

# It's Time We Reform Our Perspectives on Race and Glaucoma

Kang et al.<sup>1</sup> used self-reported race to analyze visual field data among patients with newly diagnosed primary open-angle glaucoma (POAG) using three United States population-based health studies: the Nurses' Health Study (NHS), NHS2, and the Health Professionals Follow-up Study (HPFS). They found higher incidence and severity of POAG among Black patients compared with other groups. We commend the authors for acknowledging the likely multifactorial origin of these racial differences, including disparities in social determinants of health and chronic stress due to lifelong discrimination and marginalization, rather than pointing exclusively to presumed genetic differences. As the broader medical community has started to reform its approach to race in disease diagnostics and research, it's time we also take a fresh perspective on racial disparities in glaucoma risk.

Race and its relationship to glaucoma has been studied extensively across multiple decades.<sup>2-7</sup> However, several landmark studies oversimplified race as a surrogate for genetics or as a diagnostic marker of disease. The Baltimore Eye Survey suggested, without evidence, that genetic differences may explain the higher risk of POAG for Black people.<sup>5</sup> The Ocular Hypertension Study also identified higher risk of POAG development among Black people, although controlling for enlarged vertical cup-to-disk ratio and thinner central corneal thickness eliminated those differences.<sup>4</sup> The Advanced Glaucoma Intervention Study reported worse baseline visual field scores for Black patients compared to White patients, and treatment algorithm recommendations differed by race. However, only genetic differences were suggested as a reason for racial disparities.<sup>6,7</sup> The continued use of race as a descriptive identifier in clinical research without a better understanding of its relationship to the studied outcome reinforces the concept of race as biologically meaningful while ignoring important social factors contributing to racial disparities.

Newer perspectives on how to approach the role of race in medicine call into question many of the conclusions of these landmark glaucoma studies.<sup>8-14</sup> It must be emphasized that race is a social construct that frequently changes with time because of shifting geopolitical landscapes. Recent anthropo-

logic and genetic analysis has demonstrated conclusively that modern humans do not have biologic races.<sup>14,15</sup> Moreover, racial categories represent mixed and variable ethnic origins.<sup>13</sup> Although ancestry or genetic admixture may play a role in biologic determinants of disease, the associations of race and disease have been shown to derive primarily from social factors, such as racism and social determinants of health.<sup>10,11,15</sup> If these data are known, why has ophthalmology and the broader medical community continued to hold antiquated perspectives on race and medicine, such as using race as a surrogate for genetics and as a clinical predictor of disease risk? The truth is that a sad history of racism in medicine continues to plague modern-day medical and ophthalmologic curriculum. Starting in the era of American slavery, medicine has been used to uphold unscientific perspectives on inherent differences between the races to justify Black oppression. These trends continued into the twentieth century, with medical physicians providing poorly researched data to lend scientific support for Jim Crow laws, the eugenics movement and the Tuskegee experiments. Although modern medicine's perspectives on race no longer associate with these terrible objectives, continued racialization of disease, often based on weak data or biased assumptions, has negative impacts on implicit racial bias among medical students and the broader community. These impacts include propagating unconscious stereotypes that Black people are inherently different or even inferior to White people.<sup>8,12,16</sup> Furthermore, racialization of disease leads to flawed medical decision-making, such as an overreliance on race to make treatment and diagnostic decisions.

But what to make of racial differences in glaucoma risk? The study by Kang et al.<sup>1</sup> only included health care professionals, therefore largely controlling for financial status and education. Yet disparities were still apparent. Successful management of POAG particularly hinges on the doctor-patient relationship because glaucoma is a silent disease; trust in the doctor's recommendations fuels adherence to treatment plans that are inconvenient, uncomfortable, and costly. Traumatic historical relationships to medical institutions and implicit bias from ophthalmologists and staff

paired with rare opportunities to receive care from a Black ophthalmologist may contribute to known lower adherence to treatment and lower frequency of follow-up visits for Black glaucoma patients, as seen in this and other studies.<sup>1,17–20</sup> In addition, racial disparities in cardiovascular risk factors, with demonstrated associations to chronic stress from racism, have been posited to play a role in increased glaucoma risk for Black patients.<sup>21</sup> A better understanding of the social origins of racial disparities in glaucoma carries important actionable implications, such as the need to increase efforts to diversify the ophthalmologic workforce.

Our understanding of race and genetics have progressed over the last 30 years, and future endeavors to elucidate the role of race in medicine should reflect this. The American Medical Association published guidance for reporting race in research. In it they recommend that “race and ethnicity should not be considered in isolation but should be accompanied by reporting of sociodemographic factors and social determinants.”<sup>22</sup> As researchers and clinicians, we need to abandon the use of race as a medical diagnostic tool and focus on racial disparities in disease outcomes based on social determinants of health and the impacts of racism. By focusing on the true origin of racial disparities, we may identify more effective interventions that improve glaucoma outcomes for our most vulnerable and marginalized patients.

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