences in all societies. The cost of education, rehabilitation and lost productivity due to blindness is a significant economic burden, on families, communities and nations, particularly those in economically deprived areas of the world. Furthermore, in such settings, blindness is often associated with lower life expectancy (8).

Even though blindness is very common there is no hospital based study to determine prevalence & profile of blindness in JUDO. Given that studies are lacking concerning this problem in jimma hospital, the current study attempts in filling the gap by trying to determine the magnitude & causes of the problem among patients having follow up at Jimma university department of ophthalmology.

CHAPTER TWO

Literature Review

Blindness is very common. The World Health Organization says that around 284 million people have at least some degree of "visual impairment," of whom 38 million are blind. There are many causes of blindness, including infections, malnutrition, injury, and aging. Around 90% of blind people live in developing countries. It is estimated that 75% of the cases of blindness in these countries could have been prevented (10).

In a hospital based review of 2536 patients in North central Nigeria The prevalence of bilateral blindness was seen in 11.0%. Blindness was most prevalent among the farmers (40.2%), followed by the house wives (24.4%). It was attributable to refractive error in 33.3%, cataract in 28.3%, glaucoma in 13.3%, posterior segment disease in 8.2%, glaucoma/cataract in 7.9%, cataract/posterior segment disease in 1.8%, trauma and uveitis each in 1.4%, with other ocular conditions (affecting the globe) seen in 1.1% and corneal disorders in 0.7% (11) .

In another clinic based study in Bayelsa State of Nigeria 124 (%) patients had blindness Cataract and glaucoma were the leading causes of blindness. Cataract was responsible for 63% of blindness while glaucoma accounted for 22% of blindness. The other causes of blindness in decreasing order included maculopathy (4.3%), retinitis pigmentosa (3.4%), optic atrophy, phtisis bulbi, keratopathy (each 2.6%) and age related macular degeneration (0.9%). Majority of blindness is avoidable (93.5%), and found in the fifth and sixth decades of life (12).

In a general hospital based review of patients in southwestern Nigeria 1,544 patients had a mean age of 53.5 years (range, 4 to 96 years); 858 (56%) were male and 686 (44%) were female. Blindness was bilateral in 471 (30%) patients and unilateral in 1,073 (70%). The leading causes of bilateral blindness were cataract, 171 (36%); glaucoma, 138 (29%); and optic atrophy, 21 (4%). The most common causes of unilateral blindness were cataract, 446 (41%); glaucoma, 213 (20%); and those referable to trauma, 116 (11%) (13).

In a hospital-based study of the total patients seen in Jordanians, 373 were blind according to the selection criteria. Among 248 patients with unilateral blindness, diabetic retinopathy, cataract and trauma were the leading causes. Among the 81 patients with moderate bilateral blindness, diabetic retinopathy and cataract were the leading causes. Diabetic retinopathy and glaucoma were the leading causes in patients with severe bilateral blindness (14).

A population-based study on the prevalence of blindness was carried out in Jimma Zone, south-western Ethiopia between November 1994 and January 1995. A total of 7423 people from a sample of 8215 (90.4%) was examined. Sixty-three (0.85%) were blind (visual acuity less than 3/60 in the better eye) and. Cataract and aphakia (52.4%), corneal opacity and phthisis bulbi (25.4%), and glaucoma (9.5%) were the major causes of blindness. Corneal opacity from trachoma was responsible for 20.6% of all blindness (15).

A survey to determine the prevalence and causes of blindness in Anambra State of Nigeria was conducted. The prevalence of blindness in the state is estimated to be 0.33% +/- 0.27%. There are equal numbers of blind males as females, although the prevalence among males is 0.44% +/- 0.26% while among females it is 0.24% +/- 0.15%. Most of the blind are above 50 y of age with prevalence of blindness in this age group being 2.62% +/- 1.31% (3.27% +/- 2.1% for males and 2.02% +/- 1.58% for females). Cataract caused most of the blindness (70.59%), followed by glaucoma (17.65%). Macular degeneration is becoming important (5.88%) while obvious infective causes are rare (16).

According to study conducted at a tertiary hospital in Douala, Cameroon Out of the 1927 cases of blindness, 1000 were unilateral, corresponding to a hospital prevalence of 1.84% and 927 cases were bilateral, corresponding to a hospital prevalence of 1.71%. No statistically significant difference was noted between the two (P = 0.14). The leading causes of bilateral blindness were cataract (50.1%), glaucoma (19.7%), and diabetic retinopathy (7.8%) while the leading causes of unilateral blindness were cataract (40.4%), glaucoma (14.1%), and retinal detachment (9.1%). Cataract (51.2%), cortical blindness (16.3%), and congenital glaucoma (10%) were the leading causes of bilateral blindness in children aged less than 10 years (17).

A hospital based prospective study was conducted at B P Koirala Lions Center for Ophthalmic Studies to determine the causes of blindness. A total of 701 patients were enrolled for this study during a one and a half year time period. Four main diseases in the order of prevalence--cataract, corneal diseases, trauma and posterior segment diseases--were identified as the major causes of

blindness. The prevalence of blindness increased with age and showed a male preponderance. Cataract and corneal diseases were the leading causes of bilateral blindness and unilateral blindness respectively.(20) A cross-sectional, descriptive study was conducted in patients attending Dhulikhel hospital over a period of 12 months, from March 2010. A total of 76 eyes of 58 patients were analyzed. Retinal diseases had the higher prevalence (23, 39.7 %) followed by amblyopia (10, 17.2 %) and corneal diseases (9, 15.51 %). Anisometropic amblyopia (3.94 %) was the commonest type of amblyopia. Retinitis pigmentosa (9.21 %) and age-related macular degeneration (7.89 %) were common retinal diseases whereas anterior staphyloma (5.26 %) and leucoma (3.94 %) were common corneal diseases. Other important and rare causes of blindness included ethambutol-induced optic neuropathy and vitelliform dystrophy.

The case notes of 3845 consecutive new patients over 12 months attending Ibn Al-Haitham Eye Center which is affiliated to the University of Science and Technology in Sana'a (the capital of Yemen) were retrieved and analyzed. 7.7 percent (296) were uniocularly blind and 11.2 percent (432) were binocularly blind (best corrected visual acuity <3/60 in the better eye). The leading causes of uniocular blindness were cataract, trauma related ocular complications, corneal opacity, amblyopia and glaucoma. Binocular blindness was mainly due to cataract, glaucoma, diabetic retinopathy, age related macular degeneration and corneal opacity.

According to study done on causes of blindness at Nkhoma Eye Hospital, Malawi. The most common diagnosis in new outpatients was cataract (52.8%), followed by glaucoma (8.1%), corneal pathology (7.2%), uveitis (4.5%) and maculopathy (3.2%). There were 742 (35.6%) patients with unilateral blindness and 331 (15.9%) patients with bilateral blindness. The most common causes of unilateral blindness were lens pathology (57.8%), followed by glaucoma (12.1%), corneal pathology (10.0%) and uveitis (6.1%). Bilateral blindness was present in 12.5% of males and 16.8% of females respectively. The most common causes of bilateral blindness were lens pathology (54.4%), followed by glaucoma (19.9%), retinopathy (3.6%), maculopathy (3.6%), uveitis (3.6%) and corneal pathology (3.3%) (18).

Significance of the Study

Given the fact blindness is very common including its causes there is no research done in this area. This research attempts to look into the magnitude of the problem among our patients in Jimma university specialized hospital. The other rationale for the study is a lack of any other work done in line of this issue in the Jimma university department of ophthalmology. It helps to know the profile of blindness in JUDO. It may help for strategic planning by the department for implementing vision 2020 goals and monitor the impact. It will be the base for other research in the area in the future.

.

CHAPTER THREE: OBJECTIVE

General Objective

To determine prevalence & profile of blindness at Jimma university department of ophthalmology.

Specific objective

To determine prevalence of blindness at JUDO.

To describe patterns of blindness based on socio-demographic characteristics.

To assess the profile of blindness in the study area.

Chapter Four: METHODS & MATERIALS

4.1 Study area & study period

The study was conducted on patients attending Jimma hospital department of ophthalmology, from July to January 2013. Jimma university department of ophthalmology is the only referral eye center in south western part of Ethiopia**.**

4.2 Study design

Cross-sectional study design was used.

4.3 Source population

All patients visiting jimma university departement of ophthalmology during study period.

4.3.1 Study population

All patients who were blind & visited JUDO during study period.

4.3.2 Population sample

All patients with visual acuity less than 3/60.

4.4 Inclusion & Exclusion criteria

4.4.1 Inclusion Criteria

All patients with visual acuity less than 3/60.

4.4.2 Exclusion criteria

All patients with visual acuity greater than 3/60.

Patients in whom we cannot determine visual acuity.

4.6.1 Data Collection Process and Instrument

A questionnaire was prepared in English and two ophthalmic nurses who are working in the department were trained on how to fill out the questionnaire by the principal investigator.

Consent was asked by languages preferred by patient.

Questioner was filled by ophthalmic nurses. Examination was done residents & ophthalmologists

Data was edited by principal investigator on daily bases.

.

4.6.2 Variables

Dependent Variable - Causes of blindness

- Bilateral blindness
- Unilateral blindness

Independent variable- Age

-Gender

-Occupation

-Distance from hospital

-Duration of the visual loss

-visual acuity

4.7 Operational Definitions.

Legal blindness: those with visual acuity less than 6/60.

Blindness -is visual acuity less than 3/60.

Unilateral blindness refers to visual acuity less than 3/60 in one eye.

Bilateral blindness refers to visual acuity less than 3/60 in both eyes.

Cause refers to final assessment considered cause of blindness.

4.8 Data Analysis

The data was cleaned, edited and entered to Version20 SPSS software for analysis.

Frequency distribution & chi square tests were calculated to detect associations at 5% level of significance for selected variables.

The strength of correlation between variables was tested by logistic regression analysis.

4.9 Data quality Assurance.

The principal investigator trained two ophthalmic nurses on filling the questionnaire and also supervised the completeness and relevance of the data collected daily on data collection days.

The prepared questionnaire was pretested on patients who are not part of the study before it is administered to the actual study group in the presence of the two trained ophthalmic nurses. Principal investigator & ophthalmologist examined the patients to reach to cause of blindness.
Card number of each patient was documented to avoid redundancy.

4.10 Ethical considerations

Ethical clearance was obtained from the ethical committee of Jimma University. Every participant in the study was asked for his/her willingness to be involved in the study and consent was obtained based on free will. The information collected from participants was kept confidential.

CHAPTER FIVE: RESULTS

5.1. Prevalence of blindness

Over a period of 6 months 7,878 patients were seen at Jimma University Departement of Ophthalmology. Of these 206 were blind, and the proportion of blindness was 206/7,878 (2.61%).

Out of 206 patients, 167(81.1%) were unilaterally blind while 39(18.9%) were bilaterally blind. Blind people whose age`s are greater than or equal 55 were 49%.

5.2. Sociodemographic characteristics

There were 140 (68%) male blind & 66(32%) female blind, giving a male to female ratio 2.2:1. The majority of patients (53.9%) were Muslim, 127 (61.7%) were Oromo, 90 (43.7%) were farmers, 111(53.9) were illiterate (Table1).

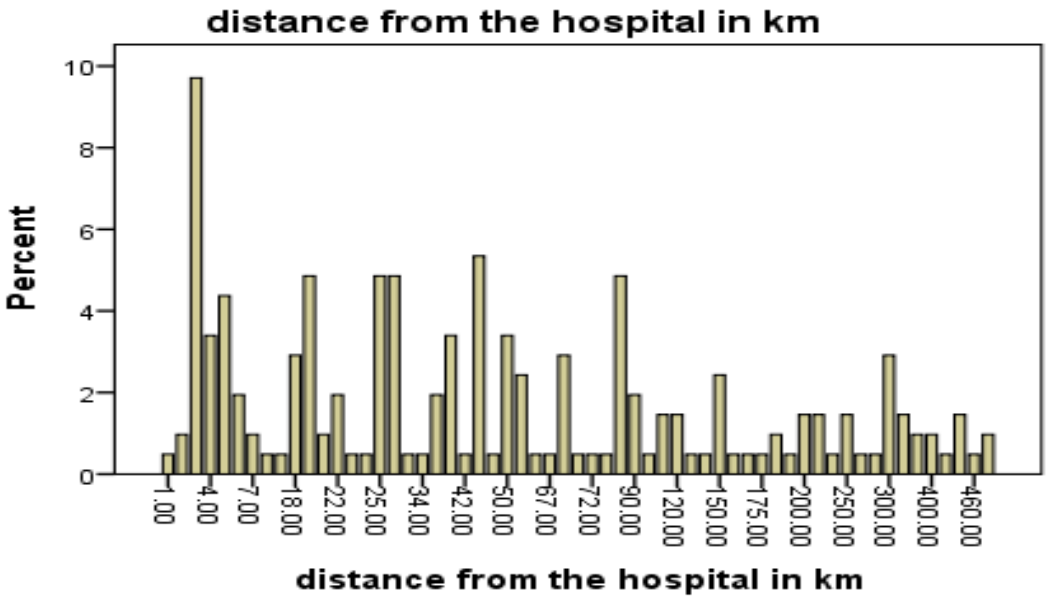
Table 1: Socio demographic characteristics of blind patients seen from July 2013 to January 2014 at JUDO.

Sociodemographic characteristics	**Number of blind patients seen**
Sex of patient	
Male	140(68%)
Female	66(32%)
Religion of patients	
Muslim	111(53.9%)
Orthodox	77(37.4)
Protestant	17(8.3%)
Catholic	1(.5%)
Ethnicity	
Oromo	127(61.7%)
Amahara	42(20.4%)
Dawaro	12(5.8%)

Kaficho	9(4.4%
Gurage	4(1.9%)
Other	12(5.8%)
Occupation	
Farmer	90(43.7%)
Housewife	45(21.8%)
Government	12(5.8%)
Private work	13(6.3)
Student	19(9.2%)
Other	17(8.3%)
Educational status	
Illiterate	111(53.9%)
Read & write	37(18.0%)
Elementary school	34(16.5%)
Higher education	6(2.9%)

5.3. Distance from the Hospital

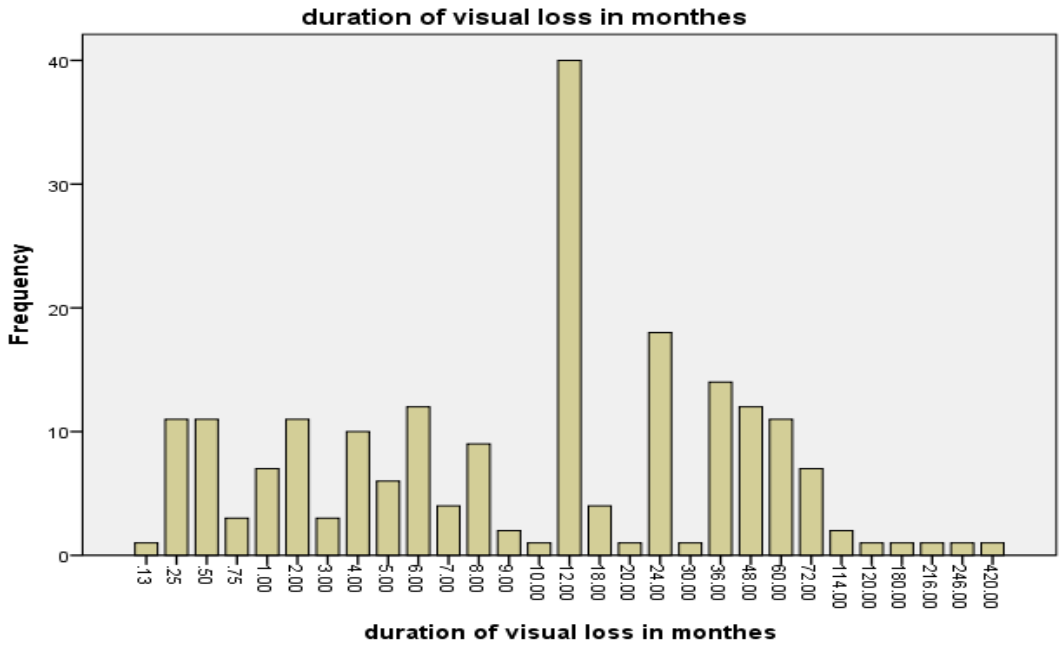
Most of patients were around Jimma town. The average distance of patients was 88km. Some patients came from as far distance as 460km (Bar graph 1).



Bar graph: 1 shows percent versus distance from hospital

5.4. **Duration of visual loss**

The mean duration of illness at presentation was 24.3 months. Median of visual loss was 12months of vision loss. there are also patient who stays at home with illness for 3years (Bar graph 2)



Bar graph: 2 Frequency versus duration of visual loss.

5.5. Causes and Laterality

Cataract consists of 39.3% of blindness. Glaucoma caused blindness in 22.8% patients while corneal and retinal disease comprise of 21.3% and 7.8% of blindness respectively. Cataract caused 30.6% of unilateral blindness & 8.7% of bilateral. Glaucoma caused 17.9% of unilateral blindness & 4.9% of bilateral blindness. Retinal disease caused 5.8% of unilateral blindness & 1.9% of bilateral blindness. Corneal disease caused 19.3% of unilateral blindness & 1.5% of bilateral blindness.

Table 2: Causes of blindness & laterality at JUDO from july 2013 to January 2014.

Causes of blindness	**Unilateral**	**Bilateral**	**Unilateral +bilateral**
Cataract	63(30.6%)	18(8.7%)	81(39.3%)
Glaucoma	37(17.96%)	10(4.9)	47(22.8%)
Corneal disease	41(19.3%)	3(1.5%)	44(21.3%)
Retinal disease	12(5.8%)	4(1.9%)	16(7.8%)
Refractive error	4(1.9%)	3(1.5%)	7(3.4%)
Uveitic	4(1.9%)	0	4(1.9%)
unknown	2(1%)	0	2(1%)
other	4(1.9%)	1(.5%)	5(2.4%)
Total	167(81.1%)	39(18.9%)	206(100%)

5.6. Types of Cataract

Age related cataract consisted of 77.8% of cataracts. Traumatic cataract comprised of 11.1% of cataracts. Presenile cataract was the least out of cataracts.

Table 3: Classes of cataract caused blindness at JUDO from July 2013 to January 2014.

Types of cataract	Frequency	percent
Age related	63	77.8
Traumatic	9	11.1
Secondary to DM	2	2.5
Post uveitic	2	2.5
Congenital	2	2.5
Developmental	2	2.5
Pre-senile	1	1.2
Total	81	100

5.7. Types of glaucoma

The majority of cases were primary open angle glaucoma. Pseudoexfoliative consisted of 19.2% of glaucoma cases and chronic angle glaucoma (4.3%) is the least common of glaucoma.

Table 4: Types of glaucoma caused blindness at JUDO from July 2013 to January 2014.

Types of Glaucoma	**Frequency**	**Percent**
Primary open angle glaucoma(POAG)	20	42.6
Pseudoexfoliatve glaucoma	9	19.2
Normal tension glaucoma(NTG)	8	17
Acute angle closure glaucoma(AACG)	3	6.4
Chronic angle closure glaucoma(CACG)	2	4.3
Other	5	10.6
Total	47	100

5.8. Retinal causes

The majority of retinal causes of blindness were retinal detachment (62.5%).Age related macular degeneration comprised 12.5% of retinal cases.

Table 5: Retinal disease caused blindness at JUDO from July 2013 to January 2014.

Types Retinal Disease	**Frequency**	**Percent**
Retinal detachment	10	62.5
Age related macular degeneration (AMD)	2	12.5
Diabetic retinopathy	2	12.5
Macular scar	1	6.3
Central retinal vein occlusion (CRVO)	1	6.3
Total	16	100

5.9. Corneal cause

Post traumatic corneal opacity consisted majority of the cases (59.1%).Post inflammatory was 31.8% (Table 6).

Table 6: Corneal diseases caused of blindness at JUDO from July 2013 to January 2014.

Corneal Disease	**Frequency**	**Percent**
Post traumatic corneal opacity	26	59.1
Post inflammatory	14	31.8
Corneal opacity(CO) 2ry to trachoma	1	2.3
Corneal dystrophy	1	2.3
Ectasias	1	2.3
Bullous keratopathy	1	2.3
Total	44	100

CHAPTER- 6

Discussion

Blindness is a major public health problem worldwide. In the third world the principal cause include infection, cataract, glaucoma, injury & refractive error.

In our study, the proportion of blindness was 2.6% which is less than a hospital based review of 2536 patients in North central Nigeria (11) where the prevalence of bilateral blindness was 11.0%. This may due difference in methodology used i.e. Retrospective north central Nigeria, prospective in this case. It may also related to seasonal variation in patients flow. Time of study included summer when the number of patient flow decline in the departement. According to a survey to determine the prevalence and causes of blindness in Anambra State of Nigeria(16) ,the prevalence of blindness was estimated to be 0.33% +/- 0.27%.

According to study conducted at a tertiary hospital in Douala, Cameroon(17) Out of the 1927 cases of blindness, 1000 were unilateral, corresponding to a hospital prevalence of 1.84% and 927 cases were bilateral, corresponding to a hospital prevalence of 1.71% .prevalence of blindness is 3.55%. This is comparable with the result of this study.

Majority of blindness (49%) were among people of greater than or equal to 55 years of age which have similarity with a survey conducted in Anambra State of Nigeria (16) where most of the blind are above 50 y of age.

This study showed that 81.1% of blindness was Unilateral & 18.9% were bilateral which is comparable with a general hospital based review of patients in southwestern Nigeria(13) where blindness was bilateral in 471 (30%) patients and unilateral in 1,073 (70%) patients. According to study done on causes of blindness at Nkhoma Eye Hospital, Malawi (18), there were 742 (35.6%) patients with unilateral blindness and 331 (15.9%) patients with bilateral blindness.

In this study, there were more blind males (68%) than females (32%) which have similarity with a general hospital based review of patients in southwestern Nigeria (13) where 858 (56%) were males and 686 (44%) were females. This study showed that 90 (43.7%) were farmers, 45 (21.8%) were housewives which is comparable with, a hospital based review of 2536 patients in North central Nigeria(ref) where blindness was most prevalent among the farmers (40.2%), followed by the house wives (24.4%).

The most common cause of blindness was cataract while glaucoma, corneal disease, retinal disease are 2nd, 3rd & 4th respectively and this is comparable with a study done at a tertiary hospital in Douala, Cameroon (17). In Cameroon study, there were 1927 cases of blindness; the leading causes of bilateral blindness were cataract (50.1%), glaucoma (19.7%), and diabetic retinopathy (7.8%) while the leading causes of unilateral blindness were cataract (40.4%), glaucoma (14.1%), and retinal detachment (9.1%). Prevalence of diabetic retinopathy was less in our study than study in Douala Cameroon. This might be related to poor referral link between diabetic clinic & retinal clinic. There are patients who have been on follow up for long period but had no screening for eye complication.

In our Study, Cataract caused 30.6% of unilateral blindness & 8.7% of bilateral blindness. Glaucoma caused 37(17.9%) of unilateral blindness & 10(4.9%) of bilateral. Retinal disease 12(5.8%) of unilateral blindness & 4 (1.9%) of bilateral. Corneal disease 41(19.3%) of unilateral blindness & 3(1.5%) of bilateral. Similar with review of patients in southwestern Nigeria, the leading causes of bilateral blindness were cataract, 171 (36%); glaucoma, 138 (29%); (13). The most common causes of unilateral blindness were cataract, 446 (41%); glaucoma, 213 (20%); (13).

In this study corneal opacity secondary to trachoma is the least common cause of blindness out of corneal disease. In contrary to result of population-based study on the prevalence of blindness was carried out in Jimma Zone, south-western Ethiopia between November 1994 and January 1995 which was responsible for 20.6% of all blindness.

.

Limitation of the study

Some patients couldn`t remember the exact duration of illness.

Financial constraint

Strength of the study

Study design is prospective so that data was complete

Ophthalmologists are involved in evaluation of patients after interview.

Chapter Seven: Conclusion and Recommendation

Based on this cross sectional study the following conclusions can be drawn.

- Blindness was very common.
- Blindness was more common in old ages.
- There was more blindness in males than females.
- Unilateral blindness was more common than bilateral blindness
- Cataract & glaucoma were the leading causes of blindness followed by corneal disease.
- Blindness more common among illiterate
- Post traumatic corneal opacity was the commonest cause of corneal blindness.

Recommendation

Health education should be give on how to reduce risk of trauma and to come to health facility early. Extension of health facility should be to provide eye care service in closer area for those who in need of service. Outreach service should be strengthened to reach to these people where closer to them. Further study should be done on community to know where blindness common. Risk factor of blindness is also an area of feature research to reduce blindness.

REFERENCES

1. http://www.who.int/mediacentre/factsheets/fs282/en/index.html

2. Auzemery A, Negrel AD .Blindness and low vision in the Sub- Saharian regions, a public health problem. []. EMC ophtalmologie. 2002:(21-591-A-10, P2).

3. Hiratsuka Y, Ono K, Kanai A .The present state of blindness in the world.
.Nihon Ganka Gakkai Zasshi. 2001 Jun; 105(6):369-73.

3.. Rizyal A, Karmacharya PC, Koirala S .Profile of blindness in Nepal: a hospital based study:. Nepal Med Coll J. 2005 Jun; 7(1):54-7.

4. Resnikoff S, Pascolini D, Etya'ale D,et al. Global data on visual impairment blindness in the year 2002: Bull World Health Organ. 2004; 82(11):844-51

5. Kuper H, Dinnen B, Befidi-Mengue R, Foster A. Prevalence and causes of blindness and visual impairment in Muyuka: a rural health district in south west province Oye JE, Cameroon. Br J Ophthalmol. 2006; 90(5):538–542.

.

6. Kuper H. Prevalence and causes of blindness and visual impairment in Limbe urban area, South West Province Oye JE., Cameroon

7. Thylefors B, Négrel AD, Pararajasegaram R, Dadzie KY .Global data on blindness..Bull World Health Organ. 1995;73(1):115-21.

8. Ethiop.J.Healt Dev. 2008;22(3):298-301].

9. Lewallen S, Courtright P. Blindness in Africa: present situation and future needs. Br Ophthalmol 2001; 85:897–903.

10. Ngondi J, Ole-Sempele F, Onsarigo A, Matende I, Baba S, Reacher M, Matthews F, Brayne C, Emerson PM .Prevalence and causes of blindness and low vision in southern Sudan.

. PLoS Med. 2006 Dec;3(12):e477. Erratum in: PLoS Med. 2007 Jun;4(6):e227.

11. . Blindness and visual impairment in north central Nigeria: a hospital based study.
Niger Postgrad Med J. 2013 Jun; 20(2):98-103.

12. . Richard AI, Monocular blindness in Bayelsa state of Nigeria.Pan Afr Med J. 2010 Feb 12; 4:6. Epub 2010 Feb 12

13. Oluleye TS, Ajaiyeoba AI, Akinwale MO, Olusanya BA. Causes of blindness in Southwestern Nigeria: a general hospital clinic study. Eur J Ophthalmol. 2006 Jul-Aug; 16(4):604-7.

14 . Al-Bdour MD, Al-Till MI, Abu-Khader IB.Causes of blindness among adult Jordanians: a hospital-based study Eur J Ophthalmol. 2002 Jan-Feb; 12(1):5-10.

15. Zerihun N, Mabey D. Blindness and low vision in Jimma Zone, Ethiopia: results of a population-based survey. Ophthalmic Epidemiol. 1997 Mar;4(1):19-26.

16 . Ezepue UF. Magnitude and causes of blindness and low vision in Anambra State of Nigeria. Public Health. 1997 Sep;111(5):305-9.

17. Eballé AO, Mvogo CE, Koki G, Mounè N, Teutu C, Ellong A, Bella AL.
Prevalence and causes of blindness at a tertiary hospital in Douala, Cameroon.
Clin Ophthalmol. 2011; 5:1325-31. doi: 10.2147/OPTH.S23064. Epub 2011 Sep 19

18. . Sherwin JC, Dean WH, Metcalfe NH. Causes of blindness at Nkhoma Eye Hospital, Malawi Eur J Ophthalmol. 2008 Nov-Dec;18(6):1002-6.

19. M. Melese, W. Alemayehu, S Bayou. Low vision and blindness in adults in Gurage Zone, central Ethiopia, British Journal of Ophthalmology 2003;87:677-680.

20. Resnikoff S, Pascolini D, Etya'ale D, et al. Global data on visual impairment in the year 2002 Bull World Health Organ. 2004; 82(11):844–851

21. Cass H, Landers J, Benitez P. Causes of blindness among hospital outpatients in Ecuador . Clin Experiment Ophthalmol. 2006 Mar; 34(2):146-51

.

22. Sherwin JC, Dean WH, Metcalfe NH .Causes of blindness at Nkhoma Eye Hospital, Malawi..Eur J Ophthalmol. 2008 Nov-Dec;18(6):1002-6.

23. Dawodu OA, Osahon AI. Prevalence and causes of blindness in Otibhor Okhae Teaching Hospital, Irrua, Edo State, Nigeria. Emifoniye Exophthalmia Epidemiol. 2003 Dec; 10(5):323-30

.

24. Causes of Blindness among Adult Yemenis: A Hospital-based Study. Middle East Afr J Ophthalmol. 2008 Jan; 15(1):3-6.

25. Sherwin JC, Dean WH, Metcalfe NH. Causes of blindness at Nkhoma Eye Hospital, Malawi. Eur J Ophthalmol. 2008 Nov-Dec;18(6):1002-6.

26. Al-Akily SA, Bamashmus MA .Causes of Blindness among Adult Yemenis: A Hospital-based Study. Middle East Afr J Ophthalmol. 2008 Jan;15(1):3-6. doi: 10.4103/0974-9233.53367

27. WHO. [Visual impairments and blindness. Fact Sheet No. 282]. April 2011. French

28. Bansal RK, Khandekar R, Nagendra P, Kurup P, magnitude and causes of unilateral absolute blindness in a region of Oman: a hospital-based study,.Eur J Ophthalmol. 2007 May-Jun;17(3):418-23.

29. Dawodu OA, Osahon AI .Prevalence and causes of blindness in Otibhor Okhae Teaching Hospital, Irrua, Edo State, Nigeria, Emifoniye E.Ophthalmic Epidemiol. 2003 Dec;10(5):323-30.

30. Hod Y, Corcia Y, Yassur Y, Geyer O. Causes of blindness in the year 2000 in Israel. Harefuah. 2000 Feb 15;138(4):276-8, 342. Hebrew.

31. Maberley DA, Hollands H, Chuo J, et al. The prevalence of low vision and blindness in a Canadian inner city Eye (Lond). 2006 Mar;20(3):341-6.

32. Review Thomson I. Blindness and eye disease in Cambodia . Br J Ophthalmol. 1997 Jul;81(7):578-80.

33. Krieglstein GK. Blindness caused by glaucoma .Ophthalmologe. 1993 Dec; 90(6):554-6.

34. Hiatt RL, J Tenn .world blindness Med Assoc. 1987 Jul;80(7):403-6

Annex-I Questionnaire for a research on the prevalence & profile of blindness

Good Morning / Afternoon.

I am……..,a physician/Nurse working in JUDO. We are conducting a research on Prevalence & causes of blindness to assess the magnitude of the problem among patients visited ophthalmology departement .If you are willing, we want to involve you in the study and all we do is ask you some health related questions .

The informations obtained from the interview will be kept confidential and will be used for the stated objectives only. If you are convinced about its relevance and have decided to participate in the study, please put your name and signature in the space provided below.If you have any question about the study, you can contact us through the address stated at the end.

Name of the principal Investigator…….

Signature of the principal investigator……

Address of principal investigator ……

A. Background information

I. Name_____

II. Card number_____

III. Age (in completed yrs)_____

IV. Sex 1. Male 2. Female

V. Religion 1. Orthodox 2. Muslim 3. Protestant 4. Catholic 3. Other, specify----------

VI. Ethnicity 1. Oromo 2. Amhara 3. Gurage 4. Kaficho 5. Dawro 6. Other, specify_____

VII. Occupation

Housewife

Farmer

Merchant

Government employee

Daily laborer

Private work

Student

Other specify----------

VIII. Education

1. Illiterate 2. Read and write 3. Elementary school 4. High school . 5. Higher education levels (diploma and degree)

IX. Distance from the hospital _____

B. History

1. Duration of the visual loss ----------

2. Is there history of use of eyeglass? Yes ❍ No ❍

3. Is there a history of diabetes mellitus? Yes ❍ No ❍

4. Is there a history of trauma? Yes ❍ No ❍

5. History of redness, pain, photophobia? Yes ❍ No ❍

. 6. Is there history of HIV? Yes ❍ No ❍

C. Examination

1. Presenting V/A Right eye---------- Left eye----------

2. Causes of blindness

I. Cataract a. Congenital b. Developmental c. presenile d. Age related e. Traumatic

f. Secondary to DM

g. Others, Specify _____

II. Glaucoma a. Congenital b. POAG c. CACG d. AACG, e. angle recession glaucoma f. normal tension glaucoma f. Lens related, others

III. Refractive error a. Myopia b. Hyperopia c. Astigmatism

IV. Retinal causes a. Diabetic retinopathy b. Retinal detachment c. AMD d. Others, specify_____

V. Corneal disease a. Trachomatous b. post inflammatory c. Traumatic scar d. Dystrophy e. Ectasias e. Others, specify _____

VI. Optic neuropathy

VII. Trauma (specific diagnosis) _____

VIII. Others specify, _____

DEPARTMENT OF OPHTHALMOLOGY JIMMA UNIVERSITY; IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE CERTIFICATE OF SPECIALITY IN OPHTHALMOLOGY.

Name of the student: Hirpo Teno

Title of thesis: prevalence & profile of blindness among patients seen in Jimma Specialized Hospital, South Western Ethiopia.

Sr.No	Criteria/items	Comments/rating
1	Title of the research clearly stated	yes
2	Is the problem well justified	yes
	.Summary/abstract/	yes
	.Introduction/background	yes
	.Statement of the problem	yes
	.Literature review	yes
	.Rationale /significance of the study	yes
3	Are the objectives of the study clearly stated?	yes
	.General objective	yes
	.Specific objective	yes
4	Methods (are the methods scientifically & ethically sound?)	yes
	.Study area	yes
	.Study design	yes
	.Source population	yes
	.Study population	yes
	.Inclusion & Exclusion criteria	yes
5	Instrument & data collection procedure	yes
6	Study variables	yes
7	Operational definition	yes

8	Data analysis	yes
9	Data quality assurance	yes
10	Ethical consideration	yes
11	Dissemination plan	yes
12	Did the research involve the special population group (like children, pregnancy, homeless etc.)	yes
13	Does informed consent & information sheet attached formulated for study subjects to comprehend the message?	yes
14	Any protection of research participant confidentiality ,benefit	yes
15	Work plan & budget justification	
	General comment Final Recommendation	 Approved/not

Name of advisors	Signature	Date
1. Jafer kedir	……	……..
2. Sisay bekele	……	……

DECLARATION

I, the under signed, declare that this thesis proposal is my original work, and has not been presented for any degree in any other university and that all sources of material used for this proposal and all people and institutions that gave support for this proposal have been duly acknowledged:

Name: Hirpo Teno (MD)
Signature: …….
Place: jimma, Ethiopia
Date of submission: ……..
Confirmed by: Departement Head Signature Date

……. ……. ……..

This work has been submitted with my approval as university advisor

Advisor`s Name Signature Date

1. Dr. Jafer Kedir …… …….
2. Dr.Sisay Bekele …….. ……..