



A Study To Analyse The Cause Of Visual Handicap Among Certified Visually Disabled Individuals: A Hospital Based Study

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Type of Publication: Original Research Paper

Conflicts of Interest: Nil

Abstract

Introduction: To analyse the cause of visual handicap among certified visually disabled individuals in a tertiary hospital of Punjab.

Aim: To study the age, gender, percentage, cause of disability and formulate preventive the preventive measures as per the causes.

Material and Methods: a retrospective study of data analysis of applications for visual disability certification enrolled during period of one year from January 2018 to December 2019. All applications were analyzed to see the age, gender, best corrected visual acuity, diagnosis to know the cause of disability and percentage of disability as per guidelines.

Results: A total of 208 patients were included in the study, out of which 148 (71%) were males and 60 (29%) were females. Visual disturbance and blindness (ICD 10 H53-54) was the cause of visual disability in maximum no. of patients, 60 (29%) followed by disorders of choroid and retina (ICD 10H30-36)

Conclusion: On analyzing the the blindness certificates, the causes of visual handicap could be known and an idea of prevailing risk factors in the local area could be determined.

Keywords: blindness certificates, visual disability, visual impairment

Introduction

Visual impairment is a major public health problem mainly in developing countries. It limits the social, economic, educational and vocational development of a person, the society and ultimately the nation. Recent data suggests that around 12 million blind persons reside in India out of 45 million blind population in the entire world.^[1] For the rehabilitation of the visually impaired, certain benefits are provided by the government.

Certification for blindness or partial sight is the process by which social services for the visually disabled are coordinated. Registration as blind or partially sighted in India is voluntary and is

performed by certification by a duly constituted board that includes an ophthalmologist.

The ministry of social justice and empowerment, Government of India, has given the guidelines for visual disability. It should be 40% for an individual to be eligible for any concession or benefit, For this they have to apply for the visual handicap certification.^[2] The 58th round data from the NSSO survey reveals that of all the disabled individuals in India, 10.88% were blind and 4.39 % were having low vision.^[3]

Prevention of visual impairment is an international priority, and its planning requires contemporary data regarding incidence and causes based on which, the

priorities can be identified. However, under registration of the blind is a global problem.^[4,5] Only few studies in India have analyzed the applications of blindness certification to know the causes of blindness and its application in planning eye health programme to reduce the blindness. Very little data is available on this from the state of Punjab.

The objective of our study is to analyse the profile, degree of disability and the cause of visual disability amongst those applying for visual disability certification. This will aid in knowing the extent of problem and assist in developing newer strategies for prevention of visual impairment.

Aims and objectives

To study the age, gender, percentage and cause of disability. Also to formulate the preventive measures according to prevalent causes of visual disability.

Material and Methods

This was a retrospective study of data analysis of applications for visual disability certification enrolled during period of one year from January 2018 to December 2019 and approved by institutional ethics review board. All patients were carefully examined in district Patiala, Punjab, before issuing disability

certification i.e. visual acuity, tonometry, slit lamp and fundus examination was done. Special investigation like perimetry, B Scan and OCT were done whenever needed in order to make the final diagnosis and to ascertain that no further medical intervention would reduce the extent of visual impairment.

All applications were analyzed to see the age, gender, best corrected visual acuity, diagnosis to know the cause of disability and percentage of disability as per guidelines proposed by the Indian government (Visual impairment disability categories and percentages i.e. category 0-IV, 20-100%) (Table1).

Those applications with avoidable/ treatable causes of blindness like cataract, correctable refractive error, where cause of blindness could not be ascertained were excluded from the study.

The main cause of visual disability was ascertained for all applicants during the study period, as per the certification and the gradation criteria of visual disability mentioned in the gazette of India, extraordinary, part II- Sec3(ii)89 (Table 1) and tabulated as per ICD 10 for disease of eye and adnexa (H00-H59) (Table 2).

Table 1. showing the certification and gradation criteria of visual disability mentioned in the gazette of India, extraordinary, part II- Sec3(ii)89.

Better eye	Worse eye	Percentage impairment	Disability category
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%	I
	Less than 3/60 to no PL	30%	II (one eyed)
	6/24 to 6/60	40%	IIIa (low vision)
Visual field less than 40° up to 20°	Less than 6/60 to 3/60	50%	IIIb (low vision)
	Less than 3/60 to no PL	60%	IIIc (low vision)
Less than 6/60 to 3/60	Less than 6/60 to 3/60	70%	IIIId (low vision)

Visual field less than 20° up to 10°			
	Less than 3/60 to no PL	80%	IIIe (low vision)
Less than 3/60 to 1/60 Visual field less than 10°	Less than 3/60 to no PL	90%	IVa (blindness)
Only HMCF Only perception of light No light perception	Only HMCF Only perception of light No light perception	100%	IVb (blindness)

Results

A total of 208 patients were included in the study, out of which 148 (71%) were males and 60 (29%) were females. The male female ratio was 2.47. 80 (38.5%) patients had visual disability of less than 40%, while 128 (61.5%) patients had visual disability of more than 40%, 62 (30%) patients had visual disability between 91-100%, 34 (16%) patients had visual disability between 51-60% (Table 3.).

77(37%) patients were in the age group 21-40yrs,54(26%) were in age group 41-60 yrs,

51(24.5%) were in age group 0-20 yrs, 26 (12.5%) were of age 60 yrs and above (Table 4,5).

Visual disturbance and blindness (ICD 10 H53-54) was the cause of visual disability in maximum no. of patients, 60 (29%) followed by disorders of choroid and retina (ICD 10H30-36) i.e. 49 (23.5%). 29 (14%) patients had other disorders of eye and adnexa (ICD 10H55-57) while 23 (11%) patients had disorders of sclera, cornea, iris and ciliary body (ICD 10H15-22).

Table 2. showing number of persons with visual disability as per ICD 10 for disease of eye and adnexa (H00-H59)

ICD code	Disorders of the eye	No. Of persons
H00-H05	Disorders of eyelid, lacrimal system and orbit	0
H10-H11	Disorders of conjunctiva	0
H15-H22	Disorders of sclera, cornea, iris and ciliary body	23
H25-H28	Disorders of lens	5
H30-H36	Disorders of choroid and retina	49
H40-H42	Glaucoma	7
H43-H44	Disorders of vitreous body and globe	9
H46-H47	Disorders of optic nerve and visual	14

	pathways	
H49-H52	Disorders of ocular muscles, binocular movement, accommodation and refraction	11
H53-H54	Visual disturbances and blindness	60
H55-H57	Other disorders of eye and adnexa	29
H59-H59	Intraoperative and postoperative complications and disorders of eye and adnexa, not elsewhere	1
Total		208

Table 3. showing number of visually impaired persons with percentage of blindness

Percentage of visual impairment (in %)	No. of visually impaired persons
0-10	1
11-20	2
21-30	40
31-40	37
41-50	8
51-60	34
61-70	10
71-80	11
81-90	3
91-100	62
Total	208

Table 4. showing age distribution of visually impaired persons

Age group	Number of visually disabled persons (%)
0-20	51 (24.5%)
21-40	77 (37%)
41-60	54 (26%)
61-80	25 (12%)
81-100	1 (0.5%)
total	208 (100%)

Table 5. showing age distribution of causes of visual impairment as per ICD 10

	0-20 yrs	21-40 yrs	41-60 yrs	61-80 yrs	81-100 yrs
H00-H05					
H10-H11					
H15-H22	3	7	8	2	2
H25-H28	2		3		
H30-H36	14	17	13	5	
H40-H42	2	3	2		
H43-H44	2	5	2	1	
H46-H47	5	6	2	1	
H49-H52	4	4	3		
H53-H54	25	18	10	7	
H55-H57	2	10	10	7	
H59-H59			1		

Discussion

The prevalence of blindness in the community has been surveyed by many in India and worldwide in order to plan strategies to decrease the prevalence of blindness and help the affected persons in rehabilitation.^[6,7,8,9,10]

In our study we had categorized the causes of visual disability as per ICD 10 criteria. Majority of patients in our study were male, indicating a male preponderance of candidates presenting for visual disability certificates and thus indicating more prevalence of blindness in males. These results are comparable with studies by Patil B et al, Joshi RS, Nainiwal SK and Ambastha A et al.^[11,12,13,14] This may be because males usually being the earning hand in the family and more indulgence in outdoor activities as compared to females have more need of certification.

63% (156) of the patients who presented for visual disability certificate were from the age group 20-60 years indicating the need of the certification requirement probably for employment opportunities or getting a job based on physically handicap reservation. This observation is comparable with the

observations seen in studies by Patil B et al, Joshi RS, Nainiwal SK and Ambastha A et al.^[11,12,13,14]

128 (61.5%) patients who presented for certification were having a disability between 41-100%. This may suggested that awareness or the guidance given by health workers at the primary/secondary health care level about the issuance of certificate for visual disability of above 40%. Among all the patients presented for visual disability certification 60 (29%) patients had visual disturbances and blindness (ICD 10H53-54) of which 25(42%) patients were in age group 0-20yrs, 49 (23.5%) patients had disorders of choroid and retina (ICD 10 H30-36) which were almost equally distributed among all age groups less than 60 yrs. 29 (14%) patients had other disorders of eye and adnexa (ICD 10 H55-57) out of which 20(69%) were in the age group of 20-60 yrs, while 23 (11%) patients had disorders of sclera, cornea, iris and ciliary body (ICD 10 H15-22) out of which 15(65%) were in the age group 21-60yrs.

The Refractive errors were found to be the leading cause of visual disability, followed by nystagmus and pthisis bulbi. Retinitis Pigmentosa and congenital causes were the other leading causes of visual disability in patients who presented for certification.

Most common causes of certification (with disability > 40%) were

ICD 10 H 53-54 (visual disturbances and blindness), followed by ICD 10 H30-36 (disorders of choroid and retina), ICD 10 H55-57 (disorders of eye and adnexa) and the disorders of sclera, iris and ciliary body (ICD 10 H15-22). Majority of patients of visual disability were due to refractive errors resulting in amblyopia and nystagmus. Many had their visual disability percentage between 20-40% making them ineligible for government benefits as more than 40% visual disability is required for the same. Successful school health screening programme is important to tackle this problem of preventable visual disability. More Pediatric ophthalmology clinics and outreach programme need to be created in order to combat amblyopia. School teachers, community health workers and ASHA's should be trained in screening the children with refractory errors and timely refer them to ophthalmic clinics.

Disorders of the cornea and sclera were mostly found in working age group of 20-40 yrs. To prevent this industrial workers need to be educated to wear safety masks/ goggles. The agricultural workers should be asked to report through the health workers for any eye injuries at the earliest and get treated from the ophthalmologists instead of seeking treatment from inappropriate or under qualified person, resulting in the delay in treatment and unfavourable outcome and disability.

Conclusion

On analyzing the the blindness certificates, the causes of visual handicap could be known and an idea of prevailing risk factors in the local area could be determined. Through the disease codes, used in methodology and research blindness registers from different institutes/ districts/ states, can be easily compared through population based research. This further helps to plan the screening programs for causes of blindness in order to improve the visual health of the community as well as in decrease the financial burden on the government.

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Legends for the tables

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