



PROFILE OF VISUAL HANDICAP IN A MEDICAL COLLEGE IN EASTERN INDIA

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ABSTRACT **Aim:** To analyze various diseases causing visual handicap in a district in eastern India based on certificates issued by ophthalmic surgeons.

Materials and Methods: Patients were included in the study after detailed history and examination, both from outpatients and handicap board from January to November 2018. Information was analyzed using MS excel.

Result: Two hundred people were visually handicap during this period. Majority of patients presented with unavoidable causes (congenital abnormalities 36.25%, optic atrophy 13%, age related macular degeneration 4%, retinitis pigmentosa in 3.5%). Cases of preventable causes were diabetic retinopathy (6%), glaucoma (4.5%), corneal scar (11%).

Conclusion: High prevalence of congenital cases was found this study. Early diagnosis and management is required to prevent blindness arising out of diabetic retinopathy and glaucoma. Measure needs to be taken to prevent bilateral cases of corneal scarring. Such steps are proper health education, treatment of malnutrition, vaccination and inadvertent use of systemic medications.

KEYWORDS : Visual handicap, certification

INTRODUCTION:

Visual disability, resulting from various ocular diseases remains major public health concerns¹. Globally, 253 million people are visually impaired, out of which 36 million are blind and 217 million have moderate to severe visual impairment (VI).² Due to increase in life expectation, absolute number of blind patients have increased, though diseases causing blindness have been managed more effectively over the decades due to innovation in treatment modalities. South – East Asia (including India) has highest number of blindness.³ Much of the load of blindness (80%) has been attributed to avoidable causes that can be either prevented or corrected easily.¹

Patients having visual impairment is placed on the blind register by an ophthalmologist. Percentage of visual handicap is accorded as proposed by the Ministry of Social Justice and Empowerment 5th Jan 2018.⁴

MATERIAL AND METHODS:

Patients obtaining visual disability certificates from January 2018 to November 2018 were re-analyzed.

Details about the presence of any complaints related to eye diseases, past history and family history were noted. All persons were screened with Snellen's chart for presenting and best corrected vision acuity (BCVA). Examination of the anterior segment of the eye and ocular adnexa was carried out by torch light /slit lamp. Refraction (dry/wet as required) was done with retinoscopy using a streak retinoscope. Dilated fundus evaluation was done in all patients with direct/ indirect ophthalmoscopy/ 78/90 Diopter lens. IOP measurement was done by Schiotz. Visual field/optical coherence tomography was done as and when required (patients were referred). Three ophthalmologists from the hospital examined every case. Causes and percentage of visual disability and purpose of visual disability certificate were noted. Routinely, the data related to the purpose of the visual handicap certification is mentioned in the blindness register of the hospital. Patients having visual handicap of 40% were included in the study. Data were entered into database and analyzed using Graph pad Prism version 4 and MS excel.

RESULTS

Two hundred patients were included in the study. Mean age of

presentation was (range 5-80 years). There were 153 males and 43 females. Male to female ratio was 153:47 (3.3:1) (Table 1). Difference was statistically significant (P=0.004).

Table 2 shows no of patients in different group. 84 patients were completely blind (visual acuity < 3/60 or central visual field less than 10 degree in the better eye).

Leading causes of visual impairment were congenital malformation (n=93, 46.5%) followed by corneal pathology (n=27, 13.5%). Other causes are optic atrophy (n=17, 8.5%), retinitis pigmentosa (n=16, 8%), glaucoma (n=13, 6.5%), diabetic retinopathy (n=11, 5.5%), macular pathologies (n=12, 6%).

Causes of obtaining handicap certificate are described in Image 2.

DISCUSSION

Innumerable ocular and systemic diseases can affect anatomical or functional visual loss leading to permanent visual impairment. This puts economic burden to society due to impaired working abilities of affected individual.⁵

Analyzing the causes of visual handicap provides important clues for providing better health care services at community level.⁶ There have been many surveys in abroad and India regarding the prevalence of blindness in the community.⁷⁻¹¹ Evidence based medicine helps to take preventable steps, set up investigative facility for early detection or rehabilitative measures in case of late presentation.

There were 153 male and 47 females in this study group. Increased outdoor activity in males could be the reason for this high male preponderance. Financial gain, need for employment can also be the reason for obtaining handicap certificate.

There was significant higher no of patients presented in 20-39 years (n=88, 44%) followed by 40-59 years (n=62, 31%). The reason behind this discrepancy was clearly due to certain benefits of working population such as employment, education and travel. All these reasons are motivating force for young generation as compared to elderly. Similar observations were made in Bunce et al (1998) study.¹²

In our study, congenital anomalies are main cause of acquire handicap certificate. The reason can be there were lot certificate renewals which presented at various age.

Congenital abnormalities were seen bilateral anophthalmos, microphthalmos, colobomas. Our study findings are comparable to Ghosh S et al which accounted for 38.71% of all disability.¹³ This finding may be explained by the fact that consanguinity and congenital rubella syndrome are common in study area. Congenital abnormalities account for severe visual impairment and blindness in 18% of blind school children in South India.⁸

In our study, optic atrophy is second common cause of permanent visual loss in our study. High prevalence of undetected infectious disease such as tuberculosis, viral illness, delay in seeking treatment, non compliance all can be the causes.

Table 1: Age and sex distribution of causes of visual impairment

Causes	Age												Total
	5-19 y			20-39y			40-59y			>60y			
	M	F	T	M	F	T	M	F	T	M	F	T	
Congenital anomalies	15	4	19	40	12	52	15	4	19	2	1	3	93 (46.5%)
Acquired													
RETINA													
• Diabetic retinopathy	0	0	0	3	1	4	2	3	5	1	1	2	11 (5.5%)
• Macular pathology (ARMD , myopic degeneration)	0	0	0	3	0	3	2	0	2	4	3	7	12 (6%)
• Retinitis pigmentosa	2	0	2	6	0	6	8	0	8	0	0	0	16 (8%)
CORNEA													
• Corneal opacity (Post trauma, autoimmune, chemical Injury)	7	0	7	8	0	8	4	4	8	4		4	27 (13.5%)
OpDISC													
• Non Glaucomatous Optic atrophy (Neurologic, NAION)	0	0	0	4	3	7	6	4	10	0	0	0	17 (8.5%)
• Glaucoma	0	0	0	0	0	0	6	4	10	2	1	3	13 (6.5%)
Others	3	0	3	6	2	8	0	0	0	0	0	0	11 (5.5%)
Total	27	4	31 (15.5%)	70	18 (44%)	88	43 (31%)	19	62 (9.5%)	13	6	19	200

Table 2:

Handicap Percentage	Patients
40-60 (Low vision IIIa- IIIc)	57
70-80(Low vision III d- IIIe)	59
90-100 (blindness)	84

Table 3:

Causes	B/L	U/L	Total	Total (percentage)
Phthisis bulbi	8	16	24	24 (6%)
Anophthalmos	8	10	18	145 (36.25%)
Microphthalmos	94	10	104	
Coloboma	16	7	23	
Albinism with Nystagmus	2		2	
RP	14	0	14	14 (3.5%)
Advanced Diabetic eye disease	24	0	24	24 (6%)
Myopic degeneration	24	1	25	
Advanced ARMD	8	8	16	16 (4%)
Corneal Dystrophy	4	4	8	44 (11%)
Corneal Opacity (Post Autoimmune/ ulcer)	22	14	36	
Staphyloma	2		2	
Glaucoma	12	6	18 (4.25%)	18 (4.5%)
Non glaucomatous Optic atrophy	34	18	52 (13%)	52 (13%)
amblyopia	22	0	22	22 (5.5%)
Others			10	
Total			400	

Image 1

19.3. Visual Impairment Certification Criteria and Gradation

Vision assessment should be done after best possible correction (medical, surgical or usual/conventional spectacles). The Ophthalmologist shall circle the vision Status and the Percentage Impairment and mark the Disability category accordingly as under:-

Better eye Best Corrected	Worse eye Best Corrected	Per cent Impairment	Disability category
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44 (11%) patients had corneal blindness, which was also the third major cause for obtaining handicap certification. They were sequel to corneal ulcer, resolved viral keratitis or malnutrition (vitamin A deficiency precipitated by measles or debilitation) patients had bilateral opacity. Improving awareness about intake of vitamin A rich food, immunization against measles, proper and timely use of antimicrobial agents may prevent these serious consequence.¹⁴

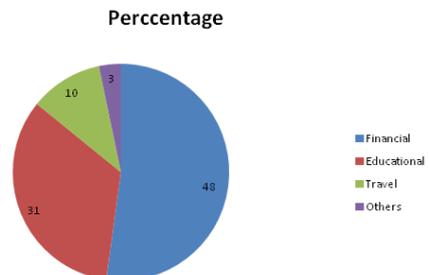
CONCLUSION:

In this study, most common cause of blindness was congenital, so no treatment was available. Only preventable measures like (genetic counseling, antenatal ultrasound, nutritional supplementation, immunization etc) and rehabilitative measures (refraction, low visual aids, oculoplasty procedures to improve cosmesis)can be undertaken. Routine screening is a must to detect and treat glaucoma and diabetic retinopathy to prevent complications.

6/6 to 6/18	6/6 to 6/18	0%	0
	6/24 to 6/60	10%	0
	Less than 6/60 to 3/60	20%	1
	Less than 3/60 No Light Perception	30%	II (One eyed person)
6/24 to 6/60	6/24 to 6/60	40%	III a (low vision)
Or Visual field less than 40 up to 20 degree around centre of fixation or hemianopia involving macula	Less than 6/60 to 3/60	50%	III b (low vision)
	Less than 3/60 to No Light Perception	60%	III c (low vision)
Less than 6/60 to 3/60	Less than 6/60 to 3/60	70%	III d (low vision)
Or Visual field less than 20 up to 10 degree around centre of fixation	Less than 3/60 to No Light Perception	80%	III e (low vision)
Less than 3/60 to 1/60	Less than 3/60 to No Light Perception	90%	IV a (Blindness)
Or Visual field less than 10 degree around centre of fixation			
Only HDCF	Only HDCF	100%	IV b (Blindness)
Only Light Perception, No Light Perception	Only Light Perception, No Light Perception		

• For Visual acuity the line should be read completely, in case of partial line read, one line below that line should be taken for visual acuity.

Image 2



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