CAUSES OF BLINDNESS AMONGST PATIENTS APPLYING FOR VISUAL HANDICAP CERTIFICATION AT TERTIARY EYE CARE HOSPITAL

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CHIEF AUTHOR

DR. K.BHANU NAGASRI, POST GRADUATE, DEPARTMENT OF OPHTHALMOLOGY, GREH, VISAKHAPATNAM

CO AUTHOR

DR. N.RAMABHARATHI MS, ASSOCIATE PROFESSOR, DEPARTMENT OF OPHTHALMOLOGY, GREH, VISAKHAPATNAM

- FINANCIAL DISCLOSURE

NO CONFLICT OF INTEREST

INTRODUCTION

- **WHO Definition of blindness:**

  "Visual acuity of less than 3/60(snellen) or its equivalent" or inability to count fingers in daylight at a distance of 3 meters.

- **NPCB Definition of blindness:**

  "Defined as presenting distance visual acuity of <6/60 or central visual fields <20degrees in the better eye.

- For the rehabilitation of visually impaired certain benefits were provided by the government. The ministry of social justice and empowerment of government of india given the guidelines for disability, the minimal degree of disability should be 40% for an individual to be eligible for any concessions or benefit, for that they have to apply for the visual hadicap certification.

AIMS AND OBJECTIVES

- To study the causes of blindness amongst patients applying for visual handicap certification at tertiary eye care hospital.
- To understand the relation of age and sex with various etiologies.

MATERIALS AND METHODS

- Study design : Retrospective study
- Studyperiod : 1year i.e.,from August 2020 to august 2021
- Sample size : 272 patients (360 eyes)
- Study setup : study was conducted on patients who had applied for visual handicap certification at DR. R.S.P.R.Government regional eye hospital,visakhapatnam

- **INCLUSION CRITERIA:**

All patients who applied for visual handicap certificate.

- **EXCLUSION CRITERIA:**

study excludes the treatable causes like

1. Cataract
2. Correctable refractive errors without amblyopia
3. Posterior capsular opacification
4. Recent retinal detachment

METHODOLOGY

- Examination was done by the ophthalmologists appointed for the handicap board.
- Detailed history of the patient was taken.
- Best corrected Visual acuity by snellen chart
- Detailed Slit lamp examination of anterior segment
- Fundus examination with 78D and Indirect ophthalmoscope.
- B scan was done for posterior segment evaluation if required.
- Goldmann Applanation Tonometry or Non Contact Tonometry to record intraocular pressure in glaucoma cases
- visual field examination using Humphrey Visual field analyser in required cases.
- Optical coherence tomography of Macula, RNFL, GCC was done in required cases.
- After detailed evaluation, patients were diagnosed and categorized according to the criteria for visual handicap

DISABILITY GUIDELINES

(Issued by the office of Chief Commissioner for persons with disabilities**)

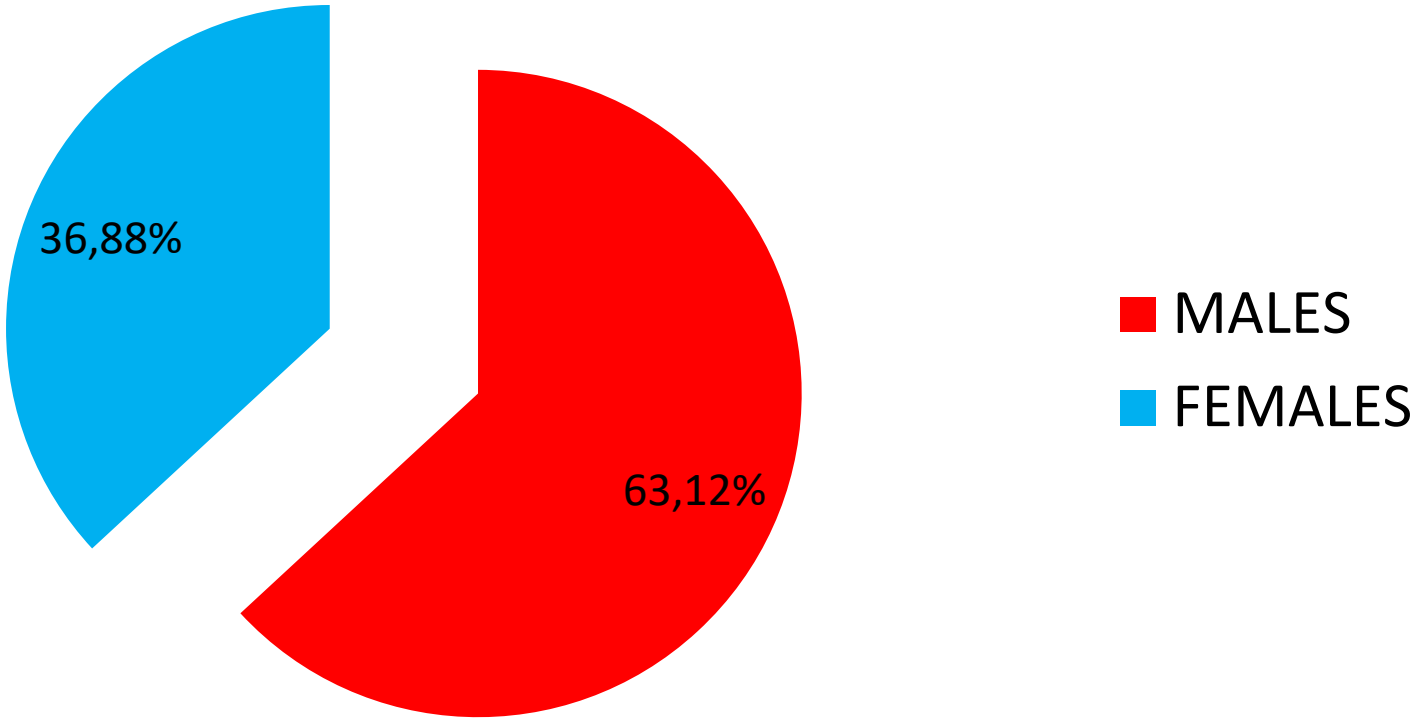

A white cane, the international symbol of blindness

Category	Better eye	Worse eye	Field of vision	Percent of blind	WHO definition
0	6/9- 6/18	6/24-6/36	-	20	-
I	6/18-6/36	6/60-Nil	-	40	Low vision
II	6/60-4/60	3/60-nil	10-20 degrees	75	Severe visual impairment
III	3/60-1/60	Cf 1m to nil	10 degrees	100	Total blindness
IV	Cf1m to nil	Cf 1m to nil	10 degrees	100	Total blindness
One eyed	6/6	Cf 1m to nil	-	30	-

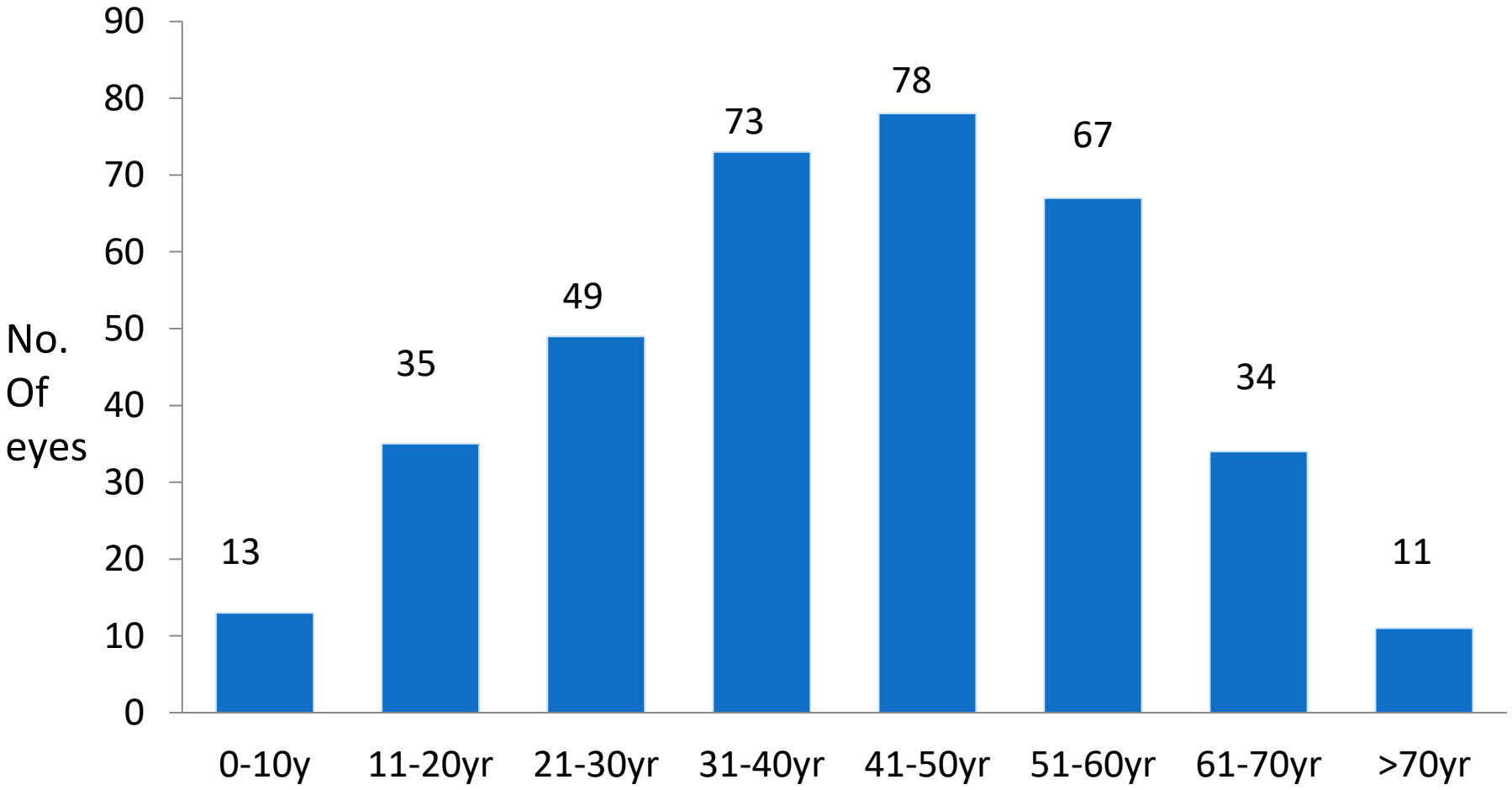
**http://www.ccdisabilities.nic.in/eval2/page6.htm.

RESULTS

sex distribution



AGE DISTRIBUTION



AGE AND SEX DISTRIBUTION

AGE IN YEARS	MALES(%)	FEMALES(%)	TOTAL(%)NO.OF PATIENTS
0-10	10	4	14 (5.14%)
11-20	24	10	34 (12.5%)
21-30	26	14	40 (14.7%)
31-40	35	15	50 (18.3%)
41-50	46	18	64 (23.5%)
51-60	34	14	48 (17.6%)
61-70	9	7	16 (5.8%)
>70	6	0	6 (2.2%)
TOTAL	191 (70.2%)	81 (29.7%)	272 (100%)

CAUSES OF BLINDNESS

	Preventable causes	190 eyes(52.77%)
1.	Phthisis bulbi	58 (16.1%)
2.	Corneal opacities	48 (13.3%)
3.	Glaucoma	30 (8.3%)
4.	Retinal diseases	12 (3.3%)
5.	Amblyopia	12 (3.3%)
6.	Empty socket	10 (2.7%)
	Non preventable causes	170 eyes(47.23%)
1.	Retinitis pigmentosa	76 (21.1%)
2.	Optic atrophy (include primary, secondary)	36 (10%)
3.	Congenital anomalies	16 (4.4%)
4.	Degenerative myopia	18 (5%)
5.	Macular degenerations and dystrophies (ARMD)	22 (6.1%)
6.	others	2 (0.5%)
	Total	360 eyes (100%)

AGE AND PREVENTABLE CAUSES DISTRIBUTION

	DISEASES	0-10Y	11-20Y	21-30Y	31-40Y	41-50Y	51-60Y	61-70Y	>70 Y	TOTAL
	PREVENTABLE CAUSES									190eyes(52.77 %)
1.	Phthisis bulbi	0	2	3	15	19	15	5	0	59(31.2 %)
2.	Corneal opacities	1	2	2	6	14	18	4	1	48(25.2 %)
3.	Glaucoma	0	1	2	3	7	11	7	1	32(16.8 %)
4.	Retinal diseases	0	1	1	1	2	4	4	2	15(7.8 %)
5.	Amblyopia	0	4	5	8	4	0	0	0	21(11. %)
6.	Empty socket	1	2	1	4	3	2	1	1	15(7.8 %)

AGE AND NON PREVENTABLE CAUSES DISTRIBUTION

	DISEASES	0-10Y	11-20Y	21-30Y	31-40Y	41-50Y	51-60Y	61-70Y	>70Y	TOTAL
	NON PREVENTABLE CAUSES									170eyes(47.23%)
1.	Retinitis pigmentosa	0	12	16	18	12	10	6	0	74(43.5%)
2.	Optic atrophy	4	4	6	8	10	3	1	0	36(21.1%)
3.	Congenital anomalies	6	4	3	2	2	1	0	0	18(10.5%)
4.	Degenerative myopia	0	0	8	4	4	2	0	0	18(10.5%)
5.	Macular diseases	0	3	2	3	1	1	6	6	2212.9%)
6.	others	1	0	0	1	0	0	0	0	2(1.7%)

DISCUSSION

- In our study, majority are belongs to 31-50 age group (41.5%).
- Males (70%) are more common than females (30%).
- Preventable causes (52.77%) are more common than non preventable causes (47.23%).
- Phthisis was the most common preventable cause (16.1%) followed by corneal opacity (13.3%).
- Retinitis pigmentosa is the most common non preventable cause (21.1%) followed by optic atrophy (include primary and secondary) (10%).
- Most commonly the patients are come under category one (35%) visual disability guidelines . About 28% patients were 100% blind.

CONCLUSION

- In younger age group, congenital anomalies and amblyopia were high.
- In middle age group, pthisis bulbi, corneal opacities, retinitis pigmentosa were high.
- As age advances, prevalence of glaucoma and macular degenerations like ARMD were high.

RECOMMENDATIONS

- Early diagnosis and treatment and regular follow up reduces the blindness secondary to preventable causes like glaucoma, uveitis, trauma and infections causing corneal opacities.
- High prevalence of RP and other congenital diseases require genetic counselling to patients.
- Advocate inclusion of low vision care as part of eye care.

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