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**Ophthalmology** 

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# A STUDY ON CAUSES OF BLINDNESS AMONG PATIENTS SEEKING VISUAL DISABILITY CERTIFICATE IN A TERTIARY CARE HOSPITAL.

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**ABSTRACT** Aim To identify various causes of blindness among patients seeking visual disability certificate in a tertiary care hospital, Kakinada. Methods: It is a hospital based observational study done over a period of 2 months from May to June 2022. A group of 100 patients who came for visual disability certificate to GGH, Kakinada were studied. All these patients underwent proper clinical examination which includes general physical examination, systemic examination and ocular examination and all necessary investigations were done. Results: out of 100 patients studied 13% of cases were of congenital anomalies, 25% were of retinitis pigmentosa 4% were of phthisis bulb eye, 11.5% were of other retinal pathology, Optic atrophy in 11.5% cases, Retinal pathologies in 11.5% cases Corneal pathology in 7.5% cases, Amblyopia in 7% cases, Phthisis bulbi in 4% cases, Pathological myopia in 4% cases, Staphyloma in 1% cases, Empty socket in 0.5% cases Conclusion: Taking necessary preventive measures with the leading causes being identified can reduce the burden of visual impairment. Results in the study have shown a high number of cases of Retinitis Pigmentosa and congenital anomalies which explains the necessity for genetic counselling. High incidence of glaucoma suggests a requirement of creating awareness and education about the disease in the public. Avoidable causes (preventative and curative) of visual handicap were found in -- individuals who were with phthisis, corneal opacity, diabetic retinopathy, glaucoma, retinal detachment. Screening, early diagnosis and treatment is critical to prevent blindness from avoidable causes like diabetic retinopathy, glaucoma and retinopathy of prematurity. Creating vigilance about avoiding trauma to eyes by taking proper safety measures while driving and at work places is much needed. School children screening is a must to identify and treat refractive errors in childhood. Thus, quality of life of blind can be improved by early intervention.

# **KEYWORDS**:

### Introduction:

Blindness remains to be a highly prevalent and serious health problem in many countries. It imposes an adverse socioeconomic burden on the affected individual, their family and society, particularly in developing countries faced with the economic recession. India was the first country in the world to launch a 100% public funded program for the control of blindness.

### W.H.O DEFINITION(1)

VA of less than 20/400 ( $\leq 3/60$ ) AND/OR a visual field of no more than  $10^{\circ}$  around the central point of fixation in the better eye.

### NCPB&VIDEFINITION(3):

The definition of blindness under NPCB&VI has been modified in line with the definition given by WHO i.e.; —BCVA less than 20/400 (<3/60) in the better eye AND/OR limitation of field of vision to under 10° from the central point of fixation in the better eye. With the earlier definition of blindness (<6/60 in better eye) used by NPCB in the Ministry of Health and Family Welfare, the prevalence of blindness in India was being overestimated compared to other countries (4).

The uniformity in the definition of blindness across various regions of the world is a prerequisite for facilitating the collection of populationbased data for estimating global burden of blindness.

**Aim:** Purpose of this study is to identify various causes of blindness among patients seeking visual disability certificate in GGH, Kakinada.

**Methods:** It is a hospital based descriptive study done over 2 months from May to June of 2022. A group of 100 patients seeking for visual disability certificate to GGH, Kakinada were selected.

### Patients were subjected to:

- A detailed history of the ocular condition and its duration.
- Detailed family history, personal history, and history of systemic diseases and medications were noted.
- Clinical examination of the patient included a detailed general physical examination, systemic examination and ocular examination.
- · Visual acuity was recorded by Snellen's chart.
- Slit lamp bio-microscopic examination of anterior segment and detailed posterior segment evaluation i.e.; fundoscopy using

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Direct ophthalmoscope, Indirect ophthalmoscope, and 78D lens was done.

- B Scan Ultrasonography was done for cases in which posterior segment evaluation was not possible due to hazy media/ any pathology.
- Visual field testing and MRI/CT were done for patients only if needed.
- The results of these 100 patients were collected, tabulated and analysed statistically by single observer.
- A standard clinical proforma was used, Data on Various Causes of Blindness, percentage of disability, age, sex and socio demographic profile distribution was assessed.

The software Microsoft excel was used to store and structure the data for statistical analysis with software SPSS. Statistical analysis in the form of percentages was done.

# Results:

# Table 1. Age wise distribution

| AGE IN YEARS | NO. OF PATIENTS | PERCENTAGE |
|--------------|-----------------|------------|
| 0-10         | 6               | 6%         |
| 11-20        | 11              | 11%        |
| 21-30        | 13              | 13%        |
| 31-40        | 17              | 17%        |
| 41-50        | 21              | 21%        |
| 51-60        | 23              | 23%        |
| 61-70        | 8               | 8%         |
| 71-80        | 1               | 1%         |
| TOTAL        | 100             | 100%       |

### Table 2: Sex wise distribution

| SEX    | NO. OF PATIENTS | PERCENTAGE |
|--------|-----------------|------------|
| MALE   | 66              | 66%        |
| FEMALE | 34              | 34%        |
| TOTAL  | 100             | 100%       |

## Table 6: causes of visual disability

| CAUSES | NO. OF PATIENTS |     |       | PERCENTAGE |
|--------|-----------------|-----|-------|------------|
|        | BOTH            | ONE | TOTAL |            |
|        | EYES            | EYE | EYES  |            |

| Congenital anomalies    | 13  | -  | 26  | 13%   |
|-------------------------|-----|----|-----|-------|
| Retinitis<br>pigmentosa | 25  | -  | 50  | 25%   |
| Phthisis<br>bulbi       | 3   | 2  | 8   | 4%    |
| Other retinal pathology | 6   | 11 | 23  | 11.5% |
| Optic<br>atrophy        | 10  | 3  | 23  | 11.5% |
| Amblyopia               | 7   | -  | 14  | 7%    |
| Glaucoma                | 15  | -  | 30  | 15%   |
| Pathological<br>myopia  | 4   | -  | 8   | 4%    |
| Corneal pathology       | 5   | 5  | 15  | 7.5%  |
| Staphyloma              | 1   | -  | 2   | 1%    |
| Empty<br>socket         | -   | 1  | 1   | 0.5%  |
| TOTAL                   | 178 | 22 | 200 | 100%  |

### Discussion:

Visual disability has deep emotional, social and economic impact. Rehabilitation of these individuals needs multidisciplinary approach to provide timely support and improve the standard of life. Visual disability certification is recognized as a mean by which social services of visually disabled can be coordinated. Evidence-based information is vital to identify various etiologist of blindness so as to plan effective strategies to decrease the prevalence and provide low vision care and rehabilitation services.

This study followed the criteria set by the Government of India for disability certification. We had to exclude individuals with unilateral blindness, as both India and W.H.O. definitions of blindness rely upon the bilateral (better eye) causes of blindness.

Study was done on 100 patients seeking for visual disability certificate from May to June 2022, in the department of Ophthalmology, GGH, Kakinada.

### Age distribution:

In our study age ranged from 3-75 years. Mean age was 40.29 years. Most of them were within the cohort of 51-60years (23%). Patients within the age bracket of 21-60 years were significantly large in number (n=74, 74%) as compared to above 60 years(n=9, 9%) and below 20 years (n17,17%) age groups.

### Sex distribution:

In our study males were more compared to females. Among 100, 66 (66%) were male and 34 (34%) were female. male to female ratio was 1.94:1.

### Socio-economic background:

In our study most of the patients seeking visual disability certificate were from rural areas (59%) and of poor socio-economic background. Among them majority were illiterates 62 (62%) and the criteria for literacy in the study was if studied up to 10 standard or above or can read/write any one language. Out of 62% illiterates 59.6% were males and 40.3% were females and among 38% literates, 76.3% were males and 23.7% females.

### **Religion:**

In our study, out of 100 patients, 90 (90%) registered were Hindu by religion and 3 (3%) were Muslims and 7(7%) were Christians.

### Working Activity Status

In the present study, of 100 patients, 82 (82%) weren't working and only 18 (18%) were working which included studying, agriculture, business, self-employment, working at home etc. Among the 82 nonworking, 49(59.8%) were males and 33(40.2%) were females. And among the 18 working candidates, 17 (94.5%) were males and just 1 (5.5%) were female.

Among 82 non-working candidates, 20(24.4%), 20(24.4%), 42(51.2%) belongs to 40%, 75% and 100% category of visually disabled respectively and all 18 working candidates were in to 40% category of visually disabled.

# Causes of visual disability:

In our study, Retinitis pigmentosa was the foremost common cause of disability which include 25 patients (i.e., 50eyes 25%). Of these 25 patients, 17(68%) were males and 8 were females (32%) i.e.; M:F ratio was 2.1:1.

### Percentage of visual disability

In our study, the number of individuals certified with 40% disability were 37 (37%), 75% disability were 20 (20%) and 100% disability (category 3 and 4) were 43 (43%). M:F ratio among those certified with 40%, 75% and 100% disability were 2:1, 1.8:1 and 1.8:1. respectively.

### **CONCLUSION:**

Taking necessary preventive measures with the leading causes being identified can reduce the burden of visual impairment. Results in the study have shown a high number of cases of Retinitis Pigmentosa and congenital anomalies which explains the necessity for genetic counselling. High incidence of glaucoma suggests a requirement of creating awareness and education about the disease in the public. Avoidable causes (preventative and curative) of visual handicap were found in -- individuals who were with phthisis, corneal opacity, diabetic retinopathy, glaucoma, retinal detachment. Screening, early diagnosis and treatment is critical to prevent blindness from avoidable causes like diabetic retinopathy, glaucoma and retinopathy of prematurity. Creating vigilance about avoiding trauma to eyes by taking proper safety measures while driving and at work places is much needed. School children screening is a must to identify and treat refractive errors in childhood.

Men are more common beneficiaries when put next to women showing gender bias. Gender-based inequality for getting visual disability certificates should be minimized through awareness and education of people.

Quality of life of the blind should be improved through available, accessible and affordable well-maintained and sustained rehabilitation services. Benefits provided via visual disability certificate and encouraging low vision aids (LVA) and Braille classes for education can play a pivotal role in rehabilitation of such patients.

On one hand, increase in ophthalmic care and public education to minimize the avoidable blindness and on the other hand, strategies to rehabilitate the individuals suffering from the unavoidable blindness; is the key to reduce the burden of blinding eye diseases on the society.

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# Nil

### **Conflicts of interest:**

There are no conflicts of interest

### Ethical issues:

Approved by ethics committee

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