

Original Research Article

Visual disability certification: A boon for the specially abled

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ABSTRACT

Background: Visual disability has deep emotional, social and economic impact. Rehabilitation of these individuals needs multidisciplinary approach to provide timely and complete support and improve the quality of life of the individual. Visual disability certification can be recognized as a mean by which social services of visually disabled can be coordinated. Objective was to analyze the demographics, causes and degree of visual disability and reasons of seeking disability certificate amongst visually disabled individuals attending ophthalmology OPD at a Tertiary Care Centre in India.

Methods: A cross sectional study of patients seeking visual disability certificate was undertaken on 350 patients (567 eyes). Data were collected using pre set proforma. Cause of blindness was ascertained by complete ophthalmic examination and visually disability certificate was issued according to guidelines provided by Government of India.

Results: Male female ratio was 1.9:1. Most of patients were from rural side, illiterate and unemployed. Most common age group was 16-30 years and financial and transport assistance was common reason for which certificate was sought. Corneal opacity was most common cause of blindness and visual impairment.

Conclusions: Taking necessary preventive measures with the leading causes being identified can reduce the burden of visual impairment. On one hand increase in ophthalmic care and public education is needed to minimize the avoidable blindness rates ;on other hand strategies should be made to rehabilitate the individuals suffering from the unavoidable blindness. Benefits provided via visual disability certificate can play a pivotal role in rehabilitation of such patients.

Keywords: Blindness, Visual disability certification, Visual impairment

INTRODUCTION

Visual disability is one of the most handicapping disabilities. It leads to functional impairment of individual, limiting and restricting everyday activities, autonomy and quality of life. It also has bears emotional, social and economic impact on individual and its family. Rehabilitation of these individuals needs multidisciplinary approach to provide timely and complete support and improve the quality of life. Visual disability certification can be recognized as a mean by

which social services of visually disabled can be coordinated.

Certification of visually disabled in India is categorized based on its severity and is performed by a constituted board that includes ophthalmologists. About 80% of blindness is potentially preventable.¹

Only few studies in India have analyzed blindness certificates to know causes of blindness and visual handicap.^{2,3} Efforts should be made to collect the data of the causes of blindness and strategies are required to

prevent the blindness and rehabilitate visually impaired when cannot be treated.

The current study was undertaken with the objective of analyzing the demographics, causes and degree of visual disability and reasons of seeking disability certificate amongst visually disabled individuals attending ophthalmology OPD at a Tertiary care centre in India.

METHODS

This was a hospital based cross-sectional study and approved by the institutional Review Board and was performed in accordance with the tenets of the Helsinki declaration for research involving human subjects. Informed Consent was taken from all the participants before enrollment to this study.

It includes both rural and urban subjects who came voluntarily for visual disability certification at Ophthalmology department of Sardar Patel Medical College, PBM and associated group of Hospitals, which is tertiary eye Centre in Rajasthan, India.

Time frame was of one year from October 2017 to October 2018. Demographic information, history and reason for seeking disability certificate were collected by questionnaire. All subjects underwent a comprehensive ophthalmic examination.

The ophthalmic examination consisted of recording of visual acuity using Snellens chart, slit lamp examination, tonometry, gonioscopy and fundus examination with direct and indirect ophthalmoscopy using +20D lens. Landolt,s C chart was used for those who could not read English.

Subjective refraction was performed. If visual acuity could not be measured, we used following test sequentially: counting finger, hand movements and light perception (PL). Relevant investigation like visual field analysis, ultrasonography and magnetic resonance imaging if needed were done.

After completion of examination, the diagnosis was recorded using International classification of diseases-9. If more than one diseases was present, the diseases that was most likely to have a significant effect on vision was considered as the cause for visual disability.

Patients with curable cause of visual impairment were excluded from the study. Percentage for disability was allotted according to guidelines given by government of India.^{4,5}

Statistical analysis was carried out using SPSS. Significance was assessed at the p value <0.005 levels for all parameter. Univariate analysis for gender, literacy and occupation, regions was carried out using chi-square test and comparison between two groups done by t-test.

Table 1: Categories of visual disability. (classification currently in use).

Category	Better Eye (BCVA)	Worse eye (BCVA)	% Impairment
0	6/9-6/18	6/24-6/36	20
1	6/18 to 6/36	6/60 to PL	40
2	6/60-4/60 or field of vision 10-20 degree	3/60-no PL	75
3	3/60-1/60 or field of vision <10 degree	FC at 1 feet - no PL	100
4	FC at 1 feet- nil or field of vision <10 degree	FC at 1 feet - no PL	100
One eyed	6/6	FC at 1 feet no PL or field of vision 10 degree	30

RESULTS

Out of total 350 patients examined, 229 (65.43%) were males and 121 (34.57%) were females. There is male preponderance in the study with the sex ratio 1.9:1.

Table 2: Effect of age, gender, residence, and occupation on blindness.

Variables	No. of patients	Percentage
Age (in years)		
0-15	68	19.43
16-30	110	31.43
31-45	69	19.71
46-60	72	20.57
61-75	31	8.86
Gender		
Male	229	65.43
Female	121	34.57
Residence		
Rural	212	60.57
Urban	138	39.43
Occupation		
Unemployed	152	43.43
Employed	198	46.57

Mean age of study population was 33.31±18.46. The majority, that is 212 (60.57%) patients were from rural areas and 138(39.43%) were from urban area.

We classified study population on the basis of occupation. It was also observed that significant numbers of patients 152 (43.43%) were unemployed due to visual disability and 91(26%) were student and 49 (14%) were housewife

and remaining 58 (17%) had occupation of different types like farming, teaching, government jobs, pensioner, and self-employed (Table 3).

Table 3: Various causes of Visual disability (n=567).

Causes of visual disability	Number of Eyes (n=567)	Percentage (%)
Congenital	130	22.92
Cornea	181	31.92
Glaucoma	78	13.75
Refractive error	23	4.06
Retinal disorder	64	11.28
Phthisic	35	6.17
Neurological	43	7.58
Multiple causes	13	2.29

Various causes of visual disability are depicted in Table 3. Five hundred and sixty seven eyes of 350 patients who participated in this study, 130 eyes (22.99%) had congenital causes (graph 1) and 467 eyes (77.07%) had acquired causes (p value=0.0001) of visual impairment (Figure 2).

Most common cause of acquired blindness was corneal opacity. Among the patients with corneal opacity 91 eyes (20.82%) had corneal opacity following trauma, 64 eyes (14.62%) had corneal opacity following ulcerative

keratitis, nine eyes (2%) due to trachoma, five eyes (1.14%) due to chemical injury, six eyes (1.37%) due to effect of small pox infection on eyes, four eyes (0.9%) due to corneal dystrophy and two eyes (0.455) had pseudophakic bullous keratopathy with PL absent. (Figure 3).

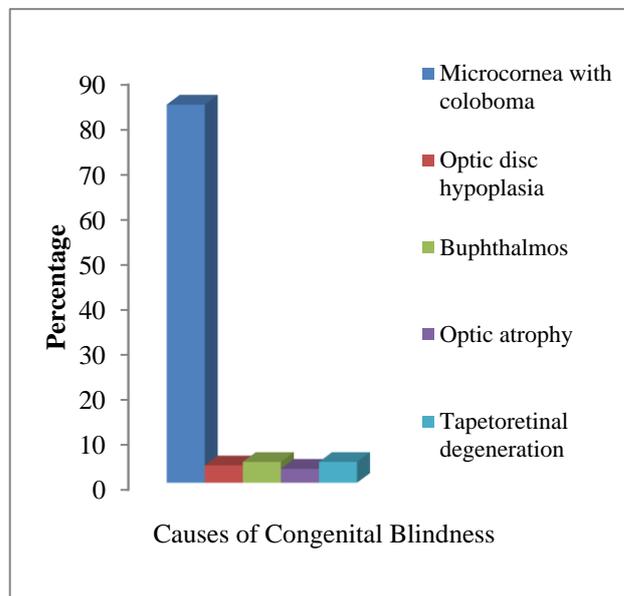


Figure 1: Causes of congenital blindness.

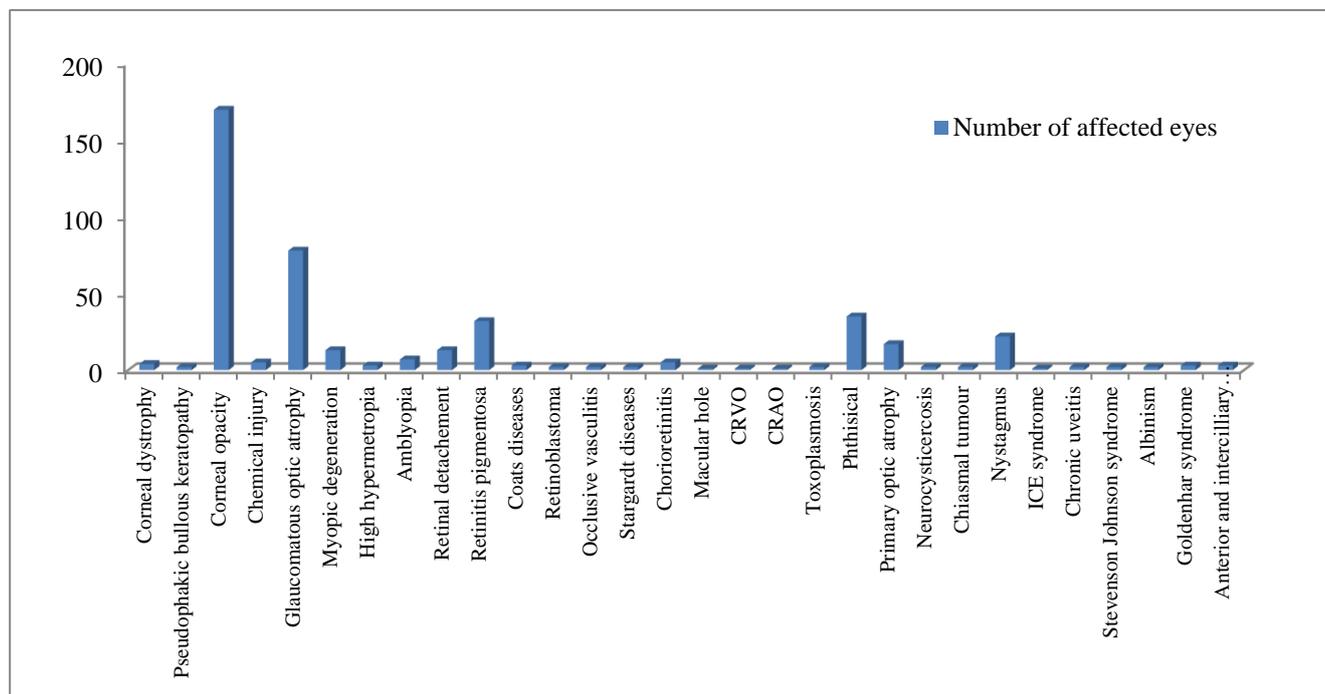


Figure 2: Causes of acquired blindness.

Of these, 417 eyes (73.54%) had avoidable causes and remaining 150 (26.46%) had unavoidable causes. Visual disability certificates were issued according to guidelines given by government of India. According to this 163 patients (46.57%) received 100% visual disability

certificate and 29 (8.83%) received 75% and 118 (33.71%) received 40% and 40 (11.43%) received 30% visual disability certificate (Table-3) and in this study main cause of seeking certificate was for financial and transport benefits (Figure 4).

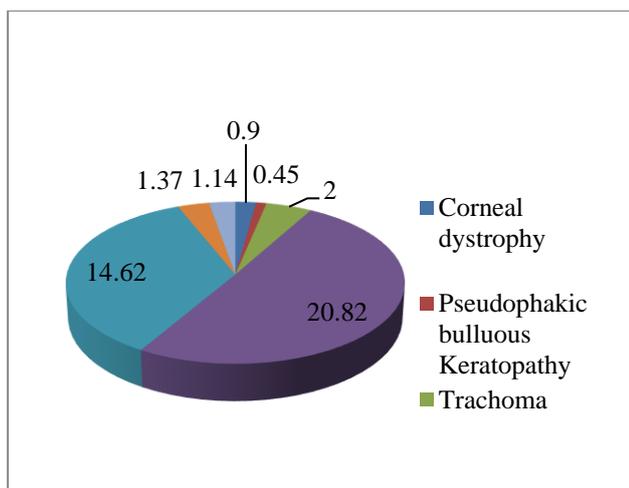


Figure 3: Causes of Corneal blindness.

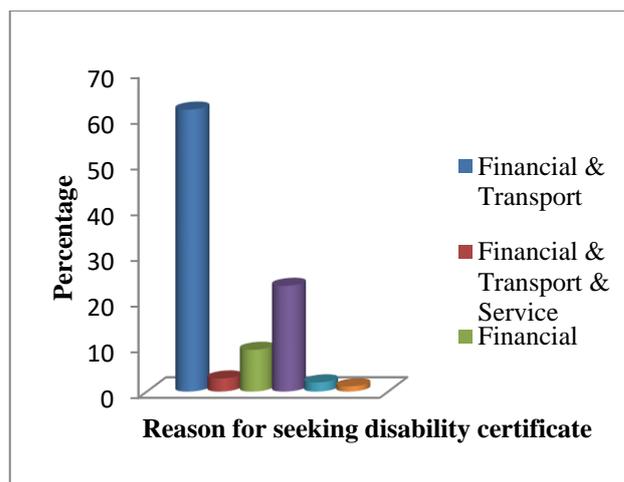


Figure 4: Distribution of cases according to reason for seeking visual disability certificates.

Table 4: Distribution of cases according to category of visual disability

Age group (in years)	100% disability		75% disability		40% disability		30% disability	
	Male	Female	Male	Female	Male	Female	Male	Female
0-15	25	11	4	2	13	8	3	2
16-30	22	7	5	4	33	19	13	7
31-45	19	13	4	1	11	10	6	5
46-60	29	12	3	3	15	6	4	0
61-75	14	11	3	0	3	0	0	0
Total	109	54	19	10	75	43	26	14
χ^2	3.587		3.081		3.439		2.737	
P value	0.465		0.544		0.487		0.590	

DISCUSSION

In our study majority of persons who registered for visually disability certification were from 16-30 years of age group followed by 46-60 years of age group. This suggests that young person of age group of 16-30 years seek visually disability certificate more often. The certification is sought for educational, employment and conveyance benefits that are more likely to serve their purpose. The elderly individuals sought for financial and transport benefits because of dependency as suggested by Siddegowda et al.⁶ Gender differences in the prevalence of blindness in the Indian population were reported earlier.^{7,8}

We also found such difference in gender. This could be attributed to the fact that Certification system is institution based and females may not be able to access it due to social obstacles, low literacy among females, dependency and prevalence of social discrimination. We reported majority of patients came from rural area (60.57%).

This rural and urban difference in blindness rates clearly suggests that probably the urban population has better access to ophthalmic care. The reported prevalence of

blindness using the WHO definition in an urban population aged 40 and above was 0.2% (95% CI 0.1–1.0%) in Beijing and 0.14% (95% CI 0.06–0.32%) in Tajami.^{9,10}

It appears from these reports that our urban population blindness rate is higher than the urban blindness rates in other Asian countries. This could probably be due to the differences in socioeconomic conditions, health care practices, and access to vision care. Like the nation-wide survey that suggested that unemployed people were likely to have higher rates of blindness, we also notice higher prevalence of unemployment among blind people that is 49.71%. These differences amongst gender, region can be addressed by implementing ICE strategy (Information, Education and Communication). Interpersonal communication can be the most effective method for motivation of target population.

The causes of blindness vary across the world. There are a number of studies suggesting that the leading cause of blindness in the White population is age-related macular degeneration.¹¹⁻¹³ Cataract seems to be the leading cause of blindness in Africa and in developing countries.^{7,14-20} In India, cataract has been documented to be the cause of bilateral blindness in 50–80% of blind people.^{7,19-20}

Our study we excluded treatable causes like cataract hence most common cause of blindness and severe visual impairment was corneal opacity, followed by glaucoma. Among corneal opacity, 20.82% developed due to trauma and 14.62% due to infectious keratitis. Eye care programs and strategies targeting high-risk ocular trauma groups especially younger age groups need to be developed in our country in order to reduce blindness due to trauma and educating them about importance of using safety appliance during working to prevent occupational exposure.

Major precipitating factor of ulcerative keratitis is trauma with vegetative matter while working in fields and application of traditional medicine in eyes that is more common in rural set up and illiterate people. The high rates of blindness due to glaucoma in India can be explained partially by the large proportion of undiagnosed disease in the population. In population-based studies across the country, more than 90% of glaucoma patients were diagnosed during the study examination.²¹

The causes for poor detection rates were overdependence on intraocular pressure measurements to diagnose glaucoma and the lack of a comprehensive eye examination by eye care professionals. Unless we improve our ability to diagnose glaucoma in the country, glaucoma detection rates cannot be improved. The public too should be educated about the importance of undergoing a comprehensive eye examination.

In our study we noticed that visually disabled of younger age group came forward for the certification process so that they can avail benefits provided to them in the form of financial assistance, concessions in various fields, education, transport and reservation in jobs too. Hence this certificate can be seen as part of rehabilitation of those who are permanently visually impaired. Data from applicants seeking visual disability certificate can be of immense use for the government for prevention of blindness and rehabilitation of already suffering.

CONCLUSION

Most of the patients who sought disability certificate were totally blind. The leading cause for visual impairment was corneal opacity. 73.54% patients suffered from visual impairment caused by potentially preventable conditions.

On one hand increase in ophthalmic care and public education is needed to minimize the avoidable blindness rates; on other hand strategies should be made to rehabilitate the individuals suffering from the unavoidable blindness. Similar studies should be undertaken at different geographical settings, as data collected may be useful to the governmental agencies to plan the strategies for rehabilitation and prevention of blindness.

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