


ORIGINAL ARTICLE**Assessment of the Etiologies of Visual handicap amid patients reporting to Outpatient Department of Medical College in Mumbai: A Retrospective Study**¹Shrikant Deshpande, ²Nitesh Bhalla, ³Reshma Ramakrishan^{1,3}Associate Professor, ²PG Resident, Department of Ophthalmology, MGM Hospital and College, Kamothe, Mumbai, Maharashtra, India**ABSTRACT:**

Background: Visual impairment has significant effects on life quality and leads to serious social and economic implications for family and society. It is also a challenging issue for employment and recruitment in many countries. **Aim of study:** The assessment of the etiologies of Visual handicap amid patients reporting to Outpatient Department of medical college in Mumbai. **Materials and methods:** The study was conducted in the Department of Ophthalmology, MGM Hospital and College, Kamothe, Mumbai. We retrospectively analyzed the patients that obtained visual disability certificates during 1st January 2016 to 31st December 2016 from the Department of Ophthalmology. The records of the patients, who were legally blind with best corrected visual acuity of 3/60 (10/200) in a better eye were recognized and included in the study for analysis. **Results:** A total of 158 patients comprised the study group. The age of the patients ranged from 5-80 years with mean age to be 41.68 ± 23.32 years. 96 were males and 62 were females. The majority of patients belonged to the age group >64 years in both the genders. The retinitis pigmentosa was the leading cause of blindness in our study group (n=30), followed by corneal scar (n=26) and congenital malformations (n=25). **Conclusion:** The most common etiology for visual acuity in MGM Hospital, Kamothe, Mumbai during the time period of the study was Retinitis pigmentosa followed by corneal scar. This study provides measures likely to be taken to prevent visual handicap in this area.

Keywords: Cornea, Blindness, Glaucoma, Visual acuity.**Corresponding author:** Dr. Nitesh Bhalla, PG Resident, Department of Ophthalmology, MGM Hospital and College, Kamothe, Mumbai**This article may be cited as:** Deshpande S, Bhalla N, Ramakrishan R. Assessment of the Etiologies of Visual handicap amid patients reporting to Outpatient Department of Medical College in Mumbai: A Retrospective Study. J Adv Med Dent Sci Res 2017;5(11):72-75.

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INTRODUCTION: Blindness is defined by the World Health Organisation as best corrected visual acuity in the better eye of less than 0.05 (3/60) or a visual field of 10 degree or less. ¹According to a report by World Health Organization, population of blind people estimates to approximately 45 million and that of visually impaired estimate to about 135 million. ²Cataract is the most common etiology for blindness and about 16-20 million people suffer from blinding cataract. ³Being specific on the country level, India is reported to have biggest population of blind people (over 9 million) with unoperated cataract being the most common cause for blindness and low vision. ⁴Visual impairment has significant effects on life quality and leads to serious social and economic implications for family and society. It is also a challenging issue for employment and recruitment in much countries. ⁵Visual impairment may

affect productivity and may lead to injuries. ⁶ Hence, the present study was planned for the assessment of the etiologies of Visual handicap amid patients reporting to Outpatient Department of medical college in Mumbai.

MATERIALS AND METHODS:

The present study was conducted in the Department of Ophthalmology, MGM Hospital and College, Kamothe, Mumbai. For the ethical clearance of the study, the study protocol was submitted to the ethical committee of the college and ethical clearance was obtained. For the study, we retrospectively analyzed the patients that obtained visual disability certificates during 1st January 2016 to 31st December 2016 from the Department of Ophthalmology. The records of the patients, who were legally blind with best corrected visual acuity of 3/60 (10/200) in a better eye were recognized and included in the study for analysis. Each case

was examined by a team of 3 ophthalmologists from the hospital. They observed etiology of blindness, percentage of visual disability, and reason for obtaining visual disability certificate. The obtained data was tabulated and further evaluated.

The statistical analysis of the data was done using SPSS program for windows. The Student’s T-test and Chi-square test were used for the verification of statistical significance of the data. A p-value <0.05 was predetermined to be statistically significant.

RESULTS:

A total of 158 patients comprised the study group. The age of the patients ranged from 5-80 years with mean age to be

41.68 ± 23.32 years. Out of 158 patients, 96 were males and 62 were females. The majority of patients belonged to the age group >64 years in both the genders (**Table 1 and Fig 1**). The difference of age groups and sex groups was statistically significant (p=0.016). **Table 2** shows the frequency of patients with different etiologies if visual handicap. We observed that retinitis pigmentosa was the leading cause of blindness in our study group (n=30), followed by corneal scar (n=26) and congenital malformations (n=25). The least common cause for the visual handicap was age related macular degeneration and retinopathy of prematurity (n=1 each) [**Fig 2**].

Table 1: Grouping of patients on the basis of age and sex

Age Groups (years)	Male patients	Female patients	Total	P value
5-19	08	05	13	0.016
20-44	21	12	33	
45-64	29	16	45	
>64	38	29	67	
Total	96	62	158	

Figure 1: Grouping of patients on the basis of age and sex

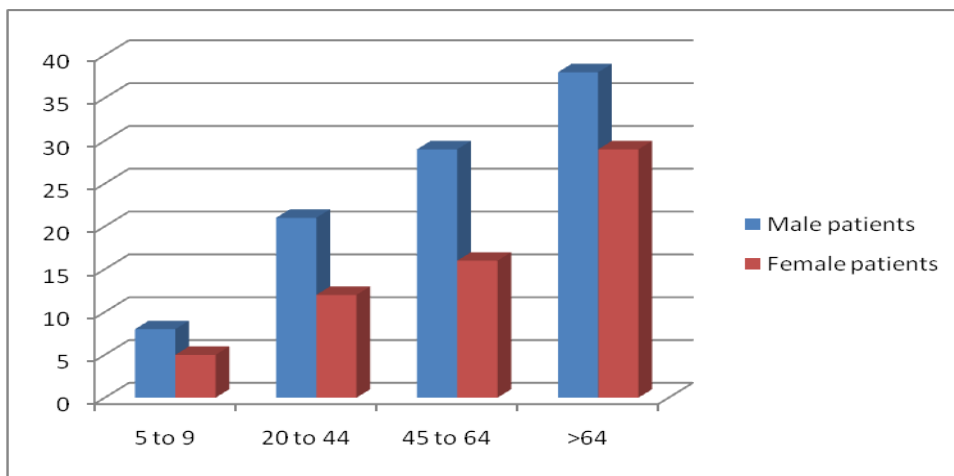


Table 2: Frequency of patients with different etiologies of visual handicap

Etiology of Visual handicap	No. of patients
Diabetic retinopathy	22
Optic atrophy	18
Retinopathy of prematurity	1
Corneal scar	26
Congenital malformations	25
Glaucoma	23
Retinitis pigmentosa	30
Steven-Johnson Syndrome	14
Age related macular degeneration	1
Total	158

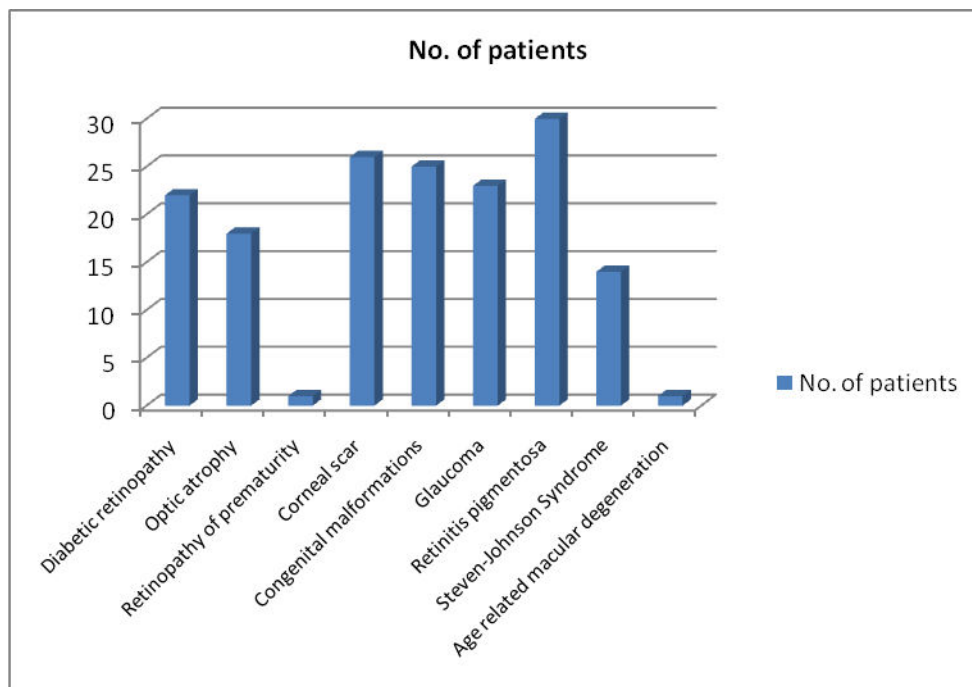


Figure 2: Frequency of patients with different etiologies of visual handicap

DISCUSSION:

There have been many surveys in abroad and India 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.⁶ Evidence-based information is important to plan low vision care and rehabilitation services. Obtaining a visual handicap certificate is a part of rehabilitation of a blind person. It helps the blind person to obtain travel and income tax benefit. Data collected in this study may be useful to the governmental agencies to plan the strategies for rehabilitation and prevention.⁷

The present study was planned to retrospectively assess the etiologies of visual handicap amid patients reporting to Outpatient Department of medical college in Mumbai. We observed that retinitis pigmentosa was the leading cause of blindness in our study group followed by corneal scar and congenital malformations. The least common cause for the visual handicap was age related macular degeneration and retinopathy of prematurity. The results were consistent with other studies in the literature. Bodeau-Livinec F et al studied recent trends in the cumulative incidence of visual impairment in childhood over a 15-year period and assessed progress against WHO goals for prevention. Data from a population-based register of visual impairment in southern England were used to estimate cumulative incidence and trends in visual impairment (VI) and severe visual impairment/blindness (SVI/BL) for children born in 1984–1998. Causes were classified by anatomical site(s), timing

of insult(s) and whether the visual impairment was potentially preventable or treatable. Of 691 eligible children, 358 (53%) had VI and 323 (47%) SVI/BL. The cumulative incidence of VI to age 12 years was 7.1 per 10 000 live births and for SVI/BL was 6.2; the incidence of both decreased significantly over time. There was an inverse relationship with gestational age and birth weight, although the risk of visual impairment associated with prematurity and low birth weight decreased substantially over time. 55% of children with VI and 77% with SVI/BL had other impairments; the proportion of associated impairments among children with VI decreased over time. 130 (19%) of the children have died, with over half dying before the age of 5. It was concluded that there is evidence of a temporal decline in the incidence of VI and SVI/BL in births from 1984 to 1998 especially in very preterm and low birthweight infants. Early childhood mortality was high. The causes of visual impairment in UK children are numerous, complex and often part of a wider picture of childhood disability. Munier A et al determined the prevalence of potentially avoidable blindness and to identify its causes. Criteria for registration as blind in Ireland were: best corrected visual acuity of 6/60 (0.1) or less in the better eye or a visual field restricted to 20 degrees or less. Data on 5002 adults 16 years an older registered as blind were analyzed. The causes of blindness are classified in 17 diagnostic categories. The leading causes of blindness are macular degeneration and glaucoma, each accounting for 16% (812 and 795). Cataract accounted for 11% (561), a third of these had an associated cause of blindness and one tenth had a cognitive deficit.

Diabetic retinopathy ranked as the 11th cause of blindness and accounted for 3% (147). More than half of the patients were 65 years and older. The authors concluded that 25% of blindness was potentially avoidable. The treatable causes were glaucoma and diabetic retinopathy in the working population and glaucoma and cataract over 65 years of age. Glaucoma is the most important, which raises the question of a screening programme. The prevalence of blindness of 3% due to diabetic retinopathy is lower than in most other series.^{8, 9} Gundogan FC et al explored the causes and prevalence of visual impairment in young Turkish men. The health examination data of the candidates that are saved in National Defense Ministry of Turkey was used. The data of the candidates examined between 1 January 2009 and 31 December 2011 were evaluated. The total number of the candidates was 1777500. The candidates requiring advanced examination are referred to secondary and tertiary examination hospitals. Fourteen thousand eight hundred sixty two (14862) out of 1777500 candidates were declared unfit for compulsory military service because of ophthalmic causes. The prevalence of ophthalmologic diseases causing unfitness for military service was found 0.746% for 2009, 0.871% for 2010 and 0.889% for 2011. These included high refractive errors which was the most frequent pathology causing unfitness (40.1%). Nonsurgical retina, vitreous and optic nerve diseases were the most frequent cause of visual impairment (0.212%). Corneal and lens pathologies were the second most frequent cause of blindness (0.101%). This study gives considerable knowledge about the causes and prevalence of visual impairment in Turkey. Dineen BP et al determined the age, sex, and cause of specific prevalence of blindness and visual impairment in adults 30 years of age and older in Bangladesh. A nationally representative sample of 12 782 adults 30 years of age and older was selected based on multistage, cluster random sampling with probability proportional to size procedures. The breakdown of the cluster sites was proportional to the rural/urban distribution of the national population. The examination protocol consisted of an interview, visual acuity (VA) testing, autorefraction, and optic disc examination on all subjects. Corrected VA retesting, cataract grading, and a dilated fundal examination were performed on all visually impaired subjects. The definitions of blindness (<3/60) and low vision (<6/12 to ≥3/60) were based on the presenting visual acuity in the better eye. The World Health Organization/Prevention of Blindness proforma and its classification system for identifying the main cause of low vision and blindness for each examined subject was used. In total, 11 624 eligible subjects were examined across the 154 cluster sites. A total of 162 people were bilaterally blind while a further 1608 subjects had low vision (<6/12 VA) binocularly. Visual acuity was >6/12 in the “better eye” in the remaining 9854 subjects; however, 748 of these people

had low vision in the fellow eye. The main causes of low vision were cataract (74.2%), refractive error (18.7%), and macular degeneration (1.9%). Cataract was the predominant cause (79.6%) of bilateral blindness followed by uncorrected aphakia (6.2%) and macular degeneration (3.1%). They concluded that there were an estimated 650 000 blind adults aged 30 and over in Bangladesh, the large majority of whom are suffering from operable cataract.^{10,11}

CONCLUSION:

From the results, we conclude that the most common etiology for visual acuity in MGM Hospital, Kamothe, Mumbai during the time period of the study was Retinitis pigmentosa followed by corneal scar. This study provides measures likely to be taken to prevent visual handicap in this area.

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