ORIGINAL ARTICLE

Spectrum of young visually disabled patients reporting for disability certificate at tertiary eye care Hospital

Snigdha Sen[1], Renu Agrawal[2], Pinky Verma[3], Anu Jain[4,] Mukesh Prakash[5]

[1,3,4,5]Department of Ophthalmology,Sarojini Naidu Medical college, Agra, Uttar Pradesh

[2]Department of Social & Preventive Medicine,Sarojini Naidu Medical college, Agra, Uttar Pradesh

CORRESPONDING AUTHOR

Dr. Mukesh Prakash, Department of Ophthalmology, Sarojini Naidu Medical college, Agra, Uttar Pradesh282003

Email: dr.mprakash010@gmail.com

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ABSTRACT

Background: Visual impairment as a form of disability that can causes social isolation. The study emphasis on factors of Visual impairment and their health outcome. **Aim & Objective:** The study analyse the demographic profile and causes of visual disability in patients below 40 years attending the tertiary eye care hospital and its implementation in health planning. **Material &Methods:** 172 patients with visual disability were chosen as subjects. All patients were subjected to detailed clinical history and complete ocular examination. The main causes of blindness, visual Impairment in these patients were determined in terms of age group and category and percentage. Results were compared with data from studies on blindness certificates and population based studies. The data was analysed and categorise according to the guidelines for visual disability by ministry of social justice and empowerment of government of India. **Results-** out of 172 patients, 41.27% were in the age group of 31- 40 years, 64.53% were found to be males and 18.02% were having 100% visual disability.73.25% cases belong to rural area. Ocular trauma is found to be most common causes of monocular blindness(20.93%). Retinitis pigmentosa found to be a major cause (21.51%) of visual disability in binocular blindness mostly inyoung adults. **Conclusion**: It is also important to raise awareness about getting treatment immediately following injuries. Increasing RP cases might be connected to rising consanguinity and shortage of genetic counselling.

KEYWORDS

Category of Disability, Disability Certificate, Visual Impairment, Retinitis Pigmentosa, Visual Disability.

INTRODUCTION

Visual disability is a raising public health issue in developing countries. Some eye conditions can be treated, while others cannot,leads to visual disability. Vision impairments is a visual state that affects the ability of an individual to do his daily activities independently and is an important impediments to social acceptance and ,is considered a common form of disability.(1). Studies show that women are more likely than men to experience visual impairment (2). The prevalence of blindness and socioeconomic position are closely correlated. According to surveys, blindness affects the lower socio-economic status twice

as often as the wealthy (3).Visual Disability register are an important tool for public eye health programs and have been used as data source for population based research. So the visual disability and blindness register will provide information regarding cause, distribution and it's prevention apart from blindness (4). In India ,because of poor reporting and record keeping,this methodology is not been used so far(5).Registration of visual disability and blindness is voluntary so under registration is also major problem.

Aim: Measure the spectrum of visual disability in terms of age group , causes , percentage with categories of visual disability in patients less than 40yrs of age.

Objective: To measure the following in visual disabled subjects

1. Age group with causes of disability
2. Category with percentage of visual disability
3. Role in health planning.

MATERIAL & METHODS

It was a cross sectional observational study. In 29212 patients, who were willing for visual disability certificate and came to tertiary eye care centre for further investigation during the study period between December 2020 to June 2020 for period of 2 years. All patients were undergone detailed clinical history and complete ocular examination which includes best corrected visual acuity according to snellens chart, anterior segment examination using slit lamp,applanation tonometer for intraocular pressure,posterior segment analysis by direct and indirect opthalmoscopy and /or slit lamp biomicroscopy using +90D after pupil dilation with mydriatric,OCT and/orVEP and MRI,CT scan,ultrasonography(USG) in selected cases. Diagnosis was made after excluding avoidable (curable and senile) cause of decreased vision. Patients less than 40 years of age and both male and females were included. 172 patients applied for visual disability certificate were chosen as subjects. Informed consent had signed from subjects and permission taken from ethical board of institution ,Agra. For purpose of certification, Government of India guidelines were followed which says that, disability should be assessed when the specialist is satisfied that further medical treatment/intervention is not likely to reduce the extent of impairmen.(6) In this study, blindness/handicap certificate would mean certificates with 40% and above of percentage VI, who are entitled to government benefits.(6,7) We analyzed all applications for blindness certifications to know causes of VI, visual handicap, and blindness in different age groups. In our study, we considered a person to be visually impaired if his eyesight could not be corrected to a “normal level” (Centers for Disease Control and Prevention, CDC). Analysis was performed according to VI disability categories and percentages proposed by Government of India (category 0–4; 20–100%) (Table 1). Category 1 (40% disability; best corrected visual acuity (BCVA) 6/18 -6/36 in better eye) was considered as moderate VI. Blindness was considered to be BCVA less than 6/60 or field of vision less than 20 degree in better eye. Hence, categories 2–4 (75–100% disability) were considered blind. Categories 1–4 (40–100% disability) came under visual handicap. One eyed were given 30% disability percentage (vision in better eye – 6/6, worse eye – finger counting 1 foot to no perception of light). Category 0 included those with 20% VI (BCVA 6/9 to 6/18 in better eye).

Descriptive statistics was done for all data. Based on chi-square and non-parametric test was done and declared statistically significant for p value<0.05.The variables were age, gender,occupation,percentage of disability, and cause of visual disability.

Table 1 Categories of visual disability (Classification currently in use)1

Category	Better eye-	Worse eye	Percentage impairment
Category 0	20/30-20/60	20/80 - 20/120	20
Category I	20/60-20/120	20/200 to Nil	40
Category II	20/130-20/300 or field of vision10°-20°	20/400 to Nil	75

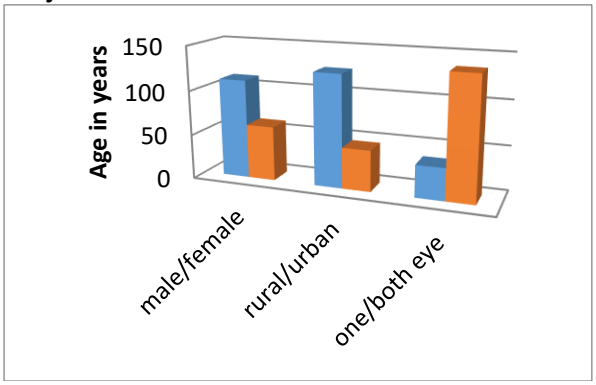
Category	Better eye-	Worse eye	Percentage impairment
Category III	20/400-20/1200 or field of vision 10°	20/8000 to Nil	100
Category IV	20/8000 to Nil or field of vision 10°	20/8000 to Nil	100
One eyed persons	20/20	20/8000 to Nil or field of vision 10°	30

**With correcting lenses*

RESULTS

In the study of 172 individuals, gender difference in visual disability affects the female 35.46% (61)as against 64.53%(111) males. 126 cases (73.25%) were from rural and 46 (26.74%) from urban area. 20.93%(36) patients belong to one eye involvement and 79.06% (136)patients belong to both eye involvement.(Figure1)

Figure1 Graphical representation of demographical factors of visually disabled subjects.



Our study have 37 cases (21.51%) of retinitis pigmentosa, 30 cases (17.44%) having ametropic amblyopia, 28 cases (16.27%) having phthisis bulbi, 25 cases (14.53%) having congenital anomaly, 21 cases (12.20%) having optic atrophy, 13 cases (7.55%) having strabismic amblyopia, 7 cases (4.06%) having eviscerated one eye, 4 cases (2.32%) having vascularised corneal opacity, 4 cases (2.32%) having macular dystrophy, 3 cases (1.74%) having failed retinal detachment surgery (Table 2)

31 patients (18.02%) were found to be 100% visual disabled, 36 cases (20.93%) were one eyed have 30%disability, 42 cases (24.41%) having 40% disability and 63 cases (36.62%) having 75% disability (Table3)

41.27% disability was found to be between 31 to 40 years of age followed by age group between 11 to 20 years (23.83%). (Table 4)

Phthisis bulbi, eviscerated eye, corneal opacity, retinal detachment and post traumatic optic atrophy due to ocular trauma found in 25.58% cases.

Table 2 Causes of Visual Disability

Causes	Number Of Cases(N)	Percentage
Retinitis Pigmentosa	37	21.51%
Ametropic Amblyopia	30	17.44%
Phthisis Bulbi	28	16.27%
Congenital Anomaly	25	14.53%
Optic Atrophy	21	12.20%
Strabismic Amblyopia	13	7.55%
Eviscerated One Eye	7	4.06%
Vascularised Corneal Opacity	4	2.32%
Macular Dystrophy	4	2.32%
Failed Retinal Detachment Surgery	3	1.74%

Table 3 Categories of Visual Disability:

Category (Depending on Visual acuity & fields)	Number OF Cases(n)	Percentage
CATEGORY - I (40%)	42	24.41%
CATEGORY - II (75%)	63	36.62%
CATEGORY III/ IV (100%)	31	18.02%
ONE EYED - (30%)	36	20.93%

Table 4 Age Wise Distribution

AGE IN YEARS	NUMBER OF CASES(n)	PERCENTAGE
1-10	25	14.53%
11-20	41	23.83%
21-30	35	20.34%
31-40	71	41.27%

DISCUSSION

Many surveys are going in india regarding the prevalence of blindness in the community. They provide us information about the causes and creates a role in health planning. Evindence based information is important to plan low vision care and rehabilition 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 may be useful to the government agencies to plan the strategies for rehabilition and prevention.

In our study, 172 patients analysed about the pattern of visual disability by gender, age, demography, category and causes.

Males were 64.53% and female were 35.46%, which is similar in study done by Sambuddha Ghosh et al(8), KavitaA.Dhabarde et al(9) and M G G Khan et al (2020) (10). In our study male candidate are more predominant than female, this can be related to the fact that males perform more outdoor jobs than female do, hence they are more in need of the benefits offered by disability certificate. As a result, more males apply for disability certificate.

Our study have even distribution among various age group but more prevalent (41.27%) in 31-40 years of age followed by 11 to 20 years age group (23.83%). People were under the age of 11 to 20 years which corresponds to the people seeking benefits in education. people belonged to the 21 to 40 years age group which corresponds to people utilising the benefits in seeking jobs. This shows that certification is sought for financial aid, work opportunities, and transportation benefits that are more likely to benefit young people. which is similar in study done by G. Ravi babu et al(11), Geetha et al(12).

Retinitis pigmentosa found to be a major cause (37 cases, 21.51%) of visual disability in young adults with involvement of both eye, Which is similar in study done by G. Ravi Babu et al(11) and Geetha et al(12).It is more predominant (28 cases, 75.67%) in the age group between 31- 40 years of age and only 5.40% (2 cases) found below 20 years of age. Out of 37 cases, 27 (72.97%) were male and 10 (27.02%) were females, indicating that males were affected more frequently than females.

Phthisis bulbi found in 16.27% (28) cases and is more predominant in the 31- 40 years of age group. Phthisis bulbi is more predominant in males (78.57%) than female (21.42%), which is similar in study done by Somen Mishra et al (2013) (13) and Vishal Wagh et al(14)

In our study congenital anomaly found in 14.53% cases, mostly 1-20yrs age group and slightly more predominant in female (56.00%) than males (44.00%). Microphthalmos, anophthalmos, and coloboma mainly found as congenital ocular anomalies. Which is similar to study done by J S Titiyal et al(15), and Punita Garg et al(16).

CONCLUSION

Results have shown that maximum number of congenital disease of eye and retinitis pigmentosa explains the need for genetic counselling as it is more common in young adults, might be connected to rising consanguinity and shortage of genetic counselling.

The right use of safety equipment such protective goggles or shields, face masks, etc. while working can reduce the likelihood of eye injuries. The level of ocular damage, the location, the size of the injury, the type of injury and the time between the accident and the start of treatment all affect the visual outcome.It is also important to raise awareness about getting treatment immediately following injuries. Trauma in younger population shows needs early intervention. The eye care services in rural areas should be strenghthened.

RECOMMENDATION

1. A Situational analysis of the cause of visual disability reveals the magnitude of problem, mating infrastructure with standards and identifies the gap.
2. Policy intervention are needed to protect the rights of groups made of people with various form of disability, civil society organisation and professional groups.
3. The economic development programme are needed to empower the community and not just concentrate on disease.
4. There is need for training for facility based or home based caregivers and interactions with the blind and visually impaired members of their community.
5. Quality of life of a blind should be improved through available, accessible, and affordable well maintained and sustained rehabilition services.

LIMITATION OF THE STUDY

Small sample size might be a limitation for the study.

RELEVANCE OF THE STUDY

1. Screening for the retinopathy of prematurity and diabetic retinopathy should be made mandatory.
2. Presence of corneal scar can be avoided by proper and timely use of medication along with proper health education.
3. Avoiding trauma can reduce the visual disability due to corneal scarring and infections in large extent.
4. Early diagnosis and treatment is required for disease like glaucoma.

AUTHORS CONTRIBUTION

All authors have contributed equally.

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CONFLICT OF INTEREST

There are no conflicts of interest.

DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

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