Epidemiology of Disability due to Blindness in Prakasham District of Andhra Pradesh, India

D. Babu Rao[1], C. Bala Krishna Chadaram[2]

ABSTRACT

Introduction: Blindness is one of the important causes of disability and it is a public health problem worldwide. It is a great concern of the day. Government of India (GOI) is taking several measures to protect the disabled people through various schemes. Rehabilitation Council of India provided legal framework to protect the disabled (RCI). SADAREM (Software to assess disability for Access, Rehabilitation and Empowerment) is a programme to assist the disabled. Empowering the disabled, rights were given to local bodies. The cases of ophthalmic disability were mobilized and referred to tertiary center of the district. The cases were examined by the body constituted for the same. The objective of the present study is to know the grading of disability and reasons for disability

Materials and Methods: The total number of subjects studied during 2012-13 was 1009 cases. The study was conducted at Rajiv Gandhi Institute of Medical Sciences, Prakasham District. The cases referred from all over the district were clinically examined with various parameters. The data collected through SADAREM was analyzed for knowing the causes of blindness and disability. The patients attended tertiary care hospital in the district during 2012 to 2013 under SADAREM Programme was compiled in excel and data taken for the study.

Results: 23 subjects (2.28%) among 1009 only free from visual disability and rest of them with disability of various grades. 280 (27.75%) of the referred patients were completely blind. Corneal pathology in the present study emerged as major cause of disability (15%) and next commonest cause is lens pathology (10%). 4% of cases were with aphakia. Eviceration was done in 13 eyes.

Conclusion: 90% of the referred subjects of district were suffering from ophthalmic disability. 20% of pathology is due to hereditary and congenital. Corneal pathology is the major cause of disability and followed by phythysisbulbi and refractive errors. One out of every 10 is with pathology in retina due to various causes. Among the referred subjects more 1% with enucleated eyes. Regional studies on causes of disability due to eye conditions will be helpful to strengthen eye care services to reduce burden of disability.

Keywords: GOI, SADAREM, Disability, RCI

INTRODUCITION

Disability due to blindness and impairment of vision is a growing concern. The estimated number of this disability is for 2020 is 322 million.[1] Overall global prevalence is 0.7% but gross variations have been observed in this figure. The estimated disabled due to blindness in India are 15 million.[2] The prevalence of blindness in certain states like Maharashtra, Odissa, Tamilnadu and Uttar Pradesh is ranging from 1.5 to 1.99. This has gone up to more than 2 in J and K, Madhya Pradesh and Rajasthan states.[3]

68.8% of global blindness is attributed to three most common conditions, cataract, glaucoma and age related macular degeneration.[4] 80% of total blindness is in above 50 years age group. According to increased age of population, the proportion of blindness is also increasing. Impaired vision and blindness cause significant effect on quality of life and it is both social and economic loss the individual and his family and to the nation.

In depth study of causes of blindness region wise is necessary to strengthen ophthalmic services in the region. Eye clinics, PHCs, district level and tertiary care level hospitals are dedicated to provide broad spectrum of eye care services. Careful analysis of this data will be useful for better planning and management of limited resources. Governments with the support of private and public partnership are trying to uplift the downtrodden people. The present study is an effort to analyze the data of a tertiary care hospital where the PWDs (People with disabled) were mobilized and for certification to provide social security pensions.Objectives of the research were to know the causes of ophthalmic disability, to identify the high risk groups of community and to assess burden of disability in proportion.

MATERIAL AND METHOD

The study was conducted in 2012-13. Place of study is a ter-

[1]Associate Professor, Department of Ophthalmology, RIMS, Ongole, Prakasham District, AP, [2]Professor, Department of Community Medicine, Malla Reddy Medical College for Women, Suraram, Qutubullapur Mandal, Hyderabad, RR District, Telangana State, India

Corresponding author: Dr. D. Babu Rao, Associate Professor, Department of Ophthalmology, Rajiv Gandhi Institute of Medical Sciences, Ongole, Prakasham District, Andhra Pradesh, India

How to cite this article: D. Babu Rao, C. Bala Krishna Chadaram. Epidemiology of disability due to blindness in prakasham district of Andhra Pradesh, India. International Journal of Contemporary Medical Research 2016;3 (1):271-274.

tiary care hospital in Prakasham District of Andhra Pradesh. The study subjects are the PWDs (People with disability) mobilized from various parts of the district to tertiary care level hospital located at district head quarters. A sample size of 1009 was taken for the study. The referred subjects were examined under similar conditions and with standard guidelines and protocol provided the Government. SADAREM (Software to assess disability for access Rehabilitation and empowerment) was used to collect the data and for the final certification of disability. The subjects were examined by the concerned specialists appointed by the hospital authorities. The author was part of the team.

RESULTS

The total number of patients attended the hospital for certification was 1009. 61% of them were males. 24% of the attended patients were from SC and ST communities and 37% of them were from back ward community. 59% of the patients were below the age of 50 years.

71% of the attended patients were married. 69% of them were without any employment and another 25% were depending on daily wages. 80% of patents attended were illiterate. 28% of the patients are with complete blindness.

Table 1 shows distribution of study group on literacy status wise. Majority of the group under study was illiterate 821 (81.37%). 121 (11.99%) and 30 (2.97%) were literate with primary and 10th standard. 19 (1.88%) studied up to intermediate. 2 of the patients studied diploma in professional course. 13 (1.29%) were having graduation. Only 2 subjects had post graduate qualification.

Table 2 shows distribution of study group as per degree of ophthalmic disability as per the guidelines of GOI. Certification was done by the concerned specialty. They were classified according to degree of disability 5 groups. 376 (37.26%) of the study group classified as disability of 40%. 280 (27.75%) of the referred subjects to the tertiary care hospital for certification were with 100% blindness as per the criteria of GOI. 112 (11.1%) were having 75% disability. Among the referred only 23 (2.28%) were with normal vision.

Table 3 shows distribution of subjects as per pathology of anatomical site of eye ball. Among the studied subjects, in both the eyes the pathological findings were studied by the specialists and classified according to anatomical site of pathology. 133 (12.19%) and 109 (10.8%) in both left and right eyes are free from pathology and normal in their findings. Corneal pathology was emerged out as a major problem in both the eyes 153 (15.16%) and 146 (14.47%) in left and right eyes. Phthisis bulbi was observed in 169 (16.75%) and 177 (17.54%) in left and rights eyes. These are the patients with soft eye, shrunken eye Opacity of lens was observed in 91 (9.02%) 106 (10.51%) in both the eyes. The prevalence of refractive errors in both the eyes was 83(8.23%). Aphakia was observed in 36 (3.57%) and 57 (5.65%) in left and right eyes. Prevalence of Glaucoma was 14 (1.39%) and 10 (0.99%) in left and right eyes. Evicertion was done in 9 (0.89) and 4 (0.4%) in left and right eyes. 3% of studies subjects were suffering with infection.

Among the referred patients from all over the district of Prakasham, 133 and 109 of both left eye and right eye without any ophthalmic disability and their vision is normal. Corneal pathology is contributing significantly for disability. In both the eyes pathology due to cornea is around 15%. Tandon et al and Rekhi et al conducted two studies of hospital based in 2010 and 1991[5] got the similar type of results of 15.24% of ophthalmic disability is due to corneal pathology. The studies were conducted at New Delhi and Jaipur, India. Lenticular opacity was observed in around 10% of the cases. In the examination, phthysisbulbi is the commonest condition observed. In the present study, 8% of the patients are having refractive errors. Prevalence of glaucoma is around 1%. 4-6% of the patients had aphakia due to surgical inter-

Literacy Status	No	%
Illiterate	821	81.37
Primary education	121	11.99
10Th Standard	30	2.97
Intermediate	19	1.88
Diploma	2	0.2
Graduate	13	1.29
PG	2	0.2
Total	1009	100
Chi Square=20.9; P<0.01		

Table-1: Distrribution of subjects literacy statuswise

Degree of oph. Disability	No	%
Zero	23	2.28
20	12	1.19
30	206	20.42
40	376	37.26
75	112	11.1
100	280	27.75
Total	1009	100
Chi Square=47.9; P<0.01		

Table-2: Distribution of subjects degree of disabilitywise

Morbidity	LT Eye	%	RT Eye	%
Nil pathology	133	12.19	109	10.8
Corneal pathology	153	15.16	146	14.47
Lens	91	9.02	106	10.51
Phthisis bulbi	169	16.75	177	17.54
Glaucoma	14	1.39	10	0.99
Retina	4	0.4	4	0.4
Other	291	28.84	276	27.35
Infections	26	2.58	32	3.17
Refraction	83	8.23	83	8.23
Aphakia	36	3.57	57	5.65
Eviceration	9	0.89	4	0.4
Total	1009	100	1009	100
Chi square=28.2; P<0.01				

Table-3: Morbidity according to anatomical site of eye

vention for cataract. Eviceration was done for 9 patients due to various reasons.

Table 4 shows distribution of study group according to disability of eye. 613 (60.75%) of the males were referred for ophthalmic disability to tertiary care hospital. 396 (39.25%) of women consulted for their ophthalmic condition.

Sex	No	%
Male	613	60.75
Female	396	39.25
Total	1009	100
t=0.10; P>0.0		

Table-4: Distribution of subjects disability wise

DISCUSSION

The present study was conducted in Rajiv Gandhi Institute of Medical Sciences, Ongole, Prakasham District of State Andhra Pradesh during December 2012 to December 2013. During that period, 1009 subjects were taken into the study to know the ophthalmic disability of the patients referred from all over the district under SEDAREM Programme to provide benefit to the disabled persons certified by the institution according to their degree of disability.

Among the referred subjects, 61% males and 39% were females. Mostly there are from socio-economically from backward community (37%) and open category was (34%). 22% of the study group belongs to ST community and 3% each of both ST and Minority groups. In the study group, 59% under the age of 50 years and the rest of them above 50 years age. 72% of the study group was married. 27% were not married and around 1% either divorced or widow/widower. 70% of the referred were unemployed. 25% of the patients were daily wage earners. The remaining was doing petty business.

81% of the study group was illiterate. Even among the literate group, those are having primary education 12%. Rest of them were having high school and above education.

28% of the study group was with 100% blindness on examination. 11% of the study group had 75% of ophthalmic disability.

The major reasons for ophthalmic disability were in the present study, phthisis bulbi. In this condition, complete blindness with loss of structure of eye ball and shrinking of the eye ball was observed (18%). Next commonest condition was corneal blindness (14%). Opacity of the optic lens was observed in(11%) of cases. The prevalence of glaucoma was (1%). Refractive errors were in 8% of patients. Aphakia due to various causes was observed in (6%) of cases. Eviceration of eye ball was done for (0.4%) of cases.

In the estimations done in various countries of the world by Serge Resnikoff et al[5], 2004, cataract emerged as commonest cause of ophthalmic disability. Second common cause in their study was glaucoma. They observed in their study altering trend of disease burden of eye conditions in both developed and developing countries. Age related macular degeneration is the third common cause in the study done by them.

In a study conducted by A. Reidy, D.C. Minassian et al[6] in 1998, observed 30% of the examined population of above 65 had visual impairment in the general practice (<6/12). 72% of the condition was potentially remediable. 21% of them had vision <6/60 in one or both the eyes. Prevalence of cataract was 30%. 88% of the patients were away from health services. In their study they found age related macular degeneration 8% and 3% with glaucoma.

A study conducted by Hyman L et al[7] observed cataract is the commonest cause and it is followed by age related macular deneration. Third and fourth causes are glaucoma and diabetic retinopathy.

The study conducted by David A et al[8] found common presenting symptoms of four diseases and they were age related macular degeneration, glaucoma, cataract and Diabetic retinopathy.

The study conducted by TY Wong et al[9] found different eye conditions in different countries. In 1994, Glaucoma and cataract were the major causes of disability due to eye condition. In Nepal cataract was the main cause. In China, the major causes were cataract and refractive errors. In the same study, a study conducted in Andhra Pradesh to know the prevalence of refractive errors found the prevalence of myopia 19.4%, hyperopia 9.8% and astigmatism 12.9%. Prevalence of glaucoma (POAG) 1.6% and (PACG) 1.1%. Prevalence of retinopathy studied in Andhra Pradesh in 1999 was 22.4% through clinical examination. In Palakka it was in 2002 26.2%. In the study conducted by Aravind Eye Hospital in 2004 found 10.5%. Through photography, the prevalence of retinopathy in Chennai urban and rural Epidemiological study found 5.1%.

In all the above studies, several variations have been observed both geographically and socio-economic development of the regions. Periodic evaluation, continuous monitoring, population and hospital based studies give valuable information to strengthen ophthalmic eye services.

CONCLUSION

90% of the referred subjects of district were suffering from ophthalmic disability. 20% of pathology is due to hereditary and congenital. Corneal pathology is the major cause of disability and followed by phythysisbulbi and refractive errors. One out of every 10 is with pathology in retina due to various causes. Among the referred subjects more 1% with enucleated eyes. Data from various levels through proper analysis will be helpful to establish treatment centers and timely guidance to needy to avoid or minimize disability due to eye conditions in the community.

REFERENCES

1. Thylefors et al, Blineness, Vitamin A deficiency and Trachoma, Bulletin of World Health Orgnization 1995:73:115-121.

2. Ramesh Verma, PradeepKhanna, VarunArora et al,.The National Programme for control of Blindness in India, The Australsian Medical Journal. 2011:4:1-3.
3. G. Venkata S Murthy, S.K. Gupta, D. Bachani, R.Rose, N.John et al,Current estimates of Blindness in India. British Journal of Ophthalmology 2005;89:257-260.
4. S.Reskinoff, D. Pascolini, SP Maroiotti et al,Global Magnitude of visual impairment caused by uncorrected refractive errors in 2004, Bulletin of World Health Organization 2008;86:63-70
5. Serge Resnikoff, Donatella Pascolini, Daniel Etya'ale, Ivo Kocur, RamachandraPararajasagaram, Gopal P. Pokhare, Silvio P. Mariotti et al, Global Data on Visual Impairment in the year 2002; Bull World Health Oran 2004: 82;11.
6. A. Reidy, D.C. Minassian, G. Vafidis, S. Farrow, J.Wu, P.Desai et al,Prevalence of serious eye disease and visual impairment in a north London Population: Population based, cross sectional study, BMJ 1998;316:1643
7. Hyman L et al,Epidemiology of eye diseases in the elderely, Eye (Lond), 1987;1; 330-41
8. David A. Quillen MD, Pennsylvania State University College of Medicine, Hershey, Penselvania, Am Fam Physician,, Common causes of vision loss in elderly patients, 1999;60:99-108.
9. T Y Wong, S-C Loon & S M Saw,Epidemiology of age related eye diseases in Asia, Br J Ophthalmol.2006;90:506-511.
10. Tandon et al and Rekhi et al. Magnitude and causes of corneal blindness in India (hospital –based studies): Tandonet, Indian Journal of Community Medicine 2013;38:198-206.

Source of Support: Nil; **Conflict of Interest:** None

Submitted: 04-12-2015; **Published online**: 25-12-2015