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BLINDNESS AND VISUAL IMPAIRMENT IN DELHI REGION

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ABSTRACT

Introduction: Prevalence of blindness has been very much increased in developed countries like India nowadays. Amongst the causes of blindness, many causes are preventable by routine eye check-up even at primary health centre. Therefore regular eye check-up is the need of time in India. Rapid assessment methods for blindness (RAAB) are recently implied for fast evaluation and epidemiological analysis of blindness in particular region and according to that, a strategic plan can be made to cope with these conditions.

Method: We applied same RAAB method to analyse the prevalence of blindness and visual impairment in 5000 people of more than 50years of age residing in Delhi region as a cross sectional study.

Results: Most number of cases were from age group between 50 years to 59 years (47.21%). The mean age was 57.2 yrs. Cases were slightly more in male sex. 751 cases were having vision acuity of 3/60 and below. Amongst the causes of blindness, cataract was most common affecting 60.95% cases having vision acuity of <3/60 and 72.98% cases having vision acuity of <6/60. An alarming high prevalence of diabetic retinopathy was found compared to studies done in other regions previously.

Conclusion: Most of the causes of blindness seen in our study are preventable if proper awareness and medical facilities for regular eye check-up and treatment.

Key Words: Blindness, RAAB, Delhi.

INTRODUCTION

There have been many surveys done regarding prevalence and causes of blindness across different states of India, but they had data from a single district in each state or a region and there are vast differences amongst the population and services amongst the well-developed regions like Delhi & other poorly developed rural regions. Eye care services are negligible in rural regions but people in Delhi region are well educated & aware of eye-health. Here by we tried to map out the blindness pattern in Delhi region at Dr. Ram Manohar Lohiya Hospital using the extended RAAB (Rapid Assessment for Avoidable Blindness) methodology.

The main aim of this study was to estimate the prevalence and causes of avoidable blindness and visual impairment in people aged 50 and above.

METHODS

With the clarion call for the elimination of avoidable blindness by 2020, rapid assessments have evolved to include all causes of avoidable blindness like cataract, refractive errors, trachoma and other causes of corneal scarring [5]. Stratified cluster random sampling was used for the survey. The sampling universe consisted of all those who were living in the Delhi. 5000 individuals aged

50+ were examined during year 2013. Clusters of 50 people who were 50 years and above were selected with probability proportionate to size, using a multistage cluster random sampling method. A total of 100 clusters were covered, 50 individuals aged >50 years were examined in each cluster. Total numbers of subjects diagnosed with visual impairment were 4172.

RESULTS

Table 1: Age and Sex wise distribution of sample population

Age group	Male (%)	Female (%)	Total (%)
50-59	1034 (49.19%)	936 (45.21%)	1970 (47.21%)
60-69	633 (30.11%)	696 (33.62%)	1329 (31.85%)
70-79	305 (14.50%)	383 (18.50%)	688 (16.49%)
80-89	99 (4.71%)	41 (1.98%)	140 (3.35%)
90+	31 (1.47%)	14 (0.68%)	45 (1.07%)
Total	2102 (100.00%)	2070 (100.00%)	4172 (100.00%)

Table 2: Presenting vision

Vision	Frequency	%
Can see 6/18	2002	48.01
Cannot see 6/18 but can see 6/60	1418	33.98
Cannot see 6/60 but can see 3/60	459	11.00
Cannot see 3/60 but can perceive Light.	167	4.01
No light perception (PL-)	125	2.99
Total	4172	100

Table 3: Causes of Blindness

Causes of Blindness	<3/60 N (%)	<6/60 N (%)
Cataract	178 (60.95%)	335 (72.98%)
Phthisis/globe abnormality	7 (2.39%)	6 (1.30%)
Corneal pathology	13 (4.45%)	14 (3.05%)
Glaucoma	21 (7.19%)	17 (3.70%)
Diabetic retinopathy	52 (17.80%)	42 (9.15%)
Older corneal scar	9 (3.08%)	21 (4.57%)
Other post segment causes	2 (0.68%)	3 (0.65%)
Other	10 (3.42%)	21 (4.57%)
Total	292 (100%)	459 (100%)

The mean age was 57.2 yrs with 50.38% males and 49.61% females.

Amongst those examined, 2002 (48.01%) had visual acuity (VA) >6/18, 1418 (33.98%) had VA 6/60-<6/18 (visual impairment), 459(11.0%) had VA <6/60-3/60 (severe visual impairment) and 292 (7.0%) had VA <3/60 (blindness by WHO standards).

Causes of presenting VA <6/60 had cataract in 72.98%, diabetic retinopathy in 9.15%, old corneal scars in 4.57% and glaucoma in 3.70%.

DISCUSSION

The most common cause of visual impairment was refractive errors, but when age groups were separated into decades, it was only the commonest cause in age group 50-59 yrs. The most common cause in older age-groups was cataract. Overall, cataract remains the main cause of blindness (72.98%), lower than that reported by the RAAB India study at 77.5%. This was immensely important as cataract has been recognized as the commonest cause of blindness and severe visual impairment in India[6-18]; while refractive errors were the main cause of visual Impairment (44.5%).[1] However, as the age advances the age groups of 70-90+ shows a different pattern of visual impairment i.e. posterior segment disease, age related macular degenerations, corneal opacities, uncorrected aphakia and other cataract surgery related complications being more common. The latter may presumably be because of faultier cataract surgery techniques and longer follow up duration. Among these the avoidable causes of blindness are cataract, refractive errors, surgical aphakia, cataract surgery.

An alarmingly high prevalence of blindness due to Diabetic Retinopathy i.e. 9.15% was recorded. In previous population based studies from India, Diabetes was the cause for <1% blindness.[1][3][4] India is now being recognized as global capital of diabetes and unlike in past, it has now become the disease of masses. The urban population is showing a steep high prevalence of diabetes and this study demonstrates this fact. There is a need for services to diagnose and treat diabetic retinopathy to be integrated into general medical services.

In this study the gender disparity in eye care uptake was not evident at all. Both the men and women did not show significant difference in prevalence of blindness & visual impairment. However the pattern of severe visual impairment & blindness (<6/60 in the better eye) was higher among females (9.2%) compared to males (6.5%). This may be due to ignorance and late diagnosis of actual pathology amongst women. The spectacle usage as well as the cataract surgery coverage was similar in both men and women.

The percentage of population who were having near vision spectacles or any spectacles was high

(53%) in this study compared to studies from Andhra Pradesh (29%). The 94% (2582) of subjects did not have N_6 vision, only 6% (165) subjects had near vision of N_6 with glasses. So while the need for refractive services is there, it has not been matured by service delivery.

67% of cataract operated patients had presenting vision 6/18 and better, below the World Health Organization's norm of 80%. The poor outcome (<6/60) was 11.3% compared to the permissible 5% by WHO norms.[2]

CONCLUSION

With proper awareness and medical facilities for regular eye check up and treatment, the morbidity of blindness & visual impairment can be lowered. There is a need for services to diagnose and treat diabetic retinopathy to be integrated into general medical services especially in urban regions.

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