A STUDY ON VISUAL IMPAIRMENT AND FUNCTIONAL NEED ASSESSMENT OF PATIENTS ATTENDING OUTPATIENT CLINIC AT A REGIONAL EYE HOSPITAL FOR VISUAL HANDICAP CERTIFICATES

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ABSTRACT

BACKGROUND

Blindness is one of the major health problems in India. It affects not only the individual but also his entire family and society. Some ocular diseases are treatable; others are not. Non-treatable causes lead to permanent visual handicap. Until recently, blind/vision-impaired people did not have proper education, counselling and job opportunities to integrate themselves into the society. We wanted to evaluate the causes of visual impairment, conduct disability assessment, and assess the functional needs of blind/vision-impaired people.

METHODS

A total of 350 patients attending the outpatient department at Regional Eye Hospital, Visakhapatnam, Andhra Pradesh for visual impairment certificates were taken randomly for the study. The percentage of disability was calculated based on the government guidelines for the evaluation of visual disability and procedure of certification.

RESULTS

Among the 350 patients, majority were 100% blind (category 3 & category 4). 70 patients had visual impairment of 40%, followed by 62 patients who are one eyed. The cause of blindness was hereditary in 105 cases, followed by disease and infection in 87 cases and accident in 77 cases. Majority of them were advised assistive and augmentative devices. Blind sticks and Low Vision Aids were advised to 175 patients and Braille equipment for 130 patients.

CONCLUSIONS

Assessment of visual impairment, identification of major causes, advising assistive and augmentative devices, and fulfilling the general needs of visually challenged persons, can bring a remarkable change in their life styles and thereby enhance their contribution to the society.

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BACKGROUND

India has a large blind population. According to the International Agency for the Prevention of Blindness (IAPB) by the year 2015, India had a prevalence of 4.63% of Moderate and Severe Visual Impairment with visual acuity <6/18 to ≥3/60.¹ Visual impairment disability in India is categorized based on its severity. Percentages are accorded as proposed by a subcommittee constituted by the Ministry of Social Justice and Empowerment in 1999. The categories of visual disability are notified in the Gazette of India, extraordinary, 2001 and are followed all over the country.² There has been an evolutionary process in changing attitudes regarding the disabled and blindness around the globe.³ In olden days the attitude was of disregard, rejection, isolation, and abuse, however, recently the attitude changed to pity and benevolence.⁴

Currently, there is a positive attitude towards the disabled including the blind and this becomes more important considering the fact that country incurs a huge expenditure directly in supporting and indirectly through loss of economic productivity of the disabled.⁵ Disability is any restriction or lack (Resulting from impairment) of ability to perform an activity in the manner or within the range considered normal for a human being. Handicap is a disadvantage for a given individual resulting from an impairment or disability that limits or prevents the fulfilment of a role that is normal (Depending on age, sex, social and cultural factors) for that individual. The concept of handicap also includes the role of the society in creating barriers and limiting opportunities for people with disabilities.⁶

Aims and Objectives

1. To evaluate causes of visual impairment
2. Conduct disability assessment
3. Assess the functional needs of blind/vision-impaired people at our hospital.
4. Analyse number of assistive and augmentative devices distributed to the visually handicapped persons
5. To evaluate counselling and guidance given to blind/vision-impaired people at our hospital.

METHODS

We performed a retrospective descriptive study. Patients obtaining visual disability certificates at our hospital during

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Routinely, the data related to the purpose of the visual handicap certification is mentioned in the blindness register of the hospital. The proforma⁷ issued by the Government of Andhra Pradesh for visual impairment assessment and functional need assessment was followed in this study and is shown below. The individuals were provided with unique ID Number (17 Digits) by the Government. The data were entered into database and analysed using MS excel software.

Figure 1. Proforma for Assessing the Visual Impairment

ID Number (17 Digits): <div style="border: 1px solid black; height: 15px; width: 100%;"></div>																											
Functional Need Assessment for Visual Impairment Please tick in the appropriate box(es) if there is need of any of the following services																											
Visual Impairment Specific needs: (Tick in the appropriate box)	General needs (Tick in the appropriate box(es) if there is need of any)																										
I. Surgery Please Specify the type of surgery:	I. Early Education Service (For Children Below 5 Years) <div style="border: 1px solid black; height: 20px; width: 100%;"></div>																										
2. Assistive & Augmentative Devices <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 80%;"></th> <th style="width: 20%; text-align: center;">Tick(✓)</th> </tr> <tr><td>i. White Cane/Blind Stick</td><td></td></tr> <tr><td>ii. Braille Equipments</td><td></td></tr> <tr><td>iii. Arithmetic Frames/Abacus</td><td></td></tr> <tr><td>iv. Low Vision Aids (Spectacles, Magnifiers)</td><td></td></tr> <tr><td>v. Speech Synthesizer</td><td></td></tr> <tr><td>vi. Braille Short Hand Machines/ Typewriters</td><td></td></tr> <tr><td>vii. Talking Watch/Calculator</td><td></td></tr> <tr><td>viii. Any ADL Equipment</td><td></td></tr> </table>		Tick(✓)	i. White Cane/Blind Stick		ii. Braille Equipments		iii. Arithmetic Frames/Abacus		iv. Low Vision Aids (Spectacles, Magnifiers)		v. Speech Synthesizer		vi. Braille Short Hand Machines/ Typewriters		vii. Talking Watch/Calculator		viii. Any ADL Equipment		2. Education Services (Tick(✓) only one) <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 80%;"></th> <th style="width: 20%; text-align: center;">Tick(✓)</th> </tr> <tr><td>I. Home based education</td><td></td></tr> <tr><td>II. Special school</td><td></td></tr> <tr><td>III. Inclusive education</td><td></td></tr> </table>		Tick(✓)	I. Home based education		II. Special school		III. Inclusive education	
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Figure 2. Proforma for Assessing the Functional Needs in Visually Impaired

RESULTS

In 350 cases analysed, 119 patients (34%) were in 16-40 years age group, 101 patients (29%) in 41-65 years age group, 70 patients (20%) in paediatric age group and senior

citizens constituted 17%. Males were 57% and females 43% in the study. 66% were from rural background and 34% from urban areas. 28% were farmers, 22% were workers and 20% were employees. Hereditary causes like retinitis pigmentosa

were found in 30% of cases followed by diseases and infections in 25%, accidents in 22% and congenital causes were found in 18% of the cases. 68% of the cases had permanent, non-progressive, not likely to improve type of disability. About 50% of the cases had 100% disability (28% in category 4 and 22% in category 3). About 18% of patients had visual impairment in one eye.

Surgery was advised in 30% of cases. Majority of them had undiagnosed cataracts. Cataract surgery was essential for

both best corrected visual acuity assessment and posterior segment analysis. Blind sticks and Low Vision Aids were advised to 175 patients and Braille equipment for 130 patients. 28 % (98) of the cases were advised vocational training of which 30% was for employment in public/private sector and 70% for self-employment. The main purpose of obtaining the certificates was for financial reasons (54%) in this study. The results are displayed in the following graphs.

Graph 1

Graph 2

DISCUSSION

India which is the second largest country in the world in terms of population unfortunately also has large number of blind people. Several factors play major role for large prevalence of blindness in our state⁸. Various ocular pathologies can cause visual impairment. This can lead to disability and finally handicap for the given individual. Visually handicap people have to face huge challenge to survive in the society.

Visual impairment in general affects the following four main functional areas⁴:

1. Orientation/Mobility,
2. Communication,
3. Activities of Daily Living (ADL) and
4. Sustained Near Vision Task.

Early intervention and special education can balance the negative effects of visual impairment. In many cases environmental adaptations, vision training, follow up for ensuring compliance, coordinating with stakeholders, removing myth and misconception and counselling would help in empowering the individual and/or enhancing functional residual vision.

The effect of low vision is not same for all people and the following assessment needs to be compiled for each individual before embarking upon the decision of assistive devices.^{4,9}

- Extent of vision: Near and distance visual acuity.
- Size of the visual field [if relevant].
- Effect of light and glare.
- Extent of recognition and naming of colours.
- Extent to which contrast affects their activities.

- Extent of use of vision for different activities and purpose in the environment.
- Extent to which a person sees and recognizes an object depends, amongst other on: Familiarity of the object; light; size; distance; contrast; colour; detail or simplicity of the object.
- Age, socioeconomic conditions, literacy status, and level of motivation.

In this study, majority of the patients were in the age group of 16-40 years (34%) and 41-65 years (29%). Patil et al¹⁰ in their study had similar results. More registrations in these age groups is probably related to requirement of visual handicap certification for educational and employment purposes. Males outnumbered females in the study. Joshi et al¹¹ had similar observations. This is probably due to increased outdoor activities of males or males may have more need of certification. Rural population was more than urban possibly due to more prevalence of avoidable blindness in rural India and probably due to introduction of populist pension schemes by various governments. Farmers and labourers were registered more in the study as their occupations are more hazards prone. Hereditary causes like retinitis pigmentosa, various ocular diseases and trauma were major causes of disability in this study. Other similar studies reported disease specific causes for visual impairment. Most of the patients in this study had permanent, non-progressive, not likely to improve condition of disability. Bunce et al¹² in her study had more number of patients with permanent visual impairment and no ongoing treatment.

Majority of the cases had 100% disability probably ours being a tertiary eye care centre. Main purpose of obtaining this certificate in my study is for pension purpose. Patients

who had undiagnosed cataracts underwent surgery at our institute. Depending upon the functional need blind sticks, Braille equipment, Low vision aids and ADL¹³ (Activities of daily living) equipment were advised. General needs of the patients like education, vocational training, counselling and guidance were addressed depending upon the situation.

CONCLUSIONS

Visual impairment is a big challenge to the individuals, their families, and to society as a whole, considering the fact that India has huge blind population.¹⁴ We need to focus on genetic counselling and discourage consanguineous marriage to prevent congenital anomalies. School children screening is a must to identify and treat refractive error and vitamin deficiencies¹⁵ in those children. Road safety rules should be strictly implemented as road traffic accidents are becoming one of the major causes of blindness.

These types of studies¹⁶ help in improving visual impairment assessment and functional need assessment for the blind people. They also help us to know various sociodemographic factors causing blindness. Diseases causing blindness in the community can also be analysed.

According to a guideline by the 'Ministry of Social Justice and Empowerment' of 'Government of India', the minimum degree of disability should be 40% for an individual to be eligible² for any concessions or benefit. Reviewing disability guidelines from time to time, and proper assessment help the patients to get accurate visual handicap certificates and thereby benefits linked to them.

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