Contact Lens Update
CLINICAL INSIGHTS BASED IN CURRENT RESEARCH

Global trends in myopia management: A review

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Myopia is a global public health issue that has reached epidemic proportions,[1] with reports suggesting that the prevalence of myopia has broadly doubled in the past 30 years.[2] It is estimated that by 2050, 50% of the world's population (4758 million people) will be myopic, compared with 23% in 2000.[3] The reasons for the increased prevalence remain largely unproven, but potential mechanisms include a variety of genetic and environmental factors, including an increased amount of near work, lighting levels, reduced amounts of outdoor activities and peripheral hyperopic defocus – to name just a few.[4-12] The initial onset of myopia in the past two generations is clearly occurring at an earlier age, with a resultant increase in the prevalence of high myopia in later life. It is estimated that by 2050, 10% of the world's population will suffer from high myopia (>-5.00D),[3] which is troubling given its known association with an increase in a number of sight threatening ocular pathologies, including glaucoma, retinal detachment and myopic maculopathy.[13-17]

Wolffsohn JS, Calossi A, Cho P, et al. Global trends in myopia management attitudes and strategies in clinical practice. Cont Lens Anterior Eye 2016;39: 106-16.

As a result of such data, there has been an increased interest in clinical interventions to control myopia progression.[1, 6, 9-11, 18-25] The intention of these treatments is to maintain levels of myopia in the low to moderate range and avoid high myopia and the associated comorbidities. In an attempt to gain a better understanding of the current trends of myopia management within clinical practice, Wolffson et al. used an Internet-based survey consisting of nine questions to poll practitioners in 13 countries around the globe.[26] The questions examined awareness of increasing myopia prevalence; levels of concern about the increase in myopia; minimum age and prescription for which consideration would be given for myopia intervention; perceived efficacy and adoption of available strategies and reasons for not adopting specific strategies.

The authors collated the data from 971 respondents from six continents. 72.4% of the respondents were optometrists, 18.6% ophthalmologists, 5.2% opticians and the remaining 3.2% were "other" eye care practitioners. Highlights included:

- Asian practitioners expressed the greatest level of concern regarding the increased prevalence of paediatric myopia, with Chinese practitioners being more concerned than those from Hong Kong. While the rest of the world expressed similar levels of concern, of note was the fact that Canadian clinicians were less concerned than their US counterparts.
- Asian practitioners considered themselves to be more active in the implementation of myopia control strategies than those based in Australasia or Europe, with Chinese practitioners reporting the most

activity. North and South America were the least proactive.

- Orthokeratology was considered to be the most effective method of myopia control, followed by increased time outside. Under-correction of refractive error and single vision spectacles were considered to be the least effective.
- Despite the apparent understanding of options for myopia control, of note was the fact that the majority of myopes were prescribed single vision (full correction) spectacles or contact lenses.
- Where myopia control strategies are being employed, orthokeratology remains the most popular, particularly in Asia. Asian practitioners were also the most likely to adopt pharmaceutical agents for myopia control.
- The age at which practitioners consider myopia correction options varied considerably, dependent on the type of correction being recommended. It is of no surprise that single vision spectacles were prescribed from the youngest age, with pharmaceutical options being reserved for older children.
- Asian practitioners are likely to wait for higher levels of refractive error prior to prescribing any form of correction. Conversely, Asian practitioners would consider single vision soft lenses, novel myopia control lenses and orthokeratology at a lower level of myopia than those practitioners from Australasia and Europe. Indian practitioners required a higher level of myopia before they would consider bifocals or orthokeratology than their counterparts in China or Hong Kong.
- In general, there was agreement that single vision under-correction was not an effective strategy for myopia control, although South American practitioners were more likely to adopt this option than other practitioners around the globe.
- The majority of respondents indicated that myopia progression of 0.50 to 0.75D per year would warrant intervening with some form of myopia control. Practitioners in Australia were more willing to adopt myopia control methods with slower progressing rates of myopia than practitioners in Asia and North or South America. There was no difference in the myopia progression rate that would trigger myopia control in Europe, Asia or North America. There were several other factors that would impact the decision to consider myopia control, including family history and age of onset.
- When asked to identify the main reasons for not adopting myopia control strategies, there was general agreement between all continents. The most common reasons were a lack of adequate information, it being uneconomical, unpredictable outcomes and that the risks of certain treatments potentially outweighed their benefits.

In conclusion, this global survey was the first of its kind to examine self-reported attitudes and practices of eye care practitioners around the world. In general, Asian practitioners were more concerned about the increasing prevalence of myopia and were correspondingly more active in the area of myopia control. Orthokeratology was considered to be the most effective currently available method. Despite evidence to the contrary,[11, 18, 27] there remain practitioners who choose to prescribe single-vision under-correction to their myopic patients. Although there was self-reported activity in the area of myopia control, over two thirds of practitioners were prescribing single vision spectacles or contact lenses to their myopic patients with no attempt to limit myopia progression.

It is very apparent from this survey that there needs to be widespread education on the impact of myopia progression and the advantages of early intervention to abate this progression, in addition to improved access to evidence-based myopia control products.

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