

STUDY OF PATTERN OF VISUAL IMPAIRMENT IN PATIENTS SEEKING VISUAL DISABILITY CERTIFICATE

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ABSTRACT

PURPOSE

To determine the severity and various causes of visual impairment in patients seeking visual disability certificate.

METHODS

Cross-sectional study of patients seeking visual disability certificate from November 2014 to April 2015 was done. Severity of visual impairment was calculated as per the guidelines of Ministry of Social Justice and Empowerment 1999. Cause was ascertained after detailed examination which included slit-lamp examination, direct ophthalmoscopy, indirect ophthalmoscopy, slit-lamp biomicroscopy with 78D lens, Humphrey visual field analysis wherever necessary.

RESULTS

Of the 267 patients, category 0-7 (2.62%), category 1-37 (13.85%), category 2-42 (15.73%), category 3-157(58.80%), one eyed-24 (8.98%). Male preponderance was seen (56.55%). The causes were congenital malformations-78 (29.21%), retinitis pigmentosa-71 (26.59%), refractive errors with amblyopia-52 (19.47%), corneal opacity related to trauma and infectious keratitis 22(8.23%), glaucoma-14 (5.24%), phthisis bulbi-9 (3.37%), ARMD-3 (1.12%), miscellaneous-9 (3.37%). The causes were preventable in 41.19%.

CONCLUSION

Most of the patients who sought disability certificate were totally blind. The leading causes for visual impairment were congenital malformations, retinitis pigmentosa and refractive errors with amblyopia. 41.19% patients suffered from visual impairment caused by potentially preventable conditions. The burden of visual impairment can be reduced by taking necessary preventive measures with the leading causes being identified.

KEYWORDS

Visual Disability Certificate, Congenital Malformations.

HOW TO CITE THIS ARTICLE: Hegde SS. Study of pattern of visual impairment in patients seeking visual disability certificate. J. Evolution Med. Dent. Sci. 2016;5(36):2111-2113, DOI: 10.14260/jemds/2016/495.

INTRODUCTION

Blindness is a devastating physical condition with deep emotional and economic implications. The consequences affect not only the individual but also the family and the community.^{1,2} According to WHO 180 million people worldwide are visually disabled of whom nearly 45 million are blind. Of the estimated 45 million, India alone has 8.9 million blind people, which comes to about one fifth of the total in the world. The problem of blindness in India is not only of its gigantic size, but also of its causes, which are largely preventable. About 80% of blindness is potentially preventable.^{1,3}

The current study is undertaken to study, ascertain the cause of visual impairment and to identify the leading causes of preventable blindness among the patients seeking visual disability certificate. The prevention of blindness is an international priority and its planning requires contemporary data regarding its incidence and causes, based on which priorities for its prevention, treatment and management can be identified.

Meagre available data and increasing magnitude of blindness warrants this study.

MATERIALS AND METHODS

Cross-sectional study of patients seeking visual disability certificate from November 2014 to April 2015 was done. Data was collected using pre-structured pretested proforma. Sociodemographic profile including the educational status and occupation was obtained. Cause of blindness was ascertained after detailed examination which included slit-lamp examination, direct ophthalmoscopy, indirect ophthalmoscopy, slit-lamp biomicroscopy with 78D lens, applanation tonometry, Humphrey visual field analysis wherever necessary and feasible. Severity of visual impairment was calculated as per the guidelines of Ministry of Social Justice and Empowerment 1999.⁴

Category	Best Corrected Visual Acuity in the Better Eye	Best Corrected Visual Acuity in the Worst Eye	Percentage of Visual Disability
0	6/9-6/18	6/24-6/36	20%
I	6/18-6/36	6/60 to Nil	40%
II	6/40-4/60 or field of vision 10° -20°	3/60 to nil	75%
III	3/60 to 1/60 or field of vision 10°	F.C. at 1 ft. to Nil	100%
IV	F. C. at 1 ft. to Nil or field of vision 10°	F.C. at 1 ft. to Nil	100%
One eyed persons	6/6	F.C. at 1 ft. to Nil or field of vision 10°	30%

Financial or Other, Competing Interest: None.

Submission 08-03-2016, Peer Review 14-04-2016,

Acceptance 20-04-2016, Published 04-05-2016.

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DOI: 10.14260/jemds/2016/495

Statistical analysis was done by using Epi-info software. The variables of interest were age, gender, occupation, percentage of disability and the cause of visual disability.

RESULTS

Of the 267 patients, 56.55% (151) were males and 43.45% (116) were females with M:F ratio being 1.3:1.

Visual disability of 100% was noted in 58.80% (157). 15.73% (42) had 75% visual disability, 13.85% (37) had 45% visual disability, 2.62% (7) had 20% visual disability. 8.98% (24) of the patients were one eyed with visual disability of 30%. (Table-1)

Most of the patients, 38.57% (103) were in the age group of <20 years, followed by 21-40 years group with 35.58% (95). 14.6% (39) were in age group of 41-65 years and 11.2% (30) were above 65 years. (Table-2)

Majority 85.76% (229) were unemployed, 10.48% (28) were students, 3.74% (10) were self-employed.

The causes were congenital malformations-78 (29.21%), retinitis pigmentosa-71(26.59%), refractive errors with amblyopia-52(19.47%), corneal opacity related to trauma and infectious keratitis 22(8.23%), glaucoma-14 (5.24%), phthisis bulbi-9 (3.37%), ARMD-3 (1.12%), miscellaneous-9 (3.37%). The causes were preventable in 41.19%. (Table-3)

Amount of Visual Disability	Number of Visually Disabled
20%	7(2.62%)
40%	37(13.85%)
75%	42(15.73%)
100%	157(58.8%)
30%(One eyed)	24(8.98%)

Table 1: Number of Visually Disabled in Each Category

Age (years)	Number of Visually Disabled
<20	103(38.57%)
21-40	95(35.58%)
41-65	39(14.6%)
>65	30(11.2%)

Table 2: Age Distribution

Causative Factor	Number of Visually Disabled
Congenital malformations	78(29.21%)
Retinitis pigmentosa	71(26.59%)
Refractive errors with amblyopia	52(19.47%)
Corneal opacity related to trauma & infectious keratitis	22(8.23%)
Glaucoma	14(5.24%)
Phthisis bulbi	9(3.37%)
ARMD	3(1.12%)
Miscellaneous	9(3.37%)

Table 3: Causes of Visual Disability

DISCUSSION

The impact of visual loss on the personal, economic, and social life of an individual is profound, and when the prevalence of blindness in communities is high like in India, the consequences become a significant public issue.^{2,5}Data collected in this study may be useful to the governmental agencies to plan the strategies for rehabilitation and prevention of blindness. Several observations of our study conform to those of previous studies at different geographical settings.

In our study, male preponderance was seen. 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. This finding is in accordance with the findings of the study conducted by Kareemsab et al.,⁶ Joshi et al.⁷ and Gosh et al.⁸ However, in the 58th round of the NSSO survey⁹, nearly 54% of the total visual impaired individuals were females and the remaining 46% were males, depicting a female gender bias.

In our study, young patients were in a significant majority compared to the elderly. Most of the patients were in the age group of <20 years and in 21-40 years age group. This suggests that certification is sought for educational, employment and conveyance benefits which are more likely to serve the purpose of young individual than the elderly. Study by Gosh et al.⁸ also showed similar results.

Unemployment in our study was consistent with the findings of the NSSO survey,⁹ which observed that 80% of the blind individuals in the rural areas are without any source of income. Similar findings were noted in study by Gosh et al.⁸

In this study, patients with 100% disability formed the majority group. A similar finding was noted by Kareemsab et al.,⁶ Gosh et al.⁸ and Bunce et al.¹⁰

Congenital malformations was the leading cause for visual disability in our study followed by retinitis pigmentosa and refractive errors. This is similar to the findings of the study by Kareemsab et al.,⁶ Ghosh et al.⁹

The causes were preventable in 41.19% of the patients. With better health education, eye care and compulsory periodic school eye screening their incidence can be reduced. Limitation of the study is that the exact prevalence of visual disability cannot be obtained as the registration is voluntary. Another limitation was that the rates could not be calculated as we had no specific population denominator as this was a hospital based survey, and we depended only on the number of cases. Since it is not a community based survey, it may not give the true reflection of the distribution of various causes of visual disability.

CONCLUSION

Given the current predictions that the number of blind people worldwide will roughly double by the year 2020, it is clear that there is no room for complacency. This study certainly gives an idea about the most prevalent causes for visual disability and hence helps to plan preventive measures.

Congenital ocular malformations dominated as the main cause for obtaining visual handicap certificate, followed by retinitis pigmentosa and refractive errors with amblyopia. It is estimated that 41.19% suffer from visual impairment caused by potentially preventable conditions. The burden of visual impairment can be reduced by taking necessary preventive measures with the leading causes being identified. Similar studies can be conducted in other parts of the country to identify the prevalent causes for visual impairment and blindness. Such studies will also help in finding the geographical differences in the causes of visual handicap.

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