.cls-1{fill:#0093d5;}World Health Organization

Blindness and vision impairment

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Key facts

- **Globally, at least 2.2 billion people have a near or distance vision impairment. In at least 1**

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billion of these, vision impairment could have been prevented or is yet to be addressed.

- **The leading causes of vision impairment and blindness at a global level are refractive errors and cataracts.**
- **It is estimated that globally only 36% of people with a distance vision impairment due to refractive error and only 17% of people with vision impairment due to cataract have received access to an appropriate intervention.**
- **Vision impairment poses an enormous global financial burden, with the annual global cost of productivity estimated to be US$ 411 billion.**
- **Vision loss can affect people of all ages; however, most people with vision impairment and blindness are over the age of 50 years.**

Overview

Vision, the most dominant of our senses, plays a critical role in every facet and stage of our lives. We take vision for granted, but without vision, we struggle to learn, to walk, to read, to participate in school and to work.

Vision impairment occurs when an eye condition affects the visual system and its vision functions. Everyone, if they live long enough, will experience at least one eye condition in their lifetime that will require appropriate care.

Vision impairment has serious consequences for the individual across the life course. Many of these consequences can be mitigated by timely access to quality eye care. Eye conditions that can cause vision impairment and blindness – such as cataract or refractive error – are, for good reasons, the main focus of eye care strategies; nevertheless, the importance of eye conditions that do not typically cause vision impairment – such as dry eye or conjunctivitis – must not be overlooked. These conditions are frequently among the leading reasons for presentation to eye care services.

Causes

Globally, the leading causes of vision impairment and blindness are:

- refractive errors
- cataract
- diabetic retinopathy
- glaucoma
- age-related macular degeneration.

There is substantial variation in the causes of vision impairment between and within countries according

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to the availability of eye care services, their affordability, and the education of the population. For example, the proportion of vision impairment attributable to unoperated cataract is higher in low- and middle-income countries. In high income countries, diseases such as glaucoma and age-related macular degeneration are more common.

Among children, congenital cataract is a leading cause of vision impairment in low-income countries, whereas in middle-income countries it is more likely to be retinopathy of prematurity.

Uncorrected refractive error remains a leading cause of vision impairment in all countries amongst children and adult populations.

Prevalence

Globally, at least 2.2 billion people have a near or distance vision impairment. In at least 1 billion – or almost half – of these cases, vision impairment could have been prevented or has yet to be addressed.

Among this 1 billion people, the main conditions causing distance vision impairment or blindness are cataract (94 million), refractive error (88.4 million), age-related macular degeneration (8 million), glaucoma (7.7 million), diabetic retinopathy (3.9 million) *(1)*. The main condition causing near vision impairment is presbyopia (826 million) *(2)*.

In terms of regional differences, the prevalence of distance vision impairment in low- and middle-income regions is estimated to be 4 times higher than in high-income regions *(1)*. With regards to near vision, rates of unaddressed near vision impairment are estimated to be greater than 80% in western, eastern and central sub-Saharan Africa, while comparative rates in high-income regions of North America, Australasia, western Europe, and of Asia-Pacific are reported to be lower than 10% *(2)*.

Population growth and ageing are expected to increase the risk that more people acquire vision impairment.

Impact of vision impairment

Personal impact

Young children with early onset irreversible severe vision impairment can experience delayed motor, language, emotional, social and cognitive development, with lifelong consequences. School-age children with vision impairment can also experience lower levels of educational achievement.

Vision impairment severely impacts quality of life among adult populations. Adults with vision impairment can experience lower rates of employment and higher rates of depression and anxiety.

In the case of older adults, vision impairment can contribute to social isolation, difficulty walking, a higher risk of falls and fractures, and a greater likelihood of early entry into nursing or care homes.

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Economic impact

Vision impairment poses an enormous global financial burden with an estimate annual global productivity loss of about US$ 411 billion purchasing power parity *(3)*. This figure far outweighs the estimated cost gap of addressing the unmet need of vision impairment (estimated at about US$ 25 billion).

Strategies to address eye conditions to avoid vision impairment

There are effective interventions covering promotion, prevention, treatment and rehabilitation which address the needs associated with eye conditions and vision impairment. While many vision loss cases can be prevented (such as those due to infections, trauma, unsafe traditional medicines, perinatal diseases, nutrition-related diseases, unsafe use or self-administration of topical treatment), this is not possible for all. For many eye conditions, e.g. diabetic retinopathy, early detection and timely treatment are crucial to avoid irreversible vision loss. Spectacle correction for refractive error and surgery for cataract are among the most cost-effective of all health-care interventions. Yet, globally only 36% of people with a distance vision impairment due to refractive error have received access to an appropriate pair of spectacles and only 17% of people with vision impairment or blindness due to cataract have received access to quality surgery.

Treatment is also available for many eye conditions that do not typically cause vision impairment, such as dry eye, conjunctivitis and blepharitis, but generate discomfort and pain. Treatment of these conditions is directed at alleviating the symptoms and preventing the evolution towards more severe stages of those diseases.

Vision rehabilitation is very effective in improving functioning for people with an irreversible vision loss that can be caused by eye conditions such as diabetic retinopathy, glaucoma, consequences of trauma, and age-related macular degeneration.

WHO response

WHO's work is guided by the recommendations of the WHO World report on vision (2019) and the resolution on "integrated, people-centred eye care, including preventable blindness and vision impairment" adopted at the Seventy-third World Health Assembly in 2020. The key proposal is to make integrated people-centred eye care (IPEC) the care model of choice and to ensure its widespread implementation. It is expected that by shaping the global agenda on vision and eye care, the report and resolution will assist Member States and their partners in their efforts to reduce the burden of eye conditions and vision.

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Some of WHO's key areas of work and activities in the prevention of blindness include:

1. Working with Member States and other partners in the field to monitor the global targets for 2030 on integrated people-centred eye care:
   - Developing reports of the effective coverage of eye care indicators to monitor progress towards the 2030 global targets.
   - Developing resources and technical tools to support the integration of eye care into health information systems.
2. Observing and promoting World Sight Day as an annual advocacy event.
3. Supporting the integration of eye care in health systems through the implementation of a series of technical tools:
   - The Eye care in health systems: Guide for action.
   - The Package of eye care interventions (PECI).
   - The Eye care competency framework (ECCF).
4. The development and implementation tools to support countries to assess the provision of eye care services such as:
   - The Eye care situation analysis tool
   - The Tool for the assessment of diabetic retinopathy and diabetes management services.
   - The Tool for the assessment of glaucoma services.
   - The Tool for the assessment of refractive services.
   - The Tool for the assessment of rehabilitation services and systems.
5. The development of materials and resources to raise awareness on eye care:
   - The MyopiaEd: a mobile health toolkit for myopia to increase health literacy.
   - A population-facing app for near and distance visual acuity testing.
   - Graphics promoting healthy eye habits.

References

1. GBD 2019 Blindness and Vision Impairment Collaborators; Vision Loss Expert Group of the Global Burden of Disease Study. Causes of blindness and vision impairment in 2020 and trends over 30 years, and prevalence of avoidable blindness in relation to VISION 2020: the Right to Sight: an analysis for the Global Burden of Disease Study. Lancet Glob Health. 2021 Feb;9(2):e144-e160. doi: 10.1016/S2214-109X(20)30489-7.

2. Fricke, TR, Tahhan N, Resnikoff S, Papas E, Burnett A, Suit MH, Naduvilath T, Naidoo K, Global Prevalence of Presbyopia and Vision Impairment from Uncorrected Presbyopia: Systematic Review, Meta-analysis, and Modelling, Ophthalmology. 2018 May 9.

3. Burton MJ, Ramke J, Marques AP, Bourne RR, Congdon N, Jones I, et al. The Lancet Global Health commission on Global Eye Health: vision beyond 2020. Lancet Glob Health. 2021; 9(4):e489–e551.

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Related

Health topic page

- WHO's work on eye care, vision impairment and blindness (who.int)

Related links

- Report of the 2030 targets on effective coverage of eye care (who.int)
- Eye care in health systems: guide for action (who.int)
- World report on vision (who.int)

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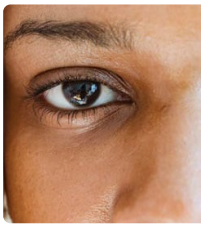

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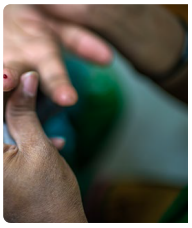

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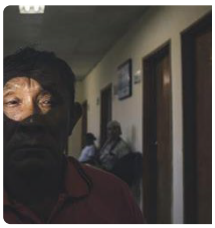

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