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The Global Burden of Disease Study: the Impact of Vision Loss: prevalence and trends of blindness and visual impairment over the past 28 years

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Abstract

Purpose:

To estimate global 1990-2010 trends in visual impairment (VI) and blindness prevalence and its uncertainties, by sex, for 184 countries and territories in the 21 Global Burden of Disease subregions.

Methods:

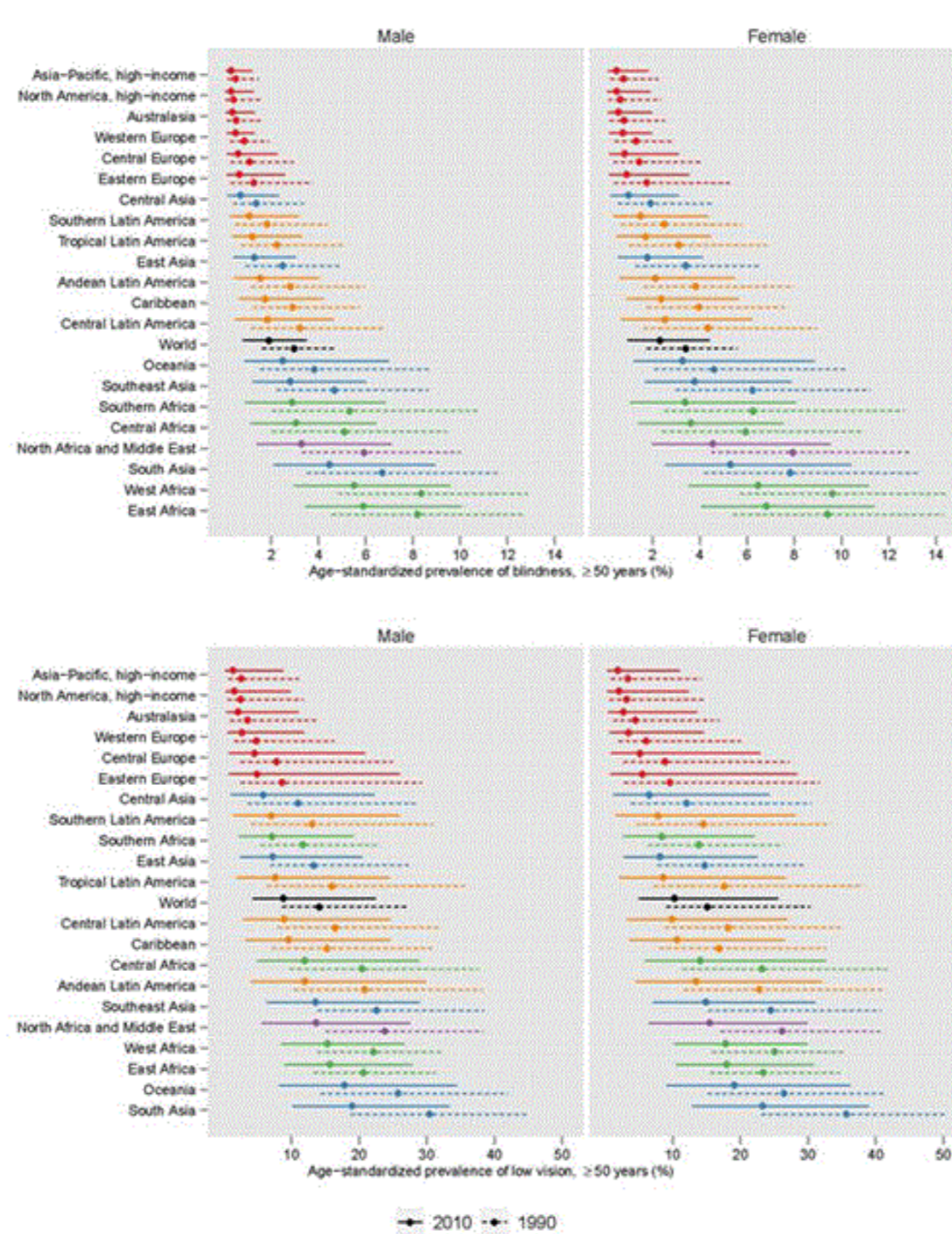
The following 5 steps were employed: 1) all published data since 1980 (and some unpublished) from population-based studies of VI and blindness were accessed, 2) conversion of VI data to two core levels (blind and low vision), 3) conversion of age-specific VI prevalence when data were not reported by age, 4) selection and use of a statistical model to estimate the prevalence of blind and the prevalence of low vision by country, age, sex, and year, and 5) conversion of VI data from the prevalence of low vision to the prevalence of severe, moderate, and mild vision impairment. Definitions were as follows: mild VI: <6/12 to 6/18 presenting visual acuity in the better eye, moderate VI: <6/18 to 6/60, severe VI: <6/60 to 3/60, blind: <3/60, low vision: combination of severe and moderate VI.

Results:

An estimated 35 million people (uncertainty interval 16-74 million) were blind in 2010, vs. 34 million in 1990 (19-59 million). Although the estimated number of blind people increased, the global age-standardized prevalence of blindness among adults over age 50 decreased from 3.2% (1.8%-5.8%) to 2.0% (0.9%-4.4%). Additionally there were an estimated 173 million persons with severe and moderate VI (83-446 million) and 152 million (74-327 million) with mild VI in 2010. Age-standardized prevalence of blindness for adults 50 and older in 2010 was highest in East and West sub-Saharan Africa (6.4% and 5.9%, respectively) and lowest in the high-income regions (0.4%-0.6%). In contrast, the age-standardized prevalence of low vision among adults 50 and older was highest in South Asia (21%, 12%-36%).

Conclusions:

The comprehensive 28 year span of data sources lends strength to the temporal observation of a reduction in global age-standardized blindness prevalence among older adults. Although there were considerable geographic variations in availability of eligible population-based data, this work highlights important regional differences in the burden of blindness and VI, which should be of use to policy-makers worldwide.



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Keywords: clinical (human) or epidemiologic studies: biostatistics/epidemiology methodology • clinical (human) or epidemiologic studies: prevalence/incidence • clinical (human) or epidemiologic studies: prevalence/incidence

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