

00531 **Six-year Incidence and Progression of Visual Impairment in a Multi-ethnic Asian Population: The Singapore Epidemiology Eye Disease (SEED) Study**

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Aims: To describe the incidence and progression of visual impairment (VI) in a multi-ethnic Asian population in Singapore.

Methodology: The Singapore Epidemiology of Eye Diseases Study comprised of 3 major Asian ethnic groups: Malays, Indians, and Chinese. Of 8,592 eligible participants from baseline, 6,762 (response rate 78.7%) were re-examined during the 6-year follow up (year 2011-2017). All participants underwent standardized examinations which included the measurements best-corrected visual acuity (BCVA). Any VI was further categorised into low vision (LV) and blindness which were defined as, BCVA <20/40 to \geq 20/200, and BCVA <20/200 in the better-seeing eye, respectively. Incidence VI was evaluated among those without VI at baseline. Incidence estimates were age-standardised to the Singapore Population Census 2010. Poisson binomial regression model was used to determine factors associated with incident VI.

Result: 6,524 individuals (1,800 Malays, 2,143 Indians, 2,581 Chinese) were included in the final analysis. The overall age-standardized incidences of LV and blindness were 3.3% (95% CI, 2.9% to 3.8%), and 0.2% (95% CI, 0.1% to 0.4%), respectively. Malays had significantly higher ($P < 0.001$) incidence rates of LV (5.1%) and blindness (0.4%), compared to Indians (LV: 2.1%; blindness: 0.1%) and Chinese (LV: 2.3%; blindness: 0.1%). Progression to blindness at 6-year follow up occurred in only 1.4% (95% CI, 0.6% to 16.1%) of those with LV at baseline. Older age (per decade, relative risk [RR], 2.64; 95%CI, 2.23-3.14), and lower socioeconomic status (RR, 2.56; 95%CI, 1.83-3.59) were significantly associated with best-corrected incident VI. Furthermore, individuals with 2 or more systemic co-morbidities at baseline were 1.95 times (95%CI 1.16-3.30) likely to develop VI, compared to healthy individuals.

Conclusion: In this multi-ethnic Asian cohort in Singapore, Malays have the highest VI incidence rate. These findings will be useful in the planning and designing of eye health services for Asia's rapidly developing urban communities.