

Prevalence and risk factors of refractive errors among schoolchildren in Mashhad, 2006-2007

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Abstract

Purpose: To determine the prevalence of refractive condition and its risk factors among students in Mashhad. **Methods:** A total of 2010 students representing a cross-sectional of the population of Mashhad were sampled using random cluster sampling strategy. Primary and middle school students underwent cycloplegic refraction. The refractive errors of high school students were measured using non-cycloplegic autorefraction. Myopia was defined as spherical equivalent (SE) of -0.5 diopter (D) or more, and hyperopia was defined as SE of $+0.5$ diopter (D) or more, and astigmatism of 0.75 cylinder diopter or greater. Examination was carried out in the school using standardized testing protocols. **Results:** 2100 students (group 1: 1163 primary and middle school, group 2: 937 high school students and 10 missed data) participated. The prevalence of refractive errors in the 1st group was: myopia=2.4%, hyperopia=8.9%, astigmatism=9.8% and anisometropia=3.0% (SE difference at least 1.00 D), and in the 2nd group myopia=24.1%, hyperopia=8.4%, astigmatism=11.8% and anisometropia=0.6%. There was significant difference in refractive errors between girls and boys ($P < 0.001$). In primary and middle school prevalence of myopia increased with age (OR=1.29% CI: 1.03 to 1.6 and $P = 0.013$). **Conclusion:** The prevalence of refractive errors among students in Mashhad is high. Effective detection and treatment of these refractive errors is expected to reduce the incidence of amblyopia and strabismus and also can prevent substantive effects on academic performance.

Reaxys Database Information

Author keywords

Anisometropia; Astigmatism; Hyperopia; Myopia; Prevalence; Refractive error

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