



## CURABLE BLINDNESS AND ITS IMPACT ON ELDERLY AND WOMEN IN INDIA

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**Abstract**

Avoidable blindness is a significant public health problem in India. Nationally representative RAAB surveys (Rapid Assessment of Avoidable Blindness) are being conducted periodically in the country to know the current status of blindness in the country.

Recent studies have shown that poverty is an exacerbating and often accountable factor in the incidence of disabling conditions, including visual impairment. Recent estimates from the World Health Organization indicate that 90 per cent of all those affected by visual impairment live in the poorest countries of the world.

India is home to one-fifth of the world's visually impaired people and therefore, any strategies to combat avoidable blindness must take into account the socio-economic conditions within which people live. This paper looks at the prevalence and correlates of falls, multiple falls, and injuries, focusing on visual impairment among the older adult and elderly population in India.

**Key words:** Blindness, India, Poverty

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**Introduction:**

Disability of any kind has an impact on well-being, be it social, emotional or economic. Visual impairment too has a socioeconomic dimension. On the one hand, it can place the visually impaired person at risk of losing access to any means of livelihood and independent living. On the other, persons from socio-economically deprived and marginalised groups are more likely to hurt from situations that could lead to loss of vision.

Worldwide, at least 2.2 billion people have a vision impairment, and of these, at least 1 billion people have a vision impairment that could have been prevented or is yet to be addressed. The definitions of blindness have evolved over the years internationally and in India.

Over the past three decades vision loss due to infectious

causes like trachoma has significantly reduced, while non-infectious chronic eye diseases account for a greater percentage of blindness and vision impairment. Cataract continues to be the maximum important cause of blindness, contributing to 65% of blindness. Most of these topics are in the elderly. The high occurrence of vision loss at older ages, and its impact on health, wellbeing, and existing inequities are a cause for concern, and will grow as India's population ages.

There have been constant efforts in the last two decades towards drop in the prevalence of avoidable blindness in India, especially by the not-for-profit eye care organizations. There is a nearly 50% decrease in vision impairment in 2020 from 2010 estimates. The prevalence of blindness has reduced from 1% to 0.36%. Over the past three decades vision loss due to infectious causes like trachoma has significantly reduced, while



non-infectious chronic eye diseases account for a greater amount of blindness and vision impairment. Cataract continues to be the most important reason of blindness, contributing to 65% of blindness. Most of these subjects are in the elderly.

There is a crucial need to reinforce strategies that will equitably provide eye care services to people with vision impairment as they age. Such an attitude is consistent with the objectives of the UN Decade of Healthy Ageing, which seeks not only to promote strong ageing, but also to lessen imbalances related to aging.

India has applied a series of active actions in its ongoing National Program for Control of Blindness and Visual Impairment (NPCB&VI) to combat the situation, and it has caused in a major decline in prevalence of blindness over the previous few decades.

Periodic updates in current estimates and reasons of blindness and visual impairment are essential to evaluate the efficiency of ongoing public health policies and provide a comprehensive basis for development of future approaches and their effective application.

The Rapid Assessment of Avoidable Blindness (RAAB) has been developed as a simple and rapid survey methodology that can offer data on the prevalence and causes of blindness.

RAAB was developed by Hans Limburg working with the International Centre for Eye Health, first as the Rapid Assessment of Cataract Surgical Services in 1997, and then updated and modified to create RAAB in 2004.

At the moment, various methods are in use for rapid assessment of visual impairment, but largely these tactics are used for older adults (50 years and above), including RAAB. The existing study was a nationwide RAAB survey conducted in randomly selected 31 districts of India with the assistance of NPCB&VI, India. The objective was to document the status of

blindness and provide evidence-based data on the prevalence and elements of blindness and visual impairment in population aged  $\geq 50$  years in the country.

#### **Indian scenario:**

India, world's second largest population, has the distinction of being the home of the world's largest number of blind people. World Health Organization (WHO) figures exposed that around 63 million people in India are visually impaired, and of these 8 million people are totally blind. The number of blind persons in India in 2000 was projected to be 18.7 million. The projected number of blind persons in India would surge to 24.1 million in 2010 and 31.6 million 2020.

Grounded on Government of India statistics (2011), one out of every three blind persons in the world lives in India. Over 15 million people are blind out of which 11.75 million live in the rural and most backward areas. Over 9.4 million have cataract related blindness. 2.8 million are blind due to refractive error. 6 million people become blind with low vision every year. 3.2 million Children are blind under the age of 16 years, only 5% of them receive any education. 12 million people could be saved from become blind.

Cataract is the important cause of blindness in India while refractive error and glaucoma are the second and third leading causes of blindness respectively. Since trachoma is limited, onchocerciasis is non-existent; glaucoma, diabetic retinopathy and corneal diseases along with cataract and refractive errors - form priorities under India's vision 2020 action plan. About 75-80% of these are cases of avoidable blindness, Due to the country's acute shortage of trained manpower and lack of donated eyes for the treatment of corneal transplants. India needs 2.5 lakh donated eyes every year, but the country's 109 eye banks manage to collect a maximum of just 25,000 eyes, 30% of which can't be used.

So the shortage of donated eyes is becoming a huge



problem. Of the 15 million blind people in India, three million, (26%) of whom are children, suffer due to corneal disorders. But only 10,000 corneal transplants are being done every year due to the shortage of donated eyes.

As the population ages, the amount of persons who are visually impaired is increasing, as is the need for appropriate evaluation, management, and rehabilitation for these individuals. Physicians, through their clinical education, training, and experience, are in a unique position to identify the existence of, or the potential for, visual impairment in their patients. Although the ophthalmologist's role in the evaluation of these patients, it is dangerous that all sectors of primary care are aware of the factors related with visual impairment in the elderly population.

The American Academy of Ophthalmology mentions that older patients be evaluated at least once per year by an ophthalmologist. Despite this recommendation, 36% to 55% of the elderly population reported not having any eye services in more than a year.

This frighteningly high percentage of absence to eye care reflects a multifactorial problem, a substantial part of which might be attributable to the low expectations regarding vision in elderly persons. Patients with systemic diseases such as diabetes or hypertension or with chronic eye diseases such as glaucoma or AMD should see their ophthalmologist even more frequently to prevent the emergence or worsening of visual impairment.

#### **India's increasing burden of blindness:**

##### **Causes of blindness and visual impairment in population aged 0-49 years:**

Common cases of blindness were due to non-trachomatous corneal blindness (37.5%). Most important causes were refractive error (29.6%), untreated cataract (25.4%), all globe/ CNS abnormality (15.5%), and non-trachomatous corneal opacity (14.1%).

##### **Prevalence of blindness and visual impairment in overall population:**

Expected prevalence in global population of blindness was 0.36%, severe visual impairment was 0.35%, moderate visual impairment was 1.84%, and early visual impairment was 2.92%. Projected moderate severe visual impairment in overall population was 2.19% and that of visual impairment was 2.55%. Estimated prevalence of pinhole blindness in overall population of India was 0.32%.

##### **Trends of blindness and visual impairment over the years in population aged $\geq 50$ years**

Over the years, the occurrence of blindness among  $\geq 50$  population has reduced considerably. Blindness, as defined by presenting visual acuity  $<3/60$  in better eye, has reduced from 5.3% in 2001 to 3.60% in 2007 to 1.99% in current survey. Visual impairment has reduced from 32.3% in 2001 to 24.8% in 2007 to 13.73% in current survey in  $\geq 50$  population.

Cataract remain to be the key reason of blindness and responsible for 66.2% of blindness. Refractive error was the greatest important cause of visual impairment and second important cause of blindness in 2001 but the present survey showed that refractive error is not an important reason of blindness. Corneal blindness appeared as the second vital cause of blindness. Beside this, the proportion of blindness due to complications of cataract surgery have also increased.

##### **National Programme for Control of Blindness and Visual Impairment (NPCB&VI)**

##### **Best practices adopted under the programme:**

- To reach every corner of the country to provide eye-care services, provision for setting up Multipurpose District Mobile Ophthalmic Units in the District Hospitals of States/UTs as a new initiative under the programme. Few states have set up these Units. There is a need to imitate the same by other States.



- Provision for distribution of free spectacles to old persons suffering from presbyopia to enable them for undertaking near work as a new initiative under the programme. The activity needs to be expedited in the all the States.
- Importance on the comprehensive eye-care coverage by covering diseases other than cataract like diabetic retinopathy, glaucoma, corneal transplantation, vireo-retinal surgery, treatment of childhood blindness including retinopathy of prematurity (ROP) etc. These developing diseases need instant attention to eliminate avoidable blindness from the Country.
- Strengthening of Tertiary Eye-Care Centres by providing funds for purchase of sophisticated modern ophthalmic equipments.
- Ensure setting up of super specialty clinics for all major eye diseases including diabetic retinopathy, glaucoma, retinopathy of prematurity etc. in state level hospitals and medical colleges all over the country.
- Linkage of tele-ophthalmology centres at PHC/Vision centres with super specialty eye hospitals to ensure delivery of best possible diagnosis and treatment for eye diseases.
- Development of a network of eye banks and eye donation centres linked with medical colleges and RIOs to promote collection and timely utilization of donated eyes in a transparent manner.

#### Future plan:

- Setting up of more PHC/Vision Centres to broaden access of people to eye care facilities.
- To extend financial support to NGOs for treatment of other eye diseases like Diabetic Retinopathy, Glaucoma Management, Laser Techniques, Corneal Transplantation, Vitreoretinal Surgery, Treatment of Childhood Blindness, free of cost to poor people.

- Integration of existing ophthalmic surgical/ non-surgical facilities in each district, State by associating few units to next higher unit.
- Inclusion of modern ophthalmic equipment in eye care facilities to make it more versatile to meet modern day requirement.
- Up gradation of software for Management Information System for better implementation and monitoring and monitoring.
- Provision for setting up Multipurpose District Mobile Ophthalmic Units in District Hospitals for better coverage.

#### Conclusion:

#### Reduction in blindness, moderate severe visual impairment and visual impairment from 2010 estimates

The WHO Global Action Plan for Universal Eye Health 2014-2019 targets a reduction in the frequency of visual impairment by 25% by 2019 from the baseline level of 2010. The WHO estimated an occurrence of blindness, MSVI and VI as 0.68%, 4.62% and 5.30% respectively in India for the year 2010.

The current survey shows a reduction of 47.1% in blindness, 52.6% in MSVI and 51.9% in VI compared to the baseline levels. This shows that the target of 25% reduction in visual impairment have been achieved successfully by India.

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