



Barriers to Eye Care Access in Low- and Middle-Income Countries: Focus on Asia

Ankit S Varshney^{1*} and Debanjali Bhattacharjee²

¹Department of Optometry, Shree Bharatimaiya College of Optometry and Physiotherapy, Surat, Gujarat, India

²Department of Optometry, Manipal Tata Medical College, Jamshedpur, Jharkhand, India

***Corresponding Author:** Ankit S Varshney, Department of Optometry, Shree Bharatimaiya College of Optometry and Physiotherapy, Surat, Gujarat, India.

Received: August 27, 2025

Published: September 29, 2025

© All rights are reserved by **Ankit S Varshney and Debanjali Bhattacharjee**.

Abstract

Visual impairment and blindness remain major public health concerns globally, but the burden is disproportionately high in low- and middle-income countries (LMICs), especially in Asia. Although most causes of blindness are preventable or treatable, millions remain visually impaired due to persistent inequities in access to eye care. This short communication synthesizes key barriers to eye care access in Asia, categorizing them into socioeconomic, geographic, health system, cultural, and policy-related dimensions. Special emphasis is given to South and Southeast Asia, where cataract and uncorrected refractive error contribute to more than two-thirds of blindness. Socioeconomic challenges such as out-of-pocket expenditure and poverty interact with structural barriers including rural-urban disparity, shortage of trained personnel, and inadequate health system integration. Cultural beliefs, gender inequities, and lack of awareness further compound the problem. Emerging strategies such as teleophthalmology, mobile surgical units, public-private partnerships, and integration of eye health into primary care have demonstrated potential to address these challenges. Strengthening financing mechanisms, fostering community engagement, and aligning national priorities with WHO's Universal Eye Health: Vision 2020 and IAPB's 2030 In Sight frameworks are critical to achieving equitable access. Sustained innovation and political commitment are essential to close the eye health gap in Asia.

Keywords: Eye Care Access; Asia; Barriers; Cataract; Teleophthalmology; LMICs

Abbreviations

LMICs: Low- and Middle-Income Countries; WHO: World Health Organization; IAPB: International Agency for the Prevention of Blindness; UHC: Universal Health Coverage; CSR: Cataract Surgical Rate; NGO: Non-Governmental Organization

Introduction

Vision impairment significantly impacts quality of life, education, productivity, and social participation. The Global Burden of Disease

Study 2021 estimated that over 596 million people worldwide live with distance or near vision impairment, with the majority residing in Asia [1]. South Asia alone contributes nearly one-third of global blindness cases. Conditions such as cataract, uncorrected refractive error, diabetic retinopathy, and glaucoma are the leading causes, many of which are preventable or treatable through cost-effective interventions.

Despite scientific advances, inequities in access to eye care persist. While high-income countries have largely reduced avoidable blindness, LMICs in Asia continue to face significant challenges. The issue is not only medical but also structural, involving social, economic, cultural, and policy-level barriers. This communication reviews the major barriers to eye care access in Asia, highlights country-specific examples, and explores recent innovations and strategies designed to overcome them.

Results and Discussion

Socioeconomic barriers

Financial barriers remain the most significant obstacle in accessing eye care. In many Asian LMICs, health systems rely heavily on out-of-pocket expenditure, which can deter low-income households from seeking care. Cataract surgery, although cost-effective, is unaffordable for many without subsidies. The indirect costs, such as loss of wages and transportation expenses, further discourage patients. Poverty exacerbates inequity, with the poorest quintiles bearing the highest burden of avoidable blindness.

Geographic barriers

Large populations in rural and remote areas lack proximity to eye care services. Urban centers in India, China, and the Philippines have modern tertiary eye hospitals, but rural communities often depend on intermittent outreach camps. Mountainous regions of Nepal and island geographies of Indonesia and the Philippines face additional challenges in physical accessibility. This rural-urban divide leads to delays in seeking treatment, worsening preventable vision loss.

Health system barriers

A shortage of skilled professionals, including ophthalmologists, optometrists, and allied eye health workers, remains a critical issue. According to the WHO, many LMICs in Asia have fewer than three ophthalmologists per million people, far below recommended levels. Surgical backlogs, inadequate supply chains for spectacles and intraocular lenses, and weak referral systems compound the issue. Furthermore, eye care often operates in silos rather than being integrated into broader health systems, leading to inefficiencies.

Cultural and gender barriers

Cultural beliefs and practices strongly influence health-seeking behavior. Myths around cataract surgery, fear of blindness after treatment, and reliance on traditional healers delay timely care. Gender inequities are striking: women account for nearly two-thirds of global blindness, largely due to lower access to services. In South Asia, women often depend on male family members for decision-making and mobility, which restricts their ability to seek care. Awareness levels also remain low, with many people considering vision loss a normal part of aging.

Policy and Governance Barriers

Policy neglect of eye health has historically undermined progress. Eye care is often absent from national health insurance schemes, leaving patients to bear the cost. Fragmentation across governmental, private, and NGO sectors reduces efficiency and sustainability. While initiatives like Vision 2020: The Right to Sight have galvanized action, long-term integration into health systems remains limited.

Barriers to eye care access in Asia

Category	Key Barriers	Examples from Asia
Socioeconomic	High out-of-pocket costs, lack of insurance, poverty, income loss due to seeking care	In India and Bangladesh, >70% of cataract surgeries are paid out-of-pocket [2]
Geographic	Rural-urban disparity, long travel distances, poor transport infrastructure	Remote areas of Nepal and Indonesia lack secondary/tertiary eye care centers [3]
Health System	Workforce shortage, inadequate infrastructure, low surgical capacity	WHO estimates <3 ophthalmologists per million in some parts of South Asia [4]
Cultural	Gender inequity, low awareness, fear of surgery, reliance on traditional healers	Women in Pakistan are 1.3× less likely to access cataract surgery than men [5]
Policy and Governance	Weak integration into primary health care, limited public funding, fragmented governance	Eye care not included in UHC packages in several LMICs such as Myanmar [6]

Table

Recent strategies and innovations

Despite these challenges, promising strategies have emerged:

- **Teleophthalmology:** India has pioneered several teleophthalmology projects linking rural clinics to tertiary centers for diabetic retinopathy and glaucoma screening [7]. Bangladesh has scaled similar models with NGO support.
- **Mobile Eye Units and Outreach Camps:** Nepal's Tilganga Institute of Ophthalmology has successfully deployed mobile surgical units to remote mountain villages, drastically reducing cataract backlog [3].
- **Community Health Worker Involvement:** Programs in Pakistan and India have trained community health workers, particularly women, to conduct vision screenings, raise awareness, and facilitate referrals.
- **Integration into Primary Care:** The Philippines has integrated eye health into its Universal Health Care Act, making basic vision screening and cataract surgery part of national health insurance [8].
- **Public-Private Partnerships:** Aravind Eye Care System in India and similar models in Southeast Asia have demonstrated the viability of high-volume, low-cost service delivery that is financially sustainable.

Practice and policy implications

To improve eye care access in Asian LMICs, stakeholders should:

- Integrate eye care into primary health systems and UHC packages.
- Subsidize or fully cover cataract surgery and spectacles to reduce out-of-pocket burden.
- Expand teleophthalmology and mobile surgical units to rural and hard-to-reach areas.
- Build human resource capacity through training mid-level ophthalmic personnel.
- Promote gender-sensitive outreach programs, especially targeting women and elderly populations.
- Strengthen public-private partnerships for sustainable service delivery.

- Align national policies with WHO's 2030 targets and IAPB's 2030 In Sight framework.

Conclusion

Barriers to eye care access in Asia are multifactorial and deeply rooted in socioeconomic, cultural, and systemic inequities. Although innovations such as teleophthalmology, community engagement, and integration into UHC frameworks have shown promise, scaling these solutions requires strong political will and adequate financing. Eye care should be recognized not just as a medical service but as a fundamental component of equitable health systems. Achieving universal eye health in Asia is both an attainable and necessary goal to reduce avoidable blindness and ensure social and economic well-being.

Acknowledgements

A The authors would like to express their sincere gratitude to their colleagues and mentors who provided valuable guidance and constructive feedback during the preparation of this manuscript. In particular, we thank the faculty members of Shree Bharatimaiya College of Optometry & Physiotherapy, Surat, and Manipal Tata Medical College, Jamshedpur, for their constant support and encouragement.

We also acknowledge the contributions of peers and collaborators who assisted in literature search and critical discussions but are not included in the authorship of this paper.

Limitations

This communication provides a narrative overview, synthesizing key themes from recent peer-reviewed studies and global reports. It does not systematically review all available evidence, and therefore some region-specific barriers or strategies may not be fully captured.

Conflict of Interest

The author declares no conflict of interest.

Funding

No funding was received for this work.

Bibliography

1. Bourne Rupert RA., *et al.* "Trends in Prevalence of Blindness and Distance and Near Vision Impairment over 30 Years: An Analysis for the Global Burden of Disease Study". *The Lancet Global Health* 9.2 (2021): e130-e143.
2. Burton Matthew J., *et al.* "The Lancet Global Health Commission on Global Eye Health: Vision beyond 2020". *The Lancet Global Health* 9.4 (2021): e489-e551.
3. Ellwein Leon B., *et al.* "The Cost Effectiveness of Strategies to Reduce Barriers to Cataract Surgery. The Operations Research Group". *International Ophthalmology* 15.3 (1991): 175-183.
4. Ramke Jacqueline, *et al.* "Interventions to Improve Access to Cataract Surgical Services and Their Impact on Equity in Low- and Middle-Income Countries". *Cochrane Database of Systematic Reviews* 11 (2017): CD011307.
5. Courtright Paul. "Gender and Blindness: Taking a Global and a Local Perspective". *Oman Journal of Ophthalmology* 2.2 (2009): 55-56.
6. Ramke Jacqueline, *et al.* "Grand Challenges in Global Eye Health: A Global Prioritisation Process Using Delphi Method". *The Lancet Healthy Longevity* 3.1 (2022): e31-e41.
7. Prathiba Vijayaraghavan and Rema Mohan. "Teleophthalmology: A Model for Eye Care Delivery in Rural and Underserved Areas of India". *International Journal of Family Medicine* (2011): Article ID 683267.
8. Bautista Maria Cristina G., *et al.* "The 2019 Philippine UHC Act, Pandemic Management and Implementation Implications in a Post-COVID-19 World: A Content Analysis". *International Journal of Environmental Research and Public Health* 19.15 (2022): 9567.