Association Between Sociodemographic, Clinical Access, and Regional Factors with Diabetic Retinopathy in the National Health Interview Survey: A Cross-sectional, Population-Based Analysis

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Introduction: Diabetic retinopathy (DR) is the most common microvascular complication of diabetes and the
leading cause of blindness in working class adults in the United States. The impact of diverse social determinants of health (SDH) on the prevalence of DR is poorly understood. This study aimed to investigate the relationship between sociodemographic and healthcare access factors with DR prevalence in a large, nationally representative sample of the United States population.

Methods: This cross-sectional analysis included respondents to the 2017 National Health Interview Survey
(NHIS) who answered the question, "Have you ever been told by a doctor or other health professional that you had diabetic retinopathy?" Univariable and multivariable logistic regression was used to examine the association between DR prevalence and sociodemographic factors. The primary outcome was DR and the exposures included the following SDH: 1) healthcare access and quality, 2) economic stability, 3) education access, 4) neighborhood and built environment, and 5) social and community context.

Results: Of 26,966 eligible NHIS respondents (81.4%), 26,699 participants were eligible for participation, of whom 266 (1.0%) self-reported a DR diagnosis. Most participants were white (80.46%) and aged 50-64 (26.11%). Multivariable analysis found a significant association between DR prevalence and the following social determinants of health: poorer health status (OR=6.10; 95%CI=3.75-9.92; p<0.001), disability (OR 2.07; 95%CI 1.33 - 3.21; p=0.001), no employment (OR=1.77; 95%CI= 1.12 - 2.81; p=0.015), and living in Southern America (OR= 1.85; 95%CI= 1.072- 3.20; p=0.028). Having a usual place for healthcare (OR 0.28; 95% CI 0.12 - 0.69; p=0.005) and female sex (OR= 0.58; 95%CI= 0.42 - 0.82; p=0.002) was negatively associated with DR prevalence.

Conclusions: Multiple sociodemographic factors are associated with DR prevalence. Health care providers and policymakers should tailor future interventions to address the social determinants of health in a
holistic model of DR screening and care.