

Lack of Spectacles Costs \$427 Billion

Over 158 million people in the world are effectively blind because they do not have the spectacles they need to correct their vision. The cost of this disability is enormous. A recent study published in the Bull World Health Organ claims that uncorrected refractive error results in a loss of economic productivity globally worth \$427 billion.

The scale of the problem

Uncorrected refractive error for distance vision is the second leading cause of blindness globally (after cataract) and the leading cause of low vision. In 2004, 153 million people were suffering from visual impairment through not being able to access the correct glasses; 8 million of these are blind. Refractive error is correctable with spectacles, contact lenses or laser surgery. In the absence of correction, distance vision impairment may limit a person's ability to work, or to manage the tasks of daily life on their own.

The study puts the loss of global productivity at \$427 billion and then adjusts that figure down to \$269 billion, taking into account country-specific labour force participation and employment rates. It then reduces this figure still further, to \$121.4 billion, by assuming that people over the age of 50 are not economically productive (an extremely conservative approach).

The solution

The true cost of providing spectacles to meet this global burden is unknown. Eyeglasses are a low cost intervention and, assuming that they are replaced every three years, an additional 53 million pairs of spectacles would be needed annually to allow each person to become economically productive. The direct cost of a vision test and a pair of spectacles in the US was, in 2000, estimated to be \$139. If this rate is inflated to 2007 prices, then the study calculates an annual cost of \$26 billion to provide a sight test and a pair of spectacles to every person in the world with uncorrected refractive error. The report does, however, acknowledge that many countries lack the infrastructure, the equipment and the personnel required to provide spectacles to those in need. The estimate of \$26 billion is therefore likely to be a significant underestimate.

European Council of Optometry and Optics

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Europe

The study shows that Europe has over 15 million people with uncorrected refractive error resulting in visual impairment, resulting in approximately \$26 billion of economic productivity loss. A recent report by the Royal National Institute for Blind People (RNIB)ⁱ estimates the annual cost of visual impairment in the UK alone as £4.9 billion (\$8 billion). Using the US estimates of the cost of a sight test and a pair of spectacles from 2000 as a basis for estimation and taking inflation into account, the annual cost for providing those in Europe with vision impaired through uncorrected refractive error would be around \$830 million. Because European infrastructure and the availability of equipment and trained personnel is better than may be found in some other areas of the globe, this figure is more likely to reflect a realistic cost.

The tragedy is that uncorrected refractive error is wholly avoidable. The figures suggest that the current burden it causes has a potentially greater impact on the global economy than all other preventable vision disorders. A concentration of effort on solving the problem is likely, not only to improve the quality of life of millions of people, but to be economically worthwhile. Another studyⁱⁱ argued that the absolute economic burden of sight loss ranks with that of cancer, dementia and arthritis. "The impact relative to [an] entire...economy also emphasises the non-trivial nature of the burden of visual impairment. The results should catch the attention of health policy makers because they suggest that, even in a developed economy, visual impairment can limit economic development".

The European Council of Optometry & Optics advises that all sectors of the population should have regular sight tests. Many European nations have welfare systems that provide aid for the purchase of spectacles or sight tests for those in economic need.

Notes to editors

- The study, "*Potential lost productivity resulting from the global burden of uncorrected refractive error*", was published in Bull World Health Organ 2009;87:431-437 and authored by TST Smith, KD Frick, BA Holden, TR Fricke and KS Naidoo.
- The European Council of Optometry and Optics is the European organisation which represents the interests of optometrists and opticians from 30 countries. It aims to promote eye health to the public across borders and to harmonise clinical and educational standards of optometric and optical practice throughout Europe.

ⁱ Evidence base to support the UK Vision Strategy - Nick Bosanquet and Pritti Mehta, RNIB and Guide Dogs for the Blind Association 2008

ⁱⁱ Frick, K.D., Kymes, S.M., (2006) The calculation and use of economic burden data, British Journal of Ophthalmology 90:255-257

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