

Analysis of Visually Handicap Patients Attending Outpatient Department of a Tertiary Eye Care Hospital for Visual Handicap Certification in Central Rajasthan, India

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Abstract

Aim: To identify the sociodemographic characteristics, degree and various ocular causes leading to permanent visual handicap in a tertiary eye care hospital in central Rajasthan in India based on visual handicap certification issued by our tertiary eye care hospital after verification of the domicile of the person

Materials and methods: Records of all patients who applied for visual handicap certification during 1st January 20012 to 31st December 2015 were identified. Information was retrieved and analyzed to ascertain various causes of visual handicap, demographical features, diagnosis, percentage of visual disability and work activity status of each individual

Result: A total two hundred and sixty three people were granted with complete (100%) blindness certificate (visual acuity < 3/60 or central visual field less than 10 degree in the better eye) out of one thousand seven hundred and ninety patients who came for visual handicap certification. And one hundred and forty one people were given visual handicap certificate for their disability in percentage (eg: 40%, and 75%). The number of males was significantly higher than that of females in adult as well as paediatric age group. Trauma was the most common cause which leads to phthisis bulbi followed by optic atrophy and glaucoma.

Conclusion: High prevalence of phthisis bulbi caused by trauma in the younger population shows need of early intervention on certain occasions to prevent this disastrous condition in some cases. Early diagnosis and management is required to prevent blindness arising due to glaucoma and optic atrophy by various causes.

Key words: visual acuity, visual handicap, disability, visual handicap certification, complete blindness

I. Introduction

Blindness has been recognised as an important public health problem in India^[1]. Certification for complete blind or visually disabled person is done to coordinate social services for the individual. Registration as blind or visual handicap in India is purely voluntary and is performed by certification issued by a duly constituted board that includes district ophthalmic surgeon after verification of the domicile of the person. According to a guideline by the ministry of social justice and empowerment of government of India, the minimum degree of disability should be 40% for an individual to be eligible for any concessions or benefit^[2]. This study was designed to conduct a secondary data analysis of disabled individual based on sociodemographic characteristics, degree of disability, the cause of visual disability and work activity status of each individual.

II. Method and Materials

Patients obtaining visual disability certificates during 1st January 20012 to 31st December 2015 were retrospectively analyzed. Patients with visual disability of 40% or above were included in this study. The percentage of disability was calculated based on the guidelines for the evaluation of various disabilities and procedure for certification^[2]. (Table 1) Patient data were collected from records in the disability register of our tertiary eye care hospital in central Rajasthan in India and analyzed retrospectively. The team of three ophthalmologists from the hospital examined every case. We analyzed all 404 cases certified by the medical board at the center over a 4 year period. Patients who came for visual disability certificate were examined in the outpatient department. Diagnosis was based on medical history, clinical examination and special investigations such as tonometry and automated perimetry as and when necessary. The contents for analysis of this study included: age, gender, religion, percentage of disability and causative factor for visual handicap, status of education of patient, marital status, work activity status, reason for obtaining certificate and willing for rehabilitation of the disabled individual. The data were entered into database and analyzed using commercially available graph pad prism version 4 and ms excel.

III. Results

The study was conducted on 404 individuals having visual handicap certification at a tertiary eye hospital in central Rajasthan in India. The study followed the criteria set by the ministry of social justice and empowerment for complete blindness. The study deals with those individuals who were certified blind 100% (visual acuity < 3/60 or central visual field less than 10 degree in the better eye) and who were visually impaired (more than 40% of disability).(Table 1) Of these individuals, 251 (62.12%) were males and 85(21.03%) were females, whereas amongst paediatric age patients, 51(12.62%) were male children and 17(4.20%) were female children. The number of males were significantly higher than that of females in adult as well as paediatric age group. This could be attributed to the increased outdoor activities of males, or males may have more need of certification. Among the study population 349 (86.38%) were Hindu and 55 (13.61%) were Muslim by religion. Two hundred and sixty three (65%) individuals were 100% visually disabled, fifty four (13.36%) had 75% visual disability and eighty seven (21.53%) had 40% visual disability.(Table 2) . One hundred eighty nine (46.78%) of the males and seventy four(18.31%) of the females were 100% visually disable. Two hundred thirty five (58.16%) patients were in the working age group (age range, 21–60 years); further, 67 (16.58%) individuals were above 60 years of age and 68 (16.83%) individuals were below the age of 18 years. . Of all disabled individuals, 56.18% were unemployed and 27.47% were employed while 16.33% individuals belongs to study group. Two hundred fifty one(62.12%) patients were married and 153(37.87%) were not married in our study while information regarding consanguinity of marriage could not revealed by data analysis. Sixty nine(17.07%) individual revealed history of orthodox treatment in past, 134(33.16%) patients presented with no history of this kind of treatment in past and 201(49.75%) were not aware about the status .All information related to rehabilitation for visual handicap had been given to persons who responded towards counseling for rehabilitation. Of all disabled individuals 219(54.20%) person had responded positively for rehabilitation in future, 79(19.55%) patients did not show any interest towards information regarding rehabilitation services and counseling, whereas status was not known in 106(26.23%) patients. (Table 3) Among the visually disabled, phthisis bulbi was the most common cause of disability, being present in 95(23.51%) individual. Optic atrophy was the second most common cause in 13.6% (55) which was followed by glaucoma in 46 (11.38%) population whereas amblyopia and retinitis pigmentosa was found with same frequency (7.67%) in population.(Table 4)

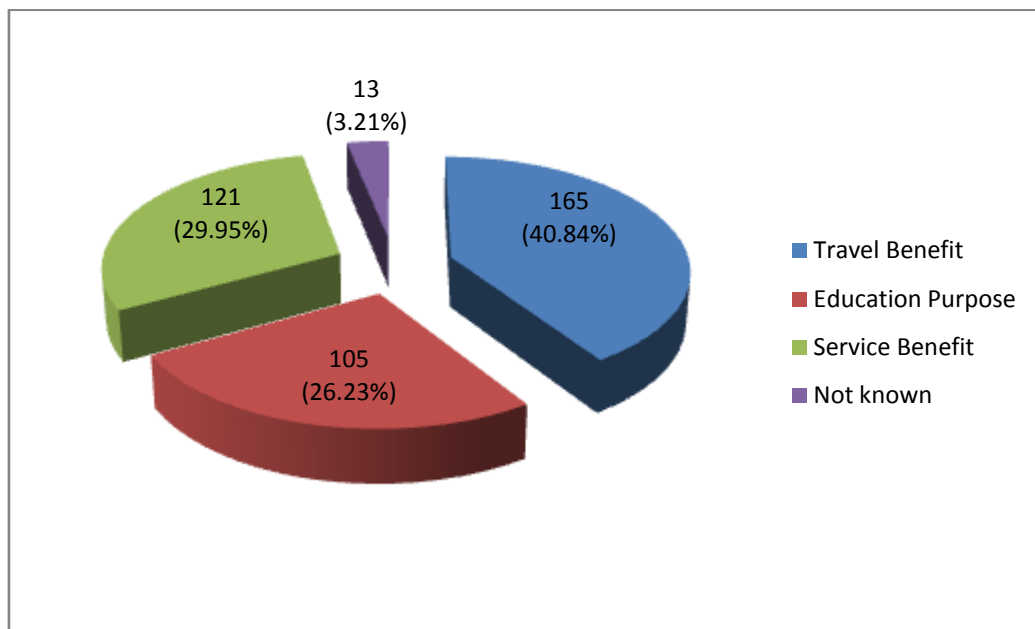


Figure 1: Reasons for obtaining visual handicap certificate

Table 1: Categories of visual disability

Best corrected visual acuity in the better eye	Best corrected visual acuity in the worse eye	Percentage of impairment
6/18-6/36	6/60 to nil	40
6/60-4/60 or field of vision 10°-20°	3/60 to nil	75
3/60 to 1 /60 or field of vision 10°	Finger count at 1 ft. to nil	100
F.C. at 1 ft. to nil or field of vision 10°	Finger count at 1 ft. to nil or field of vision 10°	100

Table 2: Distribution of visually disabled individuals according to the age, gender and percentage

Age in years	100%		75%		40%		Total cases (404)	
	M(189)	F(74)	M(47)	F(7)	M(66)	F(21)	M(302)	F(102)
0-17 years	34	11	14	3	14	7	62	21
19-40years	64	25	12	2	26	8	102	35
41-60 years	69	21	15	4	16	3	100	28
60-80 years	20	11	6	4	8	3	34	18
>80years	2	0	0	0	2	0	4	
Total	263		54		87		404	

Table 3: Sociodemographical profile of patients included in study

Sociodemographic characteristics		No of patients	% of visual handicap
Education status	literate	269	66.58%
	Illiterate	135	33.41%
Marital status	Married	251	62.12%
	Not married	153	37.87%
Working status	Not working	227	56.18%
	Working	111	27.47%
	Studying	66	16.33%
History of orthodox treatment	Yes	69	17.07%
	No	134	33.16%
	Status not known	201	49.75%
Willing for rehabilitation	Yes	219	54.20%
	No	79	19.55%
	Status not known	106	26.23%

Table 4: Causes of visual handicap according to age and sex distribution

Causes of visual handicap	0-18 year		19-40 year		40-60 year		60-80year		>80 year		Total
	M	F	M	F	M	F	M	F	M	F	
Pthisis bulbi	9	3	35	17	12	7	7	4	1	0	95(23.60)
Optic atrophy	8	1	15	8	12	5	5	1	0	0	55(13.61)
Glaucoma	2	0	12	9	12	7	3	1	0	0	46(11.38)
Amblyopia	10	1	11	6	2	1	0	0	0	0	31(7.67%)
Retinitis pigmentosa	1	1	9	8	4	6	1	1	0	0	31(7.67%)
Pathological myopia	3	1	10	3	1	1	0	0	0	0	19(4.70%)
Corneal opacity(luecoma)	1	1	3	2	5	2	3	1	0	0	18(4.4%)
Macular degeneration	0	1	6	2	3	1	1	0	0	0	14(3.46%)
Coloboma	3	2	4	5	0	0	0	0	0	0	14(3.46%)
Retinal detachment	1	0	5	2	3	1	1	1	0	0	14(3.46%)
Diabetic retinopathy	1		1	1	4		1	2	0	0	10(2.47%)
Luecocoria	5	4	0	0	0	0	0	0	0	0	9(2.22%)
Microphthalmos	3	1	4	0	0	0	0	0	0	0	8(1.98%)
Nystagmus	2	0	4	1							7(1.73%)
Ocular infections (endoph+panoph)	0	0	0	1	3	1	1	0	0	0	6(1.48%)
Corneal dystrophy	1	0	1	1	2	0	0	0	0	0	5(1.23%)
Failed PK	0	0	0	0	1	0	2	1	1	0	5(1.23%)
Staphyloma	0	0	2	0	0	0	3	0	0	0	5(1.23%)
Squint	0	0	2	1	1	0	0	0	0	0	4(0.99%)
Chorioretinitis	0	0	0	0	3	0	0	0	0	0	3(0.74%)
Albinism	0	1	1	0	0	0	0	0	0	0	2(0.49%)
Aphakia	1	0	0	0	0	0	0	0	0	0	1(0.24%)
Astigmatism	0	0	1	0	0	0	0	0	0	0	1(0.24%)
Vitrous degeneration	0	0	1	0	0	0	0	0	0	0	1(0.24%)

Table 5: distribution of patients according to congenital and adult causes in pediatric and adult population

Age group	Pediatric age group (n=51)	Adult age group (n=353)	Statistic
Congenital Causes	34	62	X ² =65.849 p=0.0001
Acquired causes	17	291	

Table 6: Distribution of visual handicap according to anterior and posterior segment pathology

Causes	Pediatric age group (n=51)	Adult age group (n=353)	Statistics
Anterior segment	25	170	$\chi^2=0.013$ p=0.9
Posterior Segment	26	183	

IV. Discussion

There have been many surveys in abroad^(3,4) and india^(5,6,7) regarding the prevalence of blindness in the community. They provide important information related to the causes of blindness and help the health planners to put strategies to decrease the prevalence of blindness. Obtaining a visual handicap certificate is a part of rehabilitation of a blind person. It helps the blind person to obtain various benefits related to travelling, service, educational purpose and income tax. Sixty eight (16.83%) patients were registered in the age group 5-19 years, which correspond to the years that people seek benefits in the education. In our study, 251 patients (62.12%) patients were males and 85 (21.03%) were females. Gender difference was found to be statistically significant ($p = 0.0419$). It was evident from our study that the number of males attending the medical board to obtain the disability certification was significantly higher than that of the females. Also, young patients were in a significant majority compared to the elderly people. Of all reasons travel benefit was more common, service and education purpose were next to it in younger age group.(Figure 1) This suggests that the driving force to attend the board for disability certification was more among the younger individuals. This was probably due to the presence of certain benefits associated with disability certification such as employment, education, travelling and income tax benefit, which are more likely to serve the purpose of young individual than the elderly. In our study, patients with 100% disability were in a majority (263) compared to patients with disability of lower grades. Similar finding was noted in a study in the United Kingdom where a partially sighted ophthalmic outpatient is estimated to be three times more likely to be noncertified than a blind patient with similar diagnosis.⁽⁸⁾ Of all disabled individual 56.18% were unemployed and 27.47% were employed while 16.33% individuals belongs to student category. 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 and the remaining are mostly employed in low-profile jobs and only 3% of the blind individuals are regular employees, the rest being either casual workers or attending domestic chores. In our study, phtthisis bulbi was the most common cause of disability⁽¹⁰⁾. Early intervention on certain occasions can prevent this disastrous condition. Optic atrophy was the second most common cause ahead of glaucoma. Congenital and developmental anomalies were present in 34 individuals (8.41%). Whereas, acquired causes of blindness in adult patients were present in 291cases which was found highly significant statistically. (Table 5) One limitation of this study was that it was dependent on the quality of information recorded and could not be verified. Another limitation was that since we used the hospital data, we had no specific population denominator; therefore, the rates could not be calculated and we depended only on the number of cases examined and certified.

So we conclude that there was high prevalence of phtthisis bulbi caused by trauma in the younger population which shows need of early intervention on certain occasions to prevent this disastrous condition in some cases. Also early diagnosis and management is required to prevent blindness arising due to glaucoma and optic atrophy by various causes.

References

- [1]. Dandona L, Dandona R, Naduvilath TJ, et al. Is current eye-care-policy focus almost exclusively on cataract adequate to deal with blindness in India? *Lancet* 1998;351:312-16.
- [2]. Guidelines for evaluation of various disabilities and procedure for certification. The Gazette of India extraordinary. Part 1. Section 1. No 154.
- [3]. Bunce C, Wormald R. Causes of blind certifi cations in England and Wales: April 1999-March 2000. *Eye (Lond)* 2008;22:905-11.
- [4]. West SK. Blindness and visual impairment in the Americas andthe Caribbean. *Br J Ophthalmol* 2002;86:498-504.
- [5]. Dandona R, Dandona L, Srinivas M, Giridhar P, Prasad MN, Vilas K, et al. Moderate visual impairment in India: The andhrapradesh Eye Disease Study. *Br J Ophthalmol* 2002;86:373-7.
- [6]. Dandona L, Dandona R, Srinivas M, Giridhar P, Vilas K, prasadm, et al. Blindness in the Indian State of Andhra Pradesh. *Investophthalmol Vis Sci* 2001;42:908-16.
- [7]. Murthy GV, Gupta SK, Bachani D, Jose R, John N. Current estimates of blindness in India. *Br J Ophthalmol* 2005;89:257-60.
- [8]. Bunce C, Evans J, Fraser S, Wormald R. BD8 certification of visually impaired people. *Br J Ophthalmol*.1998;82:72-6.
- [9]. National Sample Survey Organization, Ministry of Statistics and Programme Implementation, Government of India. Round Number 37th in 1981, 47th in 1991 and 58th in 2002.
- [10]. Evaluation of Registered Visually Disabled Individuals in a District of West Bengal, India Sambuddha Ghosh, Subhalakshmi Mukhopadhyay, Krishnendu Sarkar, Manas Bandyopadhyay, Dipankar Maji, and Gautam Bhaduri.