Contact Lens Update
CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

The Economic Cost of Myopia in Adults Aged Over 40 Years in Singapore

September 2, 2014

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Zheng, Y. F., Pan, C. W., Chay, J., Wong, T. Y., Finkelstein, E., & Saw, S. M. (2013). The economic cost of myopia in adults aged over 40 years in Singapore. Investigative Ophthalmology & Visual Science, 54(12), 7532-753.

Myopia, a significant public health problem, is here to stay. In fact, over recent decades, there has been an increase in the prevalence of myopia, especially amongst children and young adults.[1, 2] Of greater concern is the alarming acceleration in the prevalence of myopia in certain young, urban East Asian populations.[3-6] Click here for Jake Sivak's editorial, which provides further insight into this growing concern.

Blurred distance vision caused by myopia is traditionally managed by corrective lenses (eyeglasses or contact lenses) or treated with refractive surgery, some of which may impose a considerable economic burden. In 2006, Vitale et al. calculated that the societal cost of correcting myopia in the United States was about US$3.8 billion and this is likely to grow with the increasing rates of myopia.[7]

Novel approaches to slow the progression of myopia, including the use of drug therapy, specially designed contact lenses, orthokeratology, bifocals and vision training have shown some promising results, but to date no large scale clinical trial has shown their success and even if they should, will merely augment the already great financial cost of managing myopia.

In addition to this societal burden, myopia, especially high myopia, carries an increased risk for various ocular anomalies, such as macular degeneration[8], open-angle glaucoma[9] and rhegmatogenous retinal detachment[10]. All of these conditions lead to significant visual disability and, in some cases, registrable blindness, which further adds to health care expenditure. In a recent study, Zheng et al.[11] reveal the substantial individual and public health costs of myopia in Singapore, an urban center where the prevalence rate has climbed to 39% of the adult population.

Study population and method

Data were collected from the Singapore Chinese Eye Study (SCES), a study of Chinese Singaporeans older than 40 years of age. One hundred twenty-five participants from the SCES study were then recruited to complete a questionnaire that asked participants to estimate of the costs of eye care relevant to myopia in the past 12 months. Myopia was defined as the spherical equivalent power of at least -0.5 diopters.

Health Expenditure on Myopia Questionnaire

The questionnaire also asked about the cost of glasses, contact lenses and solutions, optical/optometry services, laser refractive surgery costs, outpatient clinic costs related to complications from contact lenses or laser refractive surgery, costs related to complications from pathologic myopia, and the costs and mode of transportation for each factor.

Results

Of the 125 participants recruited, 113 completed the questionnaire. Carrying out a burden of disease evaluation, a mean cost per person of US$709 per year was calculated to be incurred, with a lifetime cost ranging from US$232 to $17, 020 (0 to 80 years duration). The majority of subjects (90.3%) reported costs related to:

- spectacle use (US$267.20 ±230.20),
- contact lens use (21.2% of subjects averaged a cost of US$7.3 ± 29.3 in a month), and
- the use of optometry and optical services (36.3% of subjects averaged a cost of US$97.5 ± 214.60).

Seven subjects underwent LASIK surgery (costs averaging US$3847.0 ±1259.40), with three subjects reporting complications from LASIK or contact lenses (US$26.2 ± 45.4).

Only one subject reported complications from pathologic myopia (costs averaging $787.40).

When the researchers applied the cost data to myopia prevalence in the whole country, the total cost was estimated to be approximately US$755 million per year in Singapore.

Conclusion

This study was the first to describe the economic burden of myopia at the regional level in Singapore, an urban Asian area with a relatively higher prevalence of myopia. It appears that myopia is associated with a considerable amount of public health expense in an older population. These results, however, may not be generalizable to younger adults, who have higher myopia prevalence and who may opt for corrections that are very different from those used by an older population, all of which may significantly underestimate the future costs of myopia management.

Since the economic cost of myopia is substantial when compared to other prevalent chronic eye and medical conditions, the authors state that myopia warrants more attention. They emphasize that it is essential for resources to be channeled towards the treatment and prevention of myopia and that the cost of developing effective myopia interventions would be worthwhile, to lessen the growing economic burden.

A great opportunity for clinicians to aid in alleviating this global epidemic is managing myopia progression at the first signs in childhood. As much research interest is now focusing on myopia control, utilizing innovative methods in practice and engaging your patients when devising a management plan will not only help build a great patient base but can help prevent pathological ocular conditions for your patients and save a lifetime of costs for them and the public health system. Clinicians should remain aware of these treatment options as further studies become completed, as their patients will certainly be asking about their viability for their children should they become myopic.

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