

Causes Of Visual Impairment Among Patients Seeking Visual Disability Certificate In A Tertiary Care Hospital Of West Bengal

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Abstract:

Background: Blindness is a major health problem in our country. This affects the person physically, mentally, socially and economically his/her family also. Most of the ocular problems are non-treatable, leading to permanent visual handicap but some of these are definitely preventable. Approximately 2.2 billion people are visually disabled out of which around 45 million are blind, worldwide, out of these, India alone constitutes approximately one-fifth of the blind people in the world which is nearly 8.9 million blinds. This study aims to describe sociodemographic characteristics of patients seeking visual disability certification at Bankura Sammilani Medical College and Hospital, West Bengal for three years (2021, 2022, 2023) and to find out different causes of visual impairment among those patients.

Materials and Methods: It was a record based, retrospective, descriptive study with cross sectional design. The record of visual disability was obtained from the manual records available at the record section of Bankura Sammilani Medical College and Hospital. Study subjects were included by complete enumeration method. Data were analysed using SPSS software (version 22, IBM New York). The descriptive analysis was done by using mean, standard deviation and proportion.

Results: Total number of patients were 441 and the mean age of the participants was 33.8 (95% C.I. 32.3-35.3) ± 16.2 years. Male female ratio was 2.1:1. Proportion of Hindu was 89.6% (95% CI 86.9-92.3). Proportion of Muslim was 10.4% (95% CI 7.7-13.1). Majority of the patients belonged to 21-40 years age group (45.8%). Majority of the patients was completely blind (45.0%). Commonest cause of visual impairment among patients was congenital eye disease.

Conclusion: Congenital eye diseases are most common cause of visual impairment according to the current study and this can be prevented by genetic counselling. Other causes of visual impairment like glaucoma and some retinal causes can be prevented by early intervention. Based on these findings, guidelines should be framed to improve community eye health.

Key Word: Visual impairment, visual disability certificate, tertiary care hospital

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I. Introduction

In developing countries like India, blindness is a major health problem.¹ This affects the person physically, mentally, socially and economically his/her family also. Most of the ocular problems are non-treatable, leading to permanent visual handicap.² Approximately 2.2 billion people are visually disabled out of which around 45 million are blind, worldwide, out of these, India alone constitutes approximately one-fifth of the blind people in the world which is nearly 8.9 million blinds.³

India was the first country in the world to launch the National Program for Control of Blindness in 1976 and the goal was to reduce the prevalence of blindness to 0.3% by the year 2020. India has implemented a series of measures in its ongoing National Program for Control of Blindness and Visual Impairment (NPCB&VI) in order to combat blindness and visual impairment. The National Blindness and Visual Impairment Survey 2015-2019 was conducted to provide the evidence about the present status of blindness and visual impairment in India and this survey was planned by the Ministry of Health and Family Welfare, Government of India.⁴

As a part of rehabilitation, certificates for visual impairment are issued, based on standard guidelines of the Ministry of Social Justice and Empowerment. The certificate can be temporary or permanent, depending on the type of ocular condition. Certification of visually disabled in India is categorized based on its severity and is performed by a duty constituted board that consists of ophthalmologists. According to the guidelines by the ministry of social justice and empowerment of the government of India, the minimum degree of disability should be 40% for an individual to be eligible for any concession or benefit.²

Blindness means a condition where the person is having total absence of sight or visual acuity less than 3/60 in the better eye or limitation of field of vision subtending an angle of fewer than 10 degrees. Low vision means a condition where the person even with the best possible correction is having visual acuity in a range between 6/18 to 3/60 or limitations of vision subtending an angle of fewer than 40 degrees up to 10 degrees.⁵ The objectives of the study were to describe sociodemographic characteristics of patients seeking visual disability certification at Bankura Sammilani Medical College and Hospital, West Bengal for three years (2021, 2022, 2023) and to find out different causes of visual impairment among those patients.

II. Material And Methods

It was a record based, retrospective, descriptive study with cross sectional design, conducted from November 2023 to January 2024 i.e., three months in Bankura Sammilani Medical College and Hospital, West Bengal. The record of visual disability was obtained from the manual records available at record section of the medical college and hospital. The data were filled up in a pre-designed proforma. Study subjects were included by complete enumeration method. Data were analysed using SPSS software (version 22, IBM New York). The descriptive analysis was done by using mean, standard deviation and proportion. The causes of visual impairment were divided in 10 groups. These were,

1. Amblyopia- This is a condition with unilateral or bilateral decrease of visual functions, caused by form vision deprivation and/or abnormal binocular interaction, that cannot be explained by a disorder of ocular media or visual pathways itself.⁶ This group included amblyopia due to refractive causes, due to aphakia and all other causes of amblyopia.
2. Congenital eye diseases- Coloboma, microcornea, microphthalmos, anophthalmus, oculocutaneous albinism, nystagmus, Lenticonus, congenital cataract were included in this group.
3. Corneal causes- included corneal dystrophies, keratoconus, bullous keratopathy and corneal opacities.
4. Optic disc diseases – Optic atrophy (other than glaucoma), optic neuritis
5. Glaucoma- A group of conditions that have in common a chronic progressive optic neuropathy that results in characteristic morphological changes at the optic nerve head and in the retinal nerve fibre layer.⁷
6. Retinal and choroidal causes- included acquired macular conditions, Retinal detachment, Retinitis pigmentosa, and choroidal causes.
7. Phthisis bulbi- It is a clinical condition representing end stage ocular response to severe eye injury or disease damage, related to a variety of causes leading to scarring, inflammation, sacring, atrophy and eventually disorganization of the globe and intraocular contents.⁸
8. Staphyloma- It is an ectasia of outer coats (cornea, sclera, or both) in which the uveal tissue is incarcerated.⁹
9. Cortical blindness
10. Other causes- included complicated cataract and cerebral palsy

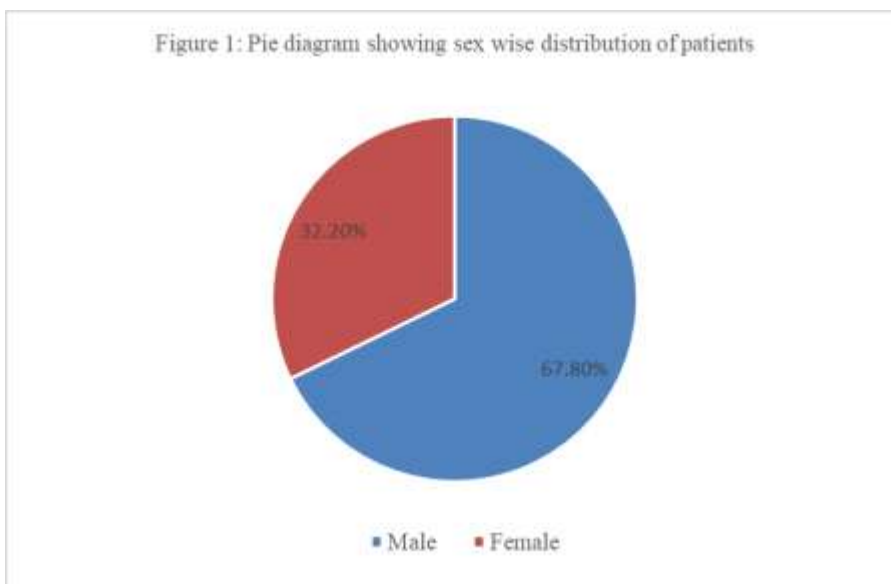
III. Result

Total number of patients were 441 and the mean age of the participants was 33.8 (95% C.I. 32.3-35.3) ± 16.2 years. Proportion of males was 67.8% (95% CI 63.3 – 72.1). Proportion of Females was 32.2% (95% CI 27.8-36.5). Proportion of Hindu was 89.6% (95% CI 86.9-92.3). Proportion of Muslim was 10.4% (95% C I 7.7-13.1).

Table no 1: Distribution of patients according to age (n=441)

Age groups (in years)	Number	Percentage
<20	98	22.2
21-40	202	45.8
41-60	110	24.9
61-80	31	7.1

Table 1 shows that majority of the patients belonged to 21-40 years age group (45.8%) while patients of 61-80 years age group contributed only 7.1%.

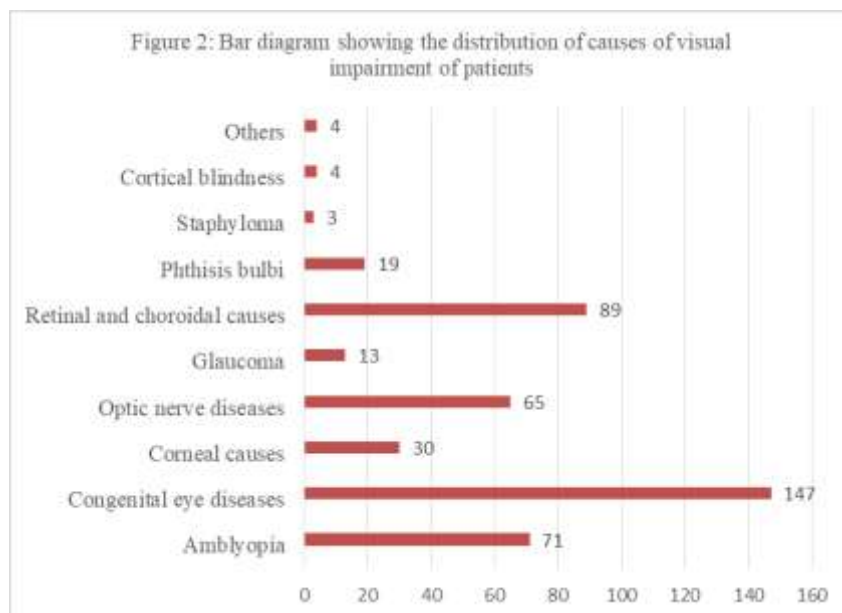


It is revealed by Figure 1 that majority of the patients was male (67.80%). While the females were less in number.

Table no2:Distribution of patients according to percentage of visual impairment(n=441)

Visual impairment	Number	Percentage
30%	4	0.9
40%	94	21.3
50%	28	6.3
60%	34	7.7
70%	46	10.4
80%	24	5.4
90%	13	3.0
100%	198	45.0

Table 2 reveals that majority of the patients was completely blind (45.0%). Nearly all patients were eligible to get benefit due to disability.



It is revealed from figure 2 that commonest cause of visual impairment among patients was congenital eye disease followed by retinal and choroidal causes, amblyopia and optic nerve diseases. The least common cause of visual disability was staphyloma.

IV. Discussion

It was a record based, descriptive study of cross-sectional design, conducted in Bankura Sammilani Medical College and Hospital, West Bengal. Several studies are available in our country and abroad regarding this issue. In a study, conducted in Japan most common age group was 80-89 years (29.6%).¹⁰ Another study conducted in Odisha reveals maximum patients (59.6%) were in working age group (21-60 years)¹¹. According to another study conducted by Mohite U, Patil S, maximum number of patients (42.4%) belonged to 21-40 years group¹² which is similar to present study.

A hospital based study conducted in Eastern India revealed that majority of the patients were male (68.28%)¹³. Another study conducted by Palchowdhury K and Karmakar S revealed male female ratio was 2.63:1.¹⁴ According to another study conducted by Mohite U and Patil S males were more than females (64.87%).¹² All findings are same as present study.

A study conducted by Palchowdhury K and Karmakar S revealed that maximum number of patients (64.58%) belonged to 100% disability group.¹⁴ According to another study conducted in Odisha, maximum (32.1%) had 100% visual disability¹¹, which was similar to present study.

According to a study conducted in Japan, the most common cause of visual disability was glaucoma followed by retinitis pigmentosa, diabetic retinopathy and macular degeneration¹⁰. Amblyopia was found to be the commonest cause of visual impairment in a study conducted in Odisha¹¹. Another study conducted by Mohite U and Patil S revealed that phthisis bulbi was most common cause of visual impairment¹². A study of North Kolkata showed optic atrophy to be the commonest cause of visual impairment followed by microphthalmos¹³. Another study of West Bengal revealed that congenital malformations were most common cause of visual impairment followed by retinitis pigmentosa and corneal opacity¹⁴ and the findings are almost similar as the present study.

V. Conclusion

Visual disability certificate helps in rehabilitation of disabled person and at the same time helps the government in planning proper strategies to decrease the burden of blindness in the society. Congenital eye diseases are most common cause of visual impairment according to the current study and this can be prevented by genetic counselling. Other causes of visual impairment like glaucoma and some retinal causes can be prevented by early intervention. Based on these findings, guidelines should be framed to improve community eye health.