

CAUSES OF VISUAL DISABILITY IN PATIENTS WITH VISUAL DISABILITY CERTIFICATES OBTAINED IN A TERTIARY CARE HOSPITAL IN MUMBAI

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ABSTRACT

BACKGROUND

Visual disability is a major public health problem in developing countries. Ocular diseases cause partial or total blindness. Causes can be treatable or non-treatable. Non-treatable causes lead to permanent visual disability. Persons with disabilities are given certificates mentioning percentage of disability after they demand certificates for various benefits.

MATERIALS AND METHODS

Records of the individuals who had been issued visual disability certificates during the period of 1st March 2011 to 30th June 2013 were obtained from Medical Records Office of the hospital and the information was analysed.

RESULTS

Out of 132 individuals with visual disability certificates, 97 were males and 35 were females. Avoidable causes of visual impairment were found in 43.18% individuals who were with corneal opacity, diabetic retinopathy, glaucoma, traumatic retinal detachment and postoperative retinal detachment. Unavoidable causes were found in 56.82% individuals who were with congenital diseases, optic nerve atrophy, hereditary causes, retinitis pigmentosa and age-related macular degeneration. Maximum numbers of individuals were issued certificates of 40% visual disability and least being 20% visual disability. Maximum number of individuals (48.49%) demanded disability certificates for benefit in jobs.

CONCLUSION

High number of congenital diseases of eye explains the need of genetic counselling. Gender-based inequality for getting visual disability certificates should be minimised through awareness and education of people. Avoiding trauma to eyes can reduce the visual disability due to corneal scarring and infections in large extent. Early diagnosis and treatment is necessary to prevent blindness from avoidable causes like diabetic retinopathy, glaucoma and retinopathy of prematurity.

KEYWORDS

Disability, Disability Certificates, Congenital Diseases, Blindness.

HOW TO CITE THIS ARTICLE: Kamat VV, Shinde CA. Causes of visual disability in patients with visual disability certificates obtained in a tertiary care hospital in Mumbai. J. Evid. Based Med. Healthc. 2016; 3(98), 5381-5385. DOI: 10.18410/jebmh/2016/1118

BACKGROUND

Visual disability is a major public health problem in India. Survey in 2006-07 estimated prevalence of blindness to be 1%.¹ Ocular diseases cause partial or total blindness. Causes maybe treatable or non-treatable. Non-treatable causes lead to permanent visual disability. Persons with disabilities are given certificates mentioning percentage of disability after they demand certificates.² The visual disability certificates are given according to the guidelines given by Ministry of Social Justice and Empowerment, Government of India.²

*Financial or Other, Competing Interest: None.
Submission 17-11-2016, Peer Review 24-11-2016,
Acceptance 07-12-2016, Published 08-12-2016.*

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DOI: 10.18410/jebmh/2016/1118



These certificates maybe used for various purposes and benefits of the disabled.

AIMS AND OBJECTIVES

1. To note the findings of ophthalmic evaluation of individuals like vision, external, slit-lamp and fundus findings.
2. To record the diagnosis.
3. To tabulate the causes of blindness and low vision as per aetiology.
4. To study and analyse the causes leading to visual disability in individuals attending a tertiary care hospital in Mumbai based on the records of visual disability certificates issued by the hospital.

MATERIALS AND METHODS

Medical records office of the hospital was contacted and then we retrieved the data of the individuals who had received visual disability certificates during the period of 1st March 2011 to 30th June 2013, retrospectively. The visual disability

certificates were screened and diagnoses were noted in tabular format.

Inclusion Criteria

Records of all the persons who had got 20%, 30%, 40%, 75% and 100% visual disability certificates were included in the study.

Exclusion Criteria

The certificates in which the written matter was not clearly legible and were creating confusion were excluded.

The causes mentioned in the certificates with number of persons were fed under headings like congenital disease, corneal opacity, optic atrophy, hereditary diseases, retinitis pigmentosa, diabetic retinopathy, glaucoma, traumatic retinal detachment, age-related macular degeneration, postoperative retinal detachment, Steven Johnson syndrome, retinopathy of prematurity in tables accurately. The data was analysed for causes of visual morbidity, number of persons with percentage of disability and purpose

of certificates demanded for getting various benefits and various age groups using tables.

RESULTS

Total number of individuals with visual disability certificates included in the study was 132. Out of the 132 individuals, 97 were found to be males and 35 females. Avoidable causes of visual impairment were found in 43.18% individuals who were with corneal opacity 14.40%, diabetic retinopathy 8.33%, glaucoma 7.58%, traumatic retinal detachment 7.58% and postoperative retinal detachment 2.28%. Unavoidable causes were found in 56.82% individuals who were with congenital diseases topping the list with 21.21%, followed by optic nerve atrophy 12.12%, hereditary causes 10.61%, retinitis pigmentosa 8.33% and age-related macular degeneration 4.55%. Congenital diseases included microphthalmia, anophthalmos and retinochoroidal coloboma. These individuals had associated findings like entropion, ectropion, megalocornea, ptosis of lid, zonular cataract, blepharophimosis and nystagmus.

The causes with gender wise prevalence of obtaining certificates are explained in Table-1.

Sl. No.	Causes	Number of Males (%)	Number of Females (%)	Total Number of Individuals (%)
1.	Congenital disease	21 (15.91%)	7 (5.30%)	28 (21.21%)
2.	Corneal opacity	14 (10.61%)	5 (3.79%)	19 (14.40%)
3.	Optic atrophy	11 (8.33%)	5 (3.79%)	16 (12.12%)
4.	Hereditary disease	9 (6.82%)	5 (3.79%)	14 (10.61%)
5.	Retinitis pigmentosa	8 (6.06%)	3 (2.27%)	11 (8.33%)
6.	Diabetic retinopathy	8 (6.06%)	3 (2.28%)	11 (8.33%)
7.	Glaucoma	8 (6.06%)	2 (1.52%)	10 (7.58%)
8.	Traumatic retinal detachment	8 (6.06%)	2 (1.52%)	10 (7.58%)
9.	Age-related macular degeneration	4 (3.03%)	2 (1.52%)	6 (4.55%)
10.	Postoperative retinal detachment	2 (1.52%)	1 (0.76%)	3 (2.28%)
11.	Steven-Johnson syndrome	2 (1.52%)	1 (0.76%)	3 (2.28%)
12.	Retinopathy of prematurity	0	1 (0.76%)	1 (0.76%)
Total Number of Individuals		95 (71.97%)	37 (28.03%)	132 (100%)

Table 1. Various Causes of Visual Disability with Gender Wise Prevalence

The persons getting 100% of visual disability certificates from categories III and IV² were 28.03%. Maximum number of individuals (37.12%) from category I² with best corrected visual acuity in better eye being 6/18 to 6/36 and 6/60 to nil in worse eye was issued certificates of 40% visual disability. Least being 5.30% of persons with 20% of visual disability certificates who were from category 0² with 6/9 to 6/18 best corrected visual acuity in better eye. Number of persons with percentages of visual disabilities is noted in Table 2.

Percentage of Disability	Number of Males (%)	Number of Females (%)	Number of Persons (%)
100%	25 (18.94%)	12 (9.09%)	37 (28.03%)
75%	8 (6.06%)	5 (3.79%)	13 (9.85%)
40%	38 (28.79%)	11 (8.33%)	49 (37.12%)
30%	21 (15.91%)	5 (3.79%)	26 (19.70%)
20%	5 (3.79%)	2 (1.52%)	7 (5.30%)
	97 (73.48%)	35 (26.52%)	Total 132 (100%)

Table 2. Number of Persons with Percentage of Disability

Maximum number of individuals (48.49%) demanded disability certificates for benefit in jobs. These were mostly from age group of 21 to 30 years. Students from age group of 11 to 20 years and 21 to 30 demanded it for education purpose. Persons over 31 years of age were less in number (12.88%) for obtaining visual disability certificates. Few individuals (9.85%) demanded the disability certificates, but they could not answer why they wanted the certificates and where they wanted to use them. The purpose of getting certificates with number of individuals and age-group wise distribution of individuals is as per Table 3 and Table 4, respectively.

Purpose	Number of Individuals (%)
Benefit in jobs	64 (48.49%)
Education purpose	45 (34.09%)
Travel benefit	8 (6.06%)
Income tax or financial purpose	2 (1.52%)
Could not tell the reasons	13 (9.85%)

Table 3. Purpose for Obtaining Visual Disability Certificates

Age Group (In Years)	Number of Individuals (%)
0-10	8 (6.06%)
11-20	45 (34.09%)
21-30	62 (46.97%)
31-40	2 (1.52%)
41-50	5 (3.79%)
51-60	7 (5.30%)
Above 60	3 (2.27%)

Table 4. Age Wise Distribution of the Study Subjects

DISCUSSION

Visual disability includes blindness and low vision. Blindness refers to a condition where a person suffers from any of the following-

1. Total absence of sight; or
2. Visual acuity not exceeding 6/60 or 20/200 (Snellen’s chart) in the better eye with best correcting lenses; or
3. Limitation of the field of vision subtending an angle of 20 degrees or worse.

Person with low vision means a person with impairment of vision of less than 6/18 to 6/60 with best correction in the better eye or impairment of field in any one of the following categories-

1. Reduction of fields less than 50 degrees;
2. Hemianopia with macular involvement;
3. Altitudinal defect involving lower fields.^{2,3}

According to National Programme for Control of Blindness (NPCB), the main causes of blindness are cataract (62.6%), refractive errors (19.70%), corneal blindness (0.90%), glaucoma (5.80%), surgical complications (1.20%), posterior capsular opacification (0.90%), posterior

segment disorders (4.70%) and others (4.19%). Estimated national prevalence of childhood blindness/low vision is 0.80 per thousand.¹

Globally, 285 million people are visually impaired (246 million have low vision and 39 million are blind).⁴ Visual impairment is unequally distributed across age groups. More than 82% of all people who are blind are 50 years of age and older, although they represent only 19% of the world’s population. Due to the expected number of years lived in blindness (blind years), childhood blindness remains a significant problem with an estimated 1.4 million blind children below age 15 years. Available studies consistently indicate that in every region of the world, and at all ages, females have a significantly higher risk of being visually impaired than males.⁵

Age-related macular degeneration is an important cause of visual impairment as per World Health Organization (WHO). Causes of avoidable blindness are glaucoma, corneal opacities, diabetic retinopathy, childhood blindness, trachoma and onchocerciasis.⁴

Corneal opacities due to trauma and infections can lead to ulceration and scarring.

Optic nerve atrophy is developmental or secondary to trauma, vascular disturbances and metabolic diseases like diabetes mellitus, glaucoma or toxicity (due to alcohol, tobacco or other poisons).

Categories of visual disability with best corrected visual acuity in better eye and worse eye are shown in Table 5.²

Category	Better Eye	Worse Eye	% Age Impairment
Category 0	6/9-6/18	6/24 to 6/36	20%
Category I	6/18-6/36	6/60 to nil	40%
Category II	6/60-4/60 or field of vision 10°-20°	3/60 to nil	75%
Category III	3/60 to 1/60 or field of vision 10°	F.C. at 1 ft. to nil	100%
Category IV	F.C. at 1 ft. to Nil or field of vision 10°	F.C. at 1 ft. to nil	100%
One eyed Person	6/6	F.C. at 1 ft. to nil or field of vision 10°	30%

Table 5. Categories of Visual Disability (All with Correction)

(Note- F.C. means finger count)

WHO and NPCB have different definitions of visual disability considering best corrected visual acuity in better

eye. Comparison of WHO and NPCB definitions of visual impairment and blindness is given in Table 6.⁶

WHO-ICD Classification of Visual Impairment and Blindness	Visual Acuity	NPCB Categorisation of Visual Impairment and Blindness
Moderate visual impairment Category I	<6/18-6/60 in better eye	Low vision
Severe visual impairment Category II	<6/60-3/60 in better eye	Economic blindness
Category III	<3/60-1/60 in better eye	Social blindness
Category IV	<1/60 in better eye	Manifest blindness
Category V	No perception of light in better eye	Absolute blindness

Table 6. WHO and NPCB Definitions of Visual Impairment and Blindness

Disability certification is a type of rehabilitation of the disabled persons. Rehabilitation refers to a process aimed at enabling persons with disabilities to reach and maintain their optimal physical, sensory, intellectual, psychiatric or social functional levels.³

Institution-based approach is involved in medical model to rehabilitate disabled. Community-based approach is important for early identification and intervention in rehabilitation of disabled.^{7,8}

The Persons with Disabilities Act (1995) has given guidelines about "special employment exchange" to help persons with disabilities seeking employment. There are provisions to help the children with disabilities by providing access to free education in appropriate environment till they attend age of 18 years. Also, there are suggestions to promote setting up of special schools in government and private sectors for those in need of special education.

Department of Empowerment of Persons with Disabilities (Divyangjan) has been implementing scholarship schemes for the empowerment of students with disabilities through education.⁹

Prevalence of blindness in the community can be known by studying few surveys done in India¹⁰⁻¹² and outside India^{13,14} for the evidence-based information.

CONCLUSION

In the study, we found that the maximum numbers of individuals getting visual disability certificates are with congenital eye diseases like microphthalmia, anophthalmos and retinoblastoma. These individuals had associated findings like entropion, ectropion, megalocornea, ptosis of lid, zonular cataract, blepharophimosis and nystagmus. Congenital diseases necessitate the need of genetic counselling. Avoiding trauma to eyes can reduce the

visual disabilities due to corneal scarring and infections in large extent. Early diagnosis and treatment is necessary to prevent blindness from avoidable causes like diabetic retinopathy, glaucoma and retinopathy of prematurity.

The gender difference is significant for getting visual disability certificates with more number of males than females. The reasons could be less awareness about disability certificates and their benefits, social inequality, not having access to the hospital due to family responsibilities, lack of time and ignorance. Disability affects economic, social, educational as well as family life and person becomes handicapped for getting regular jobs. Though there is increase in awareness of people about the benefits of disability certificates, few people couldn't tell the reasons for getting the disability certificates. There is need for awareness and publicity of importance of visual disability certificates for various purposes. Concrete measures are required to identify and rehabilitate the persons with visual disabilities. Evidence-based study can be accounted for early diagnosis and treatment of causes of ocular morbidity.

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