

A Clinical and Etiological Profile of Visual Impairment in Bihar Region

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Abstract

Aim: To study the clinical profile of causes of visual impairment in Bihar Region.

Material & Methods: The study participants included all patients irrespective of their age group, coming to the hospital OPD and then referred to the Ophthalmology Department. Informed consent was obtained, and patients were interviewed by the investigators and information was entered, based on a pre-tested pre-designed proforma. Socio-demographic details of each study participant were obtained.

Results: The participants studied were grouped into; no visual impairment i.e. 107 (71.3%), visual impairment Grade 1 i.e. 32 (21.3%), Grade 2 i.e. 6(4%) or blindness Grade 3 i.e. 4 (2.67%), Grade 4 i.e. 1 (0.67%) based on WHO classification of low vision1 (Table 2).

Conclusion: A high prevalence of refractive errors and cataract was noted, which are both causes of preventable blindness and can only be prevented by creating awareness by means of health education.

Keywords: Ocular morbidities, Urban, Goa

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Introduction

Prevention of childhood blindness is a priority of the World Health Organization's Vision 2020: The Right to Sight. [1] In India, the prevalence of blindness in children under 16 years of age is estimated to be approximately 0.8/1,000. [2] It is estimated that at least 200,000 to 300,000 children in India have severe visual impairment or blindness and approximately 15,000 are in schools for the blind.[2-3]This is significant in terms of total number of disability-adjusted life years lost, social and functional challenges, and lifelong burden on the

child and caregivers. [4] Many causes of severe visual impairment and blindness (SVI/BL) in children are avoidable, either preventable or treatable. There are geographical variations in the major causes of childhood blindness. [5]

Low vision aids and rehabilitation therapy are considered the primary methods of intervention in visually impaired patients. The aim of low vision aids is to improve patient's performance in certain tasks through efficient use of residual vision through prescribing optical and non-optical electronic devices. [6] The most

commonly prescribed and enduring low vision aids are optical devices. These may include spectacle-type low vision aids, stand magnifiers, handheld magnifiers, and telescopic systems. These optical devices aim to improve visual functions by enhancing perceived retinal images through magnification, image displacement, light filtering, or light condensation.¹⁵ The non-optical electronic devices generally include a number of adaptations in perceived image such as contrast, spatial frequency, and brightness range or edge boldness.[7-8] Thus, we aim to study the clinical profile of causes of visual impairment in Bihar Region.

Material & Methods

A study was conducted in Department of ophthalmology Anugrah Narayan Magadh Medical College & Hospital, Gaya, Bihar, India for 1 year.

The study participants included all patients irrespective of their age group, coming to the hospital OPD and then referred to the Ophthalmology Department.

Informed consent was obtained and patients were interviewed by the investigators and information was entered, based on a pre-tested pre-designed proforma. Socio-demographic details of each study participant were obtained.

History was obtained regarding any ocular complaints, and a detailed ophthalmic examination was done which included a detailed torch light examination, assessment of visual acuity using Snellen's distance vision chart and Times New Roman near vision chart, tonometry using Schiotz tonometer, and fundus examination using direct ophthalmoscope.

Data entry was done using Microsoft Excel 2010 version and statistical analysis included percentages and proportions.

Results:

Age distribution: The majority of the participants (37.3%) were middle-aged belonging to the age group of 41-60 years; while the least (4.6%) were those aged more than 80 years (Table 1).

Visual acuity: The participants studied were grouped into; no visual impairment i.e. 107 (71.3%), visual impairment Grade 1 i.e. 32 (21.3%), Grade 2 i.e. 6(4%) or blindness Grade 3 i.e. 4 (2.67%), Grade 4 i.e. 1 (0.67%) based on WHO classification of low vision¹ (Table 2).

Retinal and macular diseases: 8 participants (5.3%) presented with retinopathy due to diabetes or hypertension. 3 patients i.e. 2% had macular diseases such as age related or hereditary macular degeneration (Table 3).

Table 1: Age distribution of study participants

Age group (years)	No. of patients	%
1-20	17	11.3
21-40	33	22
41-60	56	37.3
61-80	37	24.7
>80	7	4.67
Total	150	100

Table 2: Visual impairment among study participants

Categories of visual impairment	Vision	Number of patients	%
No visual impairment	>6/18	107	71.3
Visual impairment			
Category 1	6/18-6/60	32	21.3
Category 2	6/60-3/60	6	4

Blindness			
Category 3	3/60-1/60	4	2.67
Category 4	1/60-PL	1	0.67
Total		150	100

Table 3: Distribution of ocular morbidities among the study participants

Ocular Morbidities	Number of patients	%
Corneal opacities	1	0.67
Cataract	33	22
Apakhia	1	0.67
Refractive errors	98	65.3
Glaucoma	9	6
Optic atrophy	5	3.33
Retinopathies	8	5.33
Macular diseases	3	2
Total	150	100

Discussion:

Studies conducted in Allahabad and Uttar Pradesh had a similar gender ratio like ours.[16,17] That gender based discrimination in healthcare and education for children in India is well established. [9-11]

Although it is rare, childhood cataract is one of the most important causes of blindness and severe visual impairment in children and is responsible for 5–20% of pediatric blindness worldwide. [12]

Results found by Haq et al [15], where 32.8% were illiterates and 24.9% belonged to low socio-economic background. The high percentage of patients with cataract is probably due to higher average life expectancy in Goa, low socio-economic status, illiteracy and lack of awareness about the treatable nature of cataract.

Eight patients (4%) were found to have glaucoma. Six patients were aged more than 40 years and had primary open angle glaucoma. One female patient aged 65 years was found to have narrow angle glaucoma. The prevalence of glaucoma in our study is lower than that found by Baldev et al [16] in their study (11.1%).

This study revealed that 21 (22.6%) children who had no visual impairment has

been enrolled in schools for the blind. Rahi et al. in 1995 reported that 0.9% of all children studying in schools of blind had no visual impairment.[17] Gogate et al. also reported that 6 (0.3%) out of 1795 children studying in schools for the blind had no visual impairment. [18,19]

Conclusion:

A high prevalence of refractive errors and cataract was noted, which are both causes of preventable blindness and can only be prevented by creating awareness by means of health education.

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