

Economic and Societal Impacts of Vision Impairment: A Comprehensive Review

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Abstract

VI is a worldwide societal issue with significant economic and social consequences. This review provides an overview of the economic burden due to the direct costs of health care, loss of productivity, and costs of informal care. In developed countries such as the United States, the estimated cost of VI from an economic viewpoint is in billions of dollars annually. In developing countries, such as India, the economic loss is even more. The review also underlines the consequences of socio-economic inequality, which further heightens the burden that is imposed by VI, especially in those settings where eye care services are scarce. These results point to the urgent need for better eye care infrastructure and targeted public health interventions, particularly in low-income and middle-income countries, to reduce economic and social burdens from VI and improve quality of life among affected individuals.

Keywords: vision impairment; economic burden; health care costs; productivity loss; socio-economic inequalities; eye care services

Abbreviations

VI: Vision Impairment; HDI: Human Development Index; YLDs: Years Lived with Disability; RP: Retinitis Pigmentosa; QALYs: Quality-Adjusted Life Years.

Introduction

Worldwide, millions of people suffer from visual impairment, which has deep implications for the economy and society [1]. The global burden of VI is both a public health priority and an economic burden that strains healthcare systems and economies [2]. This review, therefore, offers an in-depth analysis of economic and societal impacts of vision impairment by amalgamating findings from various studies that illustrate key causes of the disease and their associated costs, with the intention of informing policy and health professionals on the financial burden as well as the need for effective interventions [3, 4].

Economic Burden of Vision Impairment

The economic burden of VI is multivariant, as it involves direct healthcare costs, productivity losses, and expenditure related to informal care [1]. Costs due to vision impairment show pronounced regional differences and a significant heterogeneity depending on the cause. Highly variable costs are represented, among others: treatment, medical costs, and interventions [4]. For example, the economic burden of vision loss in 2017 was estimated at \$134.2 billion, with direct costs estimated at \$98.7 billion, indirect costs at \$35.5 billion, added to significant productivity losses [5]. The burden is substantially higher among older adults, reflecting high

expenses for nursing home care and other medical expenses [6].

Major Causes of Vision Impairment and Their Costs

The causes of vision impairment ranked highest include cataract, uncorrected refractive errors, diabetic retinopathy, glaucoma, age-related macular degeneration (AMD), corneal opacity, and trachoma [7-9]. These diseases all have various contributions to economic cost. For example, one study regarding RP in Japan estimated the annual cost per patient at around 218,520 yen (\$2,176 USD) and lifetime costs to be around 18,523,909 yen (\$184,501 USD) [8]. These figures epitomize the high economic burden of chronic and progressive vision disorders, which, other than the costs accrued by their treatments, bear implications for considerable productivity losses and reduced quality of life [8].

Economic Disparities and Vision Impairment

There are various studies that have pointed out the relation of socioeconomic position to vision impairment, that is, the low-income countries and areas with lower HDI have higher rates of avoidable blindness, in particular from cataracts, and severe vision loss [7]. Inequity in access to eye care further heightens the economic burden attributed to vision impairment. Moreover, studies also report a high prevalence of depression and anxiety in people with vision loss, especially in poorer communities, and thus psychosocial interventions and mental health care need to be included for these varied needs [3]. Despite the fact that the economic burdens of vision impairment are generally related to the elderly population, they also have serious effects on younger populations due to lost income and productivity and medical costs associated with eye conditions [6]. In 2012 alone, it was estimated that the economic cost of vision impairment among people under 40 years in the United States stood at \$27.5 billion, further cementing reasons for early interventions in the hope of alleviating such costs in the long run [6]. The situation is grimmer in India, with estimates indicating that the loss to Gross National Income on account of blindness amounts to \$38.4 billion and a productivity loss of \$29.4 billion [9]. These figures certainly indicate the urgent need for developing eye care infrastructures and programs, particularly in developing countries, toward lesser economic impact associated with vision impairment.

Conclusion

VI represents a significant economic and social burden for individuals, families, and entire economies [2]. This narrative review demonstrated the considerable cost of VI and its major causes and identified the urgent need for comprehensive approaches to address this global problem. It will be realized when there is enhanced access to eye care services, especially in the low- and middle-income countries, with targeted interventions aimed at reducing the direct and indirect costs associated with the condition [7, 9]. This will, in addition, reduce the significant economic burdens associated with the condition and improve the quality of life among individuals affected [3, 8]. Future research and policy initiatives must be targeted at reducing disparities in the access to eye care services and mitigation of broader socioeconomic consequences of visual impairment.

References

1. Marques AP, et al. "The economics of vision impairment and its leading causes: A systematic review". *EClinicalMedicine* 46 (2022): 101354.
2. Wang W, et al. "Association of socioeconomics with prevalence of visual impairment and blindness". *JAMA Ophthalmol* 135.12 (2017): 1295-1302.
3. Demmin DL and Silverstein SM. "Visual impairment and mental health: Unmet needs and treatment options". *Clinical Ophthalmology* 14 (2020): 4229-4251.
4. Marques AP, et al. "Estimating the global cost of vision impairment and its major causes: protocol for a systematic review". *BMJ Open* 10.9 (2020): e036689.
5. Rein DB, et al. "The Economic Burden of Vision Loss and Blindness in the United States". *Ophthalmology* 129.4 (2022): 369-378.

6. Wittenborn JS, et al. "The economic burden of vision loss and eye disorders among the united states population younger than 40 years". *Ophthalmology* 120.9 (2013): 1728-1735.
7. Fang Z, et al. "Socio-economic disparity in visual impairment from cataract". *Int J Ophthalmol* 14.9 (2021): 1310-1314.
8. Watanabe K, et al. "Quality of Life and Economic Impacts of Retinitis Pigmentosa on Japanese Patients: A Non-interventional Cross-sectional Study". *Adv Ther* 40.5 (2023): 2375-2393.
9. Mannava S, Borah R and Shamanna B. "Current estimates of the economic burden of blindness and visual impairment in India: A cost of illness study". *Indian J Ophthalmol* 70.6 (2022): 2141-2145.

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