Visual Impairment in Preschool Children in the United StatesDemographic and Geographic Variations From 2015 to 2060

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JAMA Ophthalmol. Published online May 4, 2017. doi:10.1001/jamaophthalmol.2017.1021

Question What are the demographic and geographic variations in visual impairment in preschool children in the United States in 2015 and what is the projected prevalence through 2060?

Findings In this prevalence study, the number of preschool children with visual impairment is projected to increase by 26% in 2060, with 69% of visual impairment resulting from simple uncorrected refractive error. Hispanic white children will account for the largest number and proportion of cases, followed by African American children.

Meaning Vision screening and early intervention targeting preschool populations might prevent unnecessary VI and associated developmental delays such as poor reading skills.

Abstract

Importance Visual impairment (VI) in early childhood can significantly impair development.

Objective To determine demographic and geographic variations in VI in children aged 3 to 5 years in the United States in 2015 and to estimate projected prevalence through 2060.

Design, Setting, and Participants Descriptive study reporting statistics estimated based on prevalence data from 2 major population-based studies conducted in the United States between 2003 and 2011. Using US census projections, prevalence of VI and cause-specific VI in the better eye were reported by race/ethnicity, state and region, and per capita prevalence of VI by state. The study included preschool children in the United States. Analyses for this study were conducted between February 2016 and March 2017.

Main Outcomes and Measures Prevalence of VI among children aged 3 to 5 years in the United States.

Results In 2015, more than 174 000 children aged 3 to 5 years in the United States were visually impaired. Almost 121 000 of these cases (69%) arose from simple uncorrected refractive error, and 43 000 (25%) from bilateral amblyopia. By 2060, the number of children aged 3 to 5 years with VI is projected to increase by 26%. In 2015, Hispanic white children accounted for the highest number of VI cases (66 000); this group will remain the most affected through 2060, with an increasingly large proportion of cases (37.7% in 2015 and 43.6% in 2060). The racial/ethnic group with the second most VI is projected to shift from non-Hispanic white children (26.3% in 2015 decreasing to 16.5% in 2060) to African American children (24.5% in 2015 and 22.0% in 2060). From 2015 to 2060, the states projected to have the most children with VI are California

(26 600 in 2015 and 38 000 in 2060), Texas (21 500 in 2015 and 29 100 in 2060), and Florida (10 900 in 2015 and 13 900 in 2060).

Conclusions and Relevance These data suggest that the number of preschool children with VI is projected to increase disproportionally, especially among minority populations. Vision screening for refractive error and related eye diseases may prevent a high proportion of preschool children from experiencing unnecessary VI and associated developmental delays.