Racial/Ethnic Disparities in Ophthalmology Clinical Trials Resulting in US Food and Drug Administration Drug Approvals From 2000 to 2020

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Given the importance of access to emerging therapeutics, efforts have been made to address the impact of racial/ethnic disparities in clinical research during the past 30 years. Researchers in this cohort study used data from participants in clinical trials of drugs for neovascular age-related macular degeneration (AMD), open-angle glaucoma (OAG), and expanded indications for diabetic retinopathy (DR) to evaluate the racial/ethnic representation, trends and disparities in clinical trials leading to ophthalmology drug approvals.

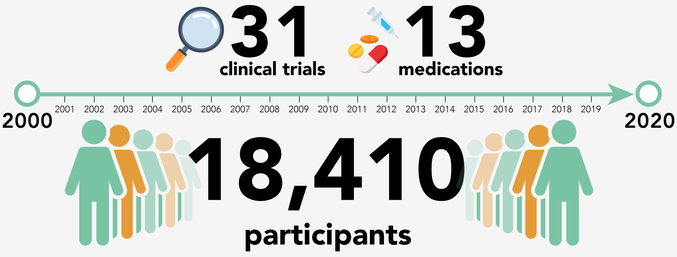
Epidemiological studies have demonstrated a myriad of racial/ethnic and sex variations in the prevalence and disease course of common ocular diseases, including, OAG, AMD, and DR.

These population-based epidemiological studies have established critical racial and demographic differences, but historically they have not been sufficiently nuanced to be representative of the entire US population.

Despite US FDA direction on clinical trial demographic subgroup inclusion in 2012, with guidance for NIH–defined phase 3 trials in 2017, and suggestions to promote inclusivity in 2020, a review of race/ethnicity reporting within ophthalmology literature suggested that only 43% of manuscripts in 2019 included race and/or ethnicity data. Additionally, a prior study on sex and ethnic composition of clinical trials for ophthalmological NMEs found no significant change in demographic composition from 2006 to 2016, a potentially probelmatic finding if the trial composition is not representative of the US population.

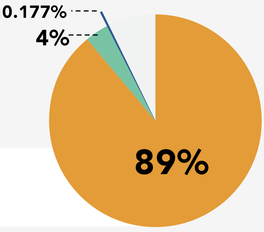
US FDA = United States Food and Drug Administration; NIH = National Institutes of Health; NME = new molecular entity.

In this study, the actual racial/ethnic distribution of trial participants was different from the expected trial demographic distribution for most approvals.

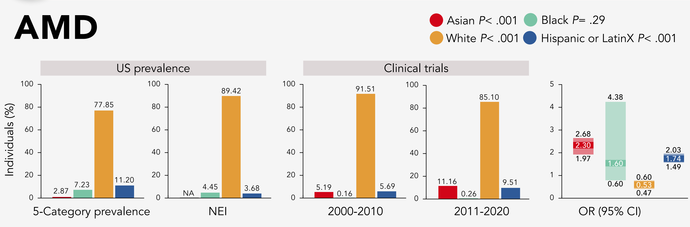


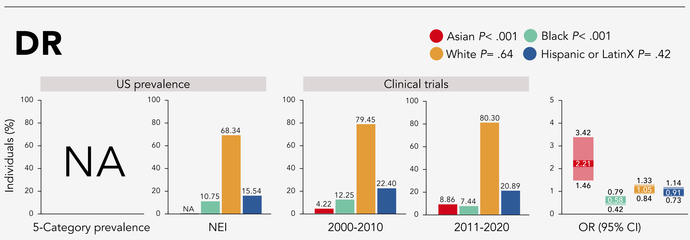
Example of enrollment disparity

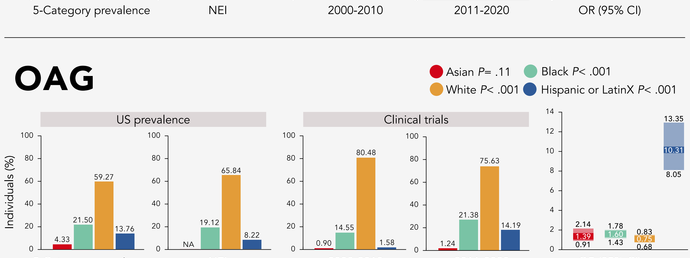
Over the past 20 years, Black participants comprised **0.177%** of AMD trial participants. Given that African American individuals may be disproportionately affected by surgically treatable or preventable causes of blindness, such as cataract, glaucoma, and DR, it is critical to promote equitable participation in trials for emerging therapeutics.



There were increases in enrollment for some racial groups but decreases for others, with evidence of participant underrepresentation compared with US prevalence, depending on disease.







The most concerning explanation for the underrepresentation of certain demographic groups is an underlying systemic barrier to enrollment in rigorous clinical studies.

Financial resources, transportation, employment, and other factors may additionally prevent the consistent follow-up required for clinical trial protocols.

Participation in clinical studies requires trust in the health care system and sufficient health literacy.

Certain populations may have reservations about participating in trials involving non-FDA approved therapies. For example, for prostate cancer, Black men were found to be more likely than White men to harbor suspicion of the health care system, and this was associated with less willingness to discuss clinical trials.

This study has limitations; there was inconsistent and variable race/ethnic category reporting.

Conclusions

This cohort study revealed that from 2000 to 2020, Black and Hispanic or Latinx participants were underrepresented in clinical trials leading to FDA ophthalmology drug approvals compared with the expected disease burden and racial distribution in the US. The disparity has narrowed over time, and further efforts should focus on engagement of underrepresented groups. Diverse, representative enrollment in pivotal clinical trials is vital to sufficiently power subgroup analyses and ensure equity and validity of trial results.