

## High prevalence of myopia in an adult population, Shahroud, Iran

### PURPOSE:

To determine the prevalence of myopia and hyperopia and the associated risk factors in the presbyopic age group of the population in Shahroud, Iran.

### METHODS:

Through a multistage random cluster sampling approach, 6311 people of the 40- to 74-year-old population residing in Shahroud were invited to this study. The prevalence of a cycloplegic spherical equivalent (SE)  $\geq -0.5$  diopter (D) and hyperopia  $0.5 < D$  was determined by age and gender.

### RESULTS:

Of the invitees, 5190 (82.4%) participated in the study and data from 4864 people was used in the analyses. On the basis of cycloplegic refraction, the prevalence of myopia and hyperopia was 30.2% [95% confidence interval (CI): 28.9 to 31.5] and 30.6% (95% CI: 28.1 to 33.1), respectively. In the multiple logistic regression model, the odds of myopia significantly increased with higher education [odds ratio (OR) = 1.12,  $p < 0.001$ ] and nuclear cataract (OR = 3.23,  $p < 0.001$ ). After the age of 54 years, the odds of hyperopia significantly increased compared with the 40- to 44-year age group, whereas higher education and nuclear cataract had negative association with hyperopia. The prevalence of high myopia (SE  $\leq -1.0$  D) and high hyperopia (SE  $1.0 < D$ ) was 1.9% (95% CI: 1.5 to 2.3) and 1.1% (95% CI: 0.8 to 1.4), respectively. Nuclear cataract significantly correlated with high myopia (OR = 6.44) and older age significantly correlated with high hyperopia (OR = 1.12).

### CONCLUSIONS:

The prevalence of myopia was unexpectedly higher than that found in other parts of the Middle East. The prevalence of hyperopia was lower than that previously reported in Iran. Education correlated directly with myopia and inversely with hyperopia; however, nuclear cataract was the most important risk factor for myopia. Adjusted for other variables, the prevalence of hyperopia still increased with age.