
TO THE EDITORS: We read with interest the meta-analysis of population-based, cross-sectional studies from the European Eye Epidemiology (E3) Consortium by Williams et al on the impact of educational level on myopia prevalence.1

The authors found that education was significantly associated with myopia, in the 13 studies from which these data were available (n = 60,125 participants), across all age strata (P < 0.0001). Age-standardized myopia prevalence for those participants completing primary (defined as those leaving school before 16 years of age), secondary (those leaving school up to 19 years of age), and higher education (those leaving school at or after 20 years of age) was 25.4%, 29.1%, and 36.6%, respectively.

In those aged 35–84 years, the prevalence in participants with higher education was approximately double than in those with primary education. However, a significant cohort effect for increasing myopia prevalence across more recent birth decades was identified across all educational groups. Although some younger subjects were more likely to have achieved a higher educational level, the authors stated that this alone did not explain the increasing myopia prevalence. They indicated that associations of educational level and birth cohort had an additive effect on the prevalence of myopia. The authors deemed that observed cohort effect was multifactorial and concluded that, although higher education expansion could be an explanation, it seemed to be one of several factors influencing the increase of myopia prevalence (they mentioned that in the latter half of the last century, there was also increasing use of computers, increasing length of the educational day with increased after-school activities, and less time spent outdoors).

Recently, Cuellar-Partida et al used a Mendelian randomization approach using polygenic risk scores of educational attainment as an instrumental variable to establish the causal effect of education on refractive error with a 2-step least-squares instrumental variable approach, estimated that each z-score increase in education (approximately 2 years of education) resulted in a myopic shift of 0.92±0.29 diopters. They suggested that observational studies might actually underestimate the true effect of educational attainment.2

It would be very interesting to quantitatively estimate the effect of education in the cross-sectional studies from the European Eye Epidemiology (E3) Consortium, having such a large sample.

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