

3rd International Conference and Expo on

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Prevalence and risk factors for myopia and hyperopia in an adult population in southern India

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Statement of the Problem: Myopia is the most common cause of refractive errors in both children and adults in many countries. Comparisons of adult myopia prevalence across countries are complicated by variations in the age ranges of populations studied, definitions of myopia and secular trends in environmental risk factor. The aim of this study was to investigate prevalence and risk factors for myopia, hyperopia and astigmatism in southern India.

Methodology: Randomly sampled villages were enumerated to identify people aged ≥ 40 years. Participants were interviewed for socioeconomic and lifestyle factors and attended a hospital-based ophthalmic examination including visual acuity measurement and objective and subjective measurement of refractive status. Myopia was defined as spherical equivalent (SE) worse than -0.75 diopters (D) and hyperopia was defined as $SE \geq +1D$.

Findings: The age-standardized prevalence of myopia and hyperopia were 35.6% (95% CI: 34.7–36.6) and 17.0% (95% CI: 16.3–17.8) of those with myopia, 70% had advanced cataract. Of these 79% had presenting visual acuity (VA) $<6/18$ and after best correction, 44% of these improved to $\geq 6/12$ and 27% remained with VA $<6/18$. In multivariable analyses excluding advanced cataract, increasing nuclear opacity score, current tobacco use and increasing height were associated with higher odds of myopia. Higher levels of education were associated with increased odds of myopia in younger people and decreased odds in older people. Increasing time outdoors was associated with myopia only in older people. Increasing age and female gender were associated with hyperopia and nuclear opacity score, increasing time outdoors, rural residence and current tobacco use with lower odds of hyperopia.

Conclusions: In contrast to high income settings and in agreement with studies from low income settings, we found a rise in myopia with increasing age reflecting the high prevalence of advanced cataract. This suggests that older people would benefit more from cataract removal than spectacle correction.

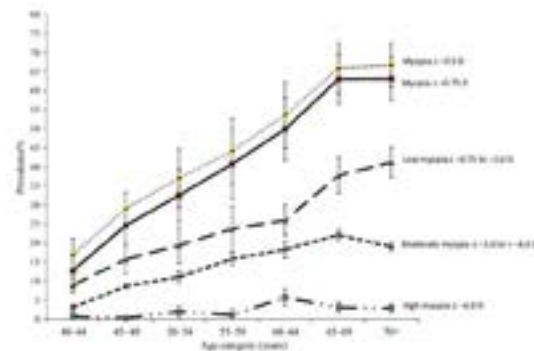


Figure 3: Prevalence of myopia and hyperopia (in %) by age group for different levels of cataract severity.

Recent Publications:

1. Morgan I G, Iribarren R, Fotouhi A and Grzybowski A (2015) Cycloplegic refraction is the gold standard for epidemiological studies. *Acta ophthalmologica* 93(6):581-5.
2. Foster P J and Jiang Y (2014) Epidemiology of myopia. *Eye* 28 (2): 202-8.
3. Pan C W, Cheng C Y, Saw S M, Wang J J and Wong T Y (2013) Myopia and age-related cataract: a systematic review and meta-analysis. *American Journal of Ophthalmology* 156 (5): 1021-33.

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4. Pan C W, Ramamurthy D and Saw S M (2012) Worldwide prevalence and risk factors for myopia. *Ophthalmic & physiological optics: the journal of the British College of Ophthalmic Opticians* 32 (1): 3-16.
5. Vashist P, Talwar B, Gogoi M, Maraini G, Camparini M, Ravindran R D, et al. (2011) Prevalence of cataract in an older population in India: the India study of age-related eye disease. *Ophthalmology* 118 (2): 272-8.

Biography

Sanil Joseph holds an MSc. in Public Health from the London School of Hygiene & Tropical Medicine and a Master's in Hospital Administration (MHA) from Mahatma Gandhi University, India. For the last 13 years, he has been working as a Senior Faculty and Health Management Consultant at the Lions Aravind Institute of Community Ophthalmology, Aravind Eye Care System, Madurai, India. His primary role in the organization is to anchor health services and epidemiological research, and he has published many scientific papers in reputed international peer reviewed journals. In 2012, he was awarded a Masters Fellowship from the Wellcome Trust UK as a part of which he successfully completed a Masters in Public Health with specialization in Health Services Research at the London School of Hygiene & Tropical Medicine. His current areas of research include refractive errors, use of telemedicine in screening of diabetic retinopathy and primary eye care.

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