

**CAUSES OF BLINDNESS IN A TERTIARY REGIONAL EYE CARE CENTER IN SOUTH INDIA**K. Revathy<sup>1</sup>, B. Yugandhar<sup>2</sup>, G. Narendranath Reddy<sup>3</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT:** Blindness and visual impairment is an important public health problem worldwide. The numbers of blind people in India are 12 million, with the estimated increase to 15 million expected by 2020.<sup>1</sup> This is a retrospective study done to enumerate the causes of blindness among people attending a regional tertiary care center for visual disability certificate program over a period of one year. Most common cause of blindness was phthisis bulbi and is also the most common cause of unilateral loss of vision. The second most common cause is leucoma. Most of the studies done till date found cataract as the most common cause of blindness in India. In this study most of the avoidable causes such as cataract and refractive errors were not noted but there were a high number of cases of visual impairment due to leucoma accounting for 20.91% of cases, most of them due to trauma indicating the need for educating primary care providers regarding the early identification and treatment of ocular injuries and prompt referral to an ophthalmologist in the rural areas.

**KEYWORDS:** Blindness, leucoma, south India.

**INTRODUCTION:** Blindness and visual impairment is an important public health problem worldwide. About 285 million people are visually impaired of who nearly 39 million are blind and 246 million have low vision. 90% of the world's visually impaired people live in developing countries. The number of blind people in India are 12 million, with the estimated increase to 15 million expected by 2020, and additional 52 million visually impaired.<sup>1,2</sup>

**METHODS:** This is a retrospective study done to enumerate the causes of blindness among people attending a regional tertiary care center for visual disability certificate program over a period of one year. 918 subjects attended the outpatient department (OPD) over a period of one year with the complaint of loss of vision and were evaluated for the extent and cause of blindness. Blindness was defined according to WHO as vision < 3/60 in the better eye in patients with bilateral causes of blindness, while in patients with unilateral cause of loss of vision all the patients had vision of <3/60 in the affected eye.

**RESULTS:** Among the 918 patients, 55.7% (n=512) were males, 44.3% (n=406) were females. People aged 45- 65 constituted 37.93% of the patients attending the OPD, while 0-15 yr old patients accounted for 11 %. Among the 918 patients, 68.5% (n=629) had unilateral cause of visual impairment while 31.48% (n=289) patients had bilateral blindness. Most common cause of blindness was phthisis bulbi accounting for 30.9% (n=284) of all cases, and is also the most common cause of unilateral loss of vision. The second most common cause is leucoma accounting for 20.91 % (n=192) of total cases (n=918), and is also the most common cause of blindness due to anterior segment

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lesions accounting for 61.5% (n=192) of the cases. The single most common cause of bilateral loss of vision was Retinitis pigmentosa accounting for 5.1% (n=47) of all cases.

AGE (y)	Males	Females
0-15	64	39
16-25	59	51
26-35	67	57
36-45	69	77
46-55	91	75
56-65	109	74
>66	53	33
<b>Total (n)</b>	<b>512</b>	<b>406</b>

**Table 1 : Age Distribution**

POSTERIOR SEGMENT	BILATERAL	UNI
RETINITIS PIGMENTOSA	47	0
CHORIORETINAL DEGENERATION	10	0
HEALED CHOROIDITIS	7	0
HMD	5	0
AMD	2	0
RETINAL DETACHMENT	6	6
	77	6

**Table 2: Posterior segment causes of visual impairment**

Anterior segment	BILATERAL(N)	UNILATERAL (N)
LEUCOMA	21	171
ANTERIOR STAPHYLOMA	14	42
CORNEAL DYSCRASIAS	4	2
KERATOCONUS	1	0
BULLOUS KERATOPATHY	2	2
GRAFT REJECTION	0	7
CORNEAL DYSTROPHY	2	0
BUPHTHALMOS	1	0
DRY EYE (KERATOMALACIA)	1	1
TRAUMATIC CATARACT	0	1
SUBLUXATED LENS	0	1
COMPLICATED CATARACT	2	12
GLAUCOMA	21	5
OCCLUSIO PUPIL	0	1

**Table 3: Anterior segment causes of visual impairment**

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Others:	BILATERAL (N)	UNILATERAL (N)
OPTIC ATROPHY	44	23
PTHYSIS BULBI	27	257
EMPTY SOCKET(POST OP)	0	82
MICROOPHTHALMOS	15	14
ANOPTHALMOS	2	0
NYSTAGMUS	34	0
AMBYLOOPIA	12	1
ALBINISM	8	0

Table 4: Other causes of blindness

**DISCUSSION:** Global prevalence of blindness has decreased from 45 million blind persons in 2000 to 39 million in 2010. This decreased trend of prevalence was also reflected in India.<sup>3</sup> The World Health Organization report shows a significant reduction in the number of the blind persons in India from 18.7 million in 2000 to 12 million in 2010 but with the estimated increase to 15 million expected by 2020, and additional 52 million visually impaired. With the launch of Vision 2020 global initiative, the focus has shifted to all causes of avoidable blindness rather than being limited to cataract and rapid assessment done to include all causes of avoidable blindness.<sup>4,5,6</sup> In this study we have taken as a study group patients who have visual impairment unilaterally or bilaterally and seeking a visual disability certificate, most of them untreated and some with congenital causes of blindness. Most of the studies done till date found cataract as the most common cause of blindness in India,<sup>7</sup> but they were population based or included patients who were seeking treatment. In this study most of the avoidable causes such as cataract and refractive errors were not noted, as the focus on cataract has led to awareness in rural communities with people seeking treatment.<sup>3,8</sup> But there were a high number of cases of visual impairment due to leucoma accounting for 20.91% of cases, most of them due to trauma indicating the need for educating primary care providers regarding the early identification<sup>9</sup> and treatment of ocular injuries and prompt referral to an ophthalmologist in the rural areas.

### REFERENCES:

1. Blindness and Visual Impairment: Global Estimates of Visual Impairment 2010. International Agency for the Prevention of Blindness: Vision-2020.
2. India: A Vision 2020 Handbook on Equipping a Secondary Eye Hospital. January 20, 2010.
3. Kupfer H, Polack S, Limburg H (2006) Rapid assessment of avoidable blindness. *Community Eye Health* 19: 68-9.
4. VISION 2020 the Right to Sight - Plan of Action NPCB, India Ophthalmology / Blindness Control Section, Govt. of India.
5. Vision 2020: The Right to Sight: Global Initiative for the Elimination of Avoidable Blindness: Action Plan 2006-2011.
6. Working together to eliminate avoidable blindness: Vision 2020: Action Plan 2006-2011.
7. Siraj R, Nirmalan R, Blindness and visual impairment in a Rural South Indian Population. The comprehensive eye survey. *Ophthalmol* 2003;110; 1491-8.

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8. Khanna Rohit C, Marmamula Srinivas, Krishnaiah sannapaneni, Pyda Giridhar, Chakrabarti Subhabrata, and Rao Gullapalli N. Changing trends in the prevalence of blindness and visual impairment in a rural district of India: Systematic observations over a decade. *Indian J ophthalmol.* 2012 Sep-Oct; 60(5): 492-497.
9. Bhattacharjee, H., Das, K., Borah, R. R., Guha, K., Gogate, P., Purukayastha, S., & Gilbert, C. (2008). Causes of childhood blindness in the northeastern states of India. *Indian Journal of Ophthalmology*, 56(6), 495–499.

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