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Prevalence of visual impairment

Changing demography

When the Community Eye Health Journal was launched in 1988, the world population was approximately 5.1 billion. Over the last 20 years, it has increased by approximately 30%, reaching 6.7 billion in 2008. During the same period, the world population has also become proportionally older, as the number of people aged 65 years and over has increased by approximately 55%, from 320 million in 1988 to 500 million in 2008.

Since the prevalence of visual impairment becomes higher as people age, this combination of an increasing population and an ageing population is expected to cause a significant increase in the total number of blind people.1

Estimates of the number of people with visual impairment worldwide

In 1988, the number of people who were blind (visual acuity (VA) <3/60 in the better eye) was estimated to be 37 million worldwide. By 2002–04, the latest period for which we have data (see Table 1), it was estimated to be 45 million: 8 million blind due to uncorrected refractive error and 37 million blind due to other causes.2, 3 It is thought that at least 60% of blind people are women.

Little was known in 1988 about the prevalence of low vision (VA <6/18 to 3/60). In 2002, the number of people with long vision was estimated to be 124 million worldwide, but this excluded low vision due to refractive error.2 Owing to a lack of data from surveys, it has only very recently become possible to estimate that there are 145 million people with low vision due to refractive error.3 This figure brings the overall number of people with low vision to 269 million.

In total, the number of people with visual impairment (which includes both low vision and blindness) is therefore estimated to be 314 million worldwide.

Causes of blindness

Over the last twenty years, the causes of blindness have changed in proportion and actual number. Cataract has remained the major cause of blindness worldwide for the past 20 years.1

Table 1. Most recent estimates of the number of people with visual impairment (blindness and low vision) worldwide2,3,4

<table>
<thead>
<tr>
<th>Definition</th>
<th>Number of people (millions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blindness (eye disease)</td>
<td>&lt;3/60 to no light perception</td>
</tr>
<tr>
<td>Blindness (refractive error)</td>
<td>&lt;3/60 to light perception</td>
</tr>
<tr>
<td>Blindness (all causes)</td>
<td></td>
</tr>
<tr>
<td>Low vision (eye disease)</td>
<td>&lt;6/18 to 3/60</td>
</tr>
<tr>
<td>Low vision (refractive error)</td>
<td>&lt;6/18 to 3/60</td>
</tr>
<tr>
<td>Low vision (all causes)</td>
<td></td>
</tr>
<tr>
<td>Total: Visual impairment (all causes)</td>
<td></td>
</tr>
</tbody>
</table>

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The Community Eye Health Journal: twenty years on

NEWS AND NOTICES
**CHANGING PATTERNS IN GLOBAL BLINDNESS**

**Figure 1. Proportion of cases of blindness due to each major cause**

<table>
<thead>
<tr>
<th>Cause</th>
<th>Proportion of Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaucoma</td>
<td>10%</td>
</tr>
<tr>
<td>Refractive error</td>
<td>18%</td>
</tr>
<tr>
<td>Cataract</td>
<td>39%</td>
</tr>
<tr>
<td>Corneal scar</td>
<td>4%</td>
</tr>
<tr>
<td>Diabetic retinopathy</td>
<td>4%</td>
</tr>
<tr>
<td>Childhood</td>
<td>3%</td>
</tr>
<tr>
<td>Trachoma</td>
<td>3%</td>
</tr>
<tr>
<td>Oncho.</td>
<td>0.7%</td>
</tr>
<tr>
<td>Other causes</td>
<td>11%</td>
</tr>
</tbody>
</table>

*Global numbers shown in millions (m)

Similarly, the number of people blind from trachoma decreased from approximately 5 million in 1988 to 1.3 million in 2002. The SAFE strategy for trachoma control has become widely accepted, with substantial improvements being seen. The preferred surgical procedure for trichiasis, and oral azithromycin has become the first-choice antibiotic for mass treatment of communities with endemic trachoma infection (as shown in the article on page 43). It is also likely that improvements in water supply and sanitation have significantly reduced the transmission of trachoma infection in poor rural communities in Africa and Asia. However, more investigative work is required to reduce recurrence after trichiasis surgery and to identify the most cost-effective strategies for the distribution of azithromycin.

**Onchocerciasis**

In 1988, onchocerciasis was a significant cause of blindness in many countries in Africa. This year, however, saw important developments in the treatment of the disease: Merck & Co. had registered the microfilaricide ivermectin (Mectizan®) a year earlier and its Mectizan® Donation Programme came into effect, providing Mectizan® free of charge to individuals and communities with onchocerciasis, as shown in the article on page 43. Twenty years on, the severity of onchocerciasis infection is decreasing and the number of people developing vision loss has markedly decreased. The figures for 2007 indicate that over 50 million people are now receiving Mectizan® on an annual basis through community-directed treatment programmes.

**Childhood blindness**

Although vitamin A deficiency was a well-recognized cause of blindness in children twenty years ago, little work had been done up to that time on the magnitude and causes of childhood blindness. The article on page 46 presents an overview of the data collected and the lessons learnt over the past twenty years. These data show marked variations according to the socio-economic status of the community. For example, vitamin A deficiency still occurs in children under five years old living in very poor families and, today, rising food prices worldwide may aggravate this situation further. Similarly, retinopathy of prematurity has emerged as a significant problem in middle-income countries and in urban centres of the developing world. The most important treatable cause of childhood blindness, however, remains untreated or poorly treated cataract, which is responsible for 5–20% of all cases.

**Refractive error**

Little was known in 1988 about the magnitude of visual loss due to refractive error. This was due to the fact that the World Health Organization’s (WHO) definition of blindness...
Blindness and the cost-effectiveness of available interventions. It has mobilised both government and private funding for eye care and it has generated a global public-private partnership working with a clearly defined focus and strategy.

There is little doubt that the VISION 2020 initiative has raised awareness concerning blindness and the cost-effectiveness of available interventions. It has mobilised both government and private funding for eye care and it has generated a global public-private partnership working with a clearly defined focus and strategy.

Estimates of global blindness made in 2002 were 15 million lower than the projections made for this same year when VISION 2020 was launched. There is also evidence that the number of people who are blind due to onchocerciasis and trachoma has decreased, as well as evidence of increasing cataract surgical rates in many countries. Our challenge now is to build on what has been achieved and to focus resources on the poorest communities in the world. The goal of VISION 2020 is to enable all persons to receive eye care and have the right to sight— which is one of their fundamental human rights.

References