

- 1. Vision impairment was positively associated with subjective cognitive decline (SCD) across AI/AN, Hispanic, Black, and White adults, strongest among Hispanic, AI/AN, and Black adults.** No significant association was observed among Asian adults.
- 2. Population attributable fractions (PAF) of vision impairment for SCD were highest among Black and Hispanic adults, followed by AI/AN adults,** suggesting potential population-level impact of vision care interventions among those populations.

BACKGROUND

- Vision impairment and dementia are both leading causes of disability and reduced quality of life among older adults.
- Evidence from prior studies suggests that untreated vision loss is a modifiable risk factor for dementia, and vision impairment is positively associated with SCD, an early marker of cognitive impairment and dementia.
- However, the association between vision impairment and SCD in the American Indian and Alaska Native (AI/AN) population and the PAF of vision impairment for SCD have not been examined or compared with other racial and ethnic groups.

OBJECTIVE

- Examine and compare the association between vision impairment and SCD across AI/AN, Asian, Hispanic, Black, and White adults.
- Examine and compare the PAF of vision impairment for SCD across the five racial and ethnic groups.

METHODS

Data Source and Study Population

- Data were obtained from the 2023 Behavioral Risk Factor Surveillance System (BRFSS).
- The final sample included 152,442 adults aged 45 years and older from 36 states and territories who completed both the vision impairment and cognitive decline questions.
- Racial and ethnic breakdown: 2,110 AI/AN, 11,256 Hispanic, 3,382 Asian, 11,072 Black, and 124,522 White participants.

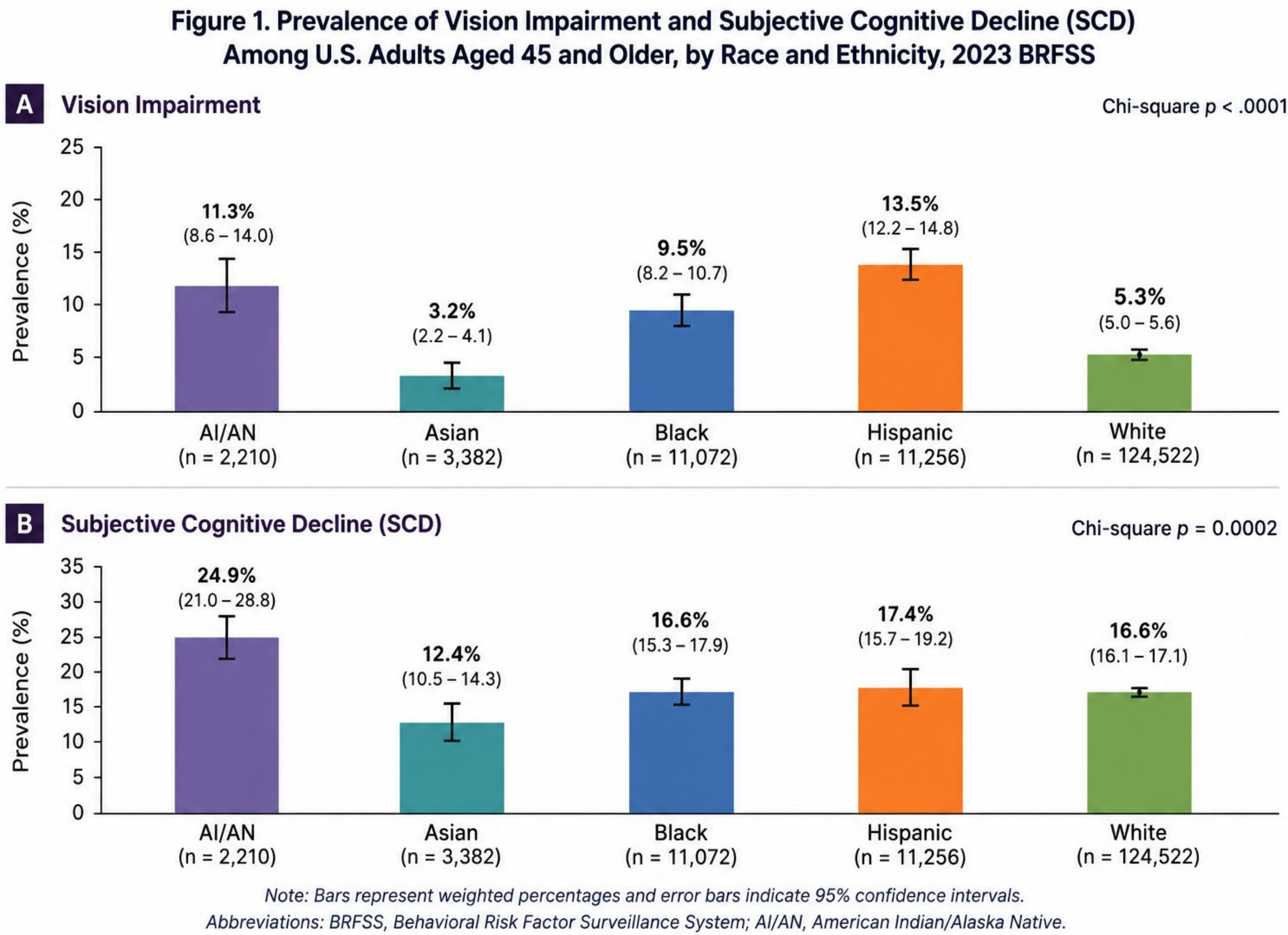
Study Measures

- Exposure:** Vision impairment "Are you blind or do you have serious difficulty seeing, even when wearing glasses?"
- Outcome:** Subjective cognitive decline (SCD) "During the past 12 months, have you experienced difficulties with thinking or memory that are happening more often or are getting worse?"
- Covariates:** age, sex, socioeconomic status, health-related behaviors, and health conditions.

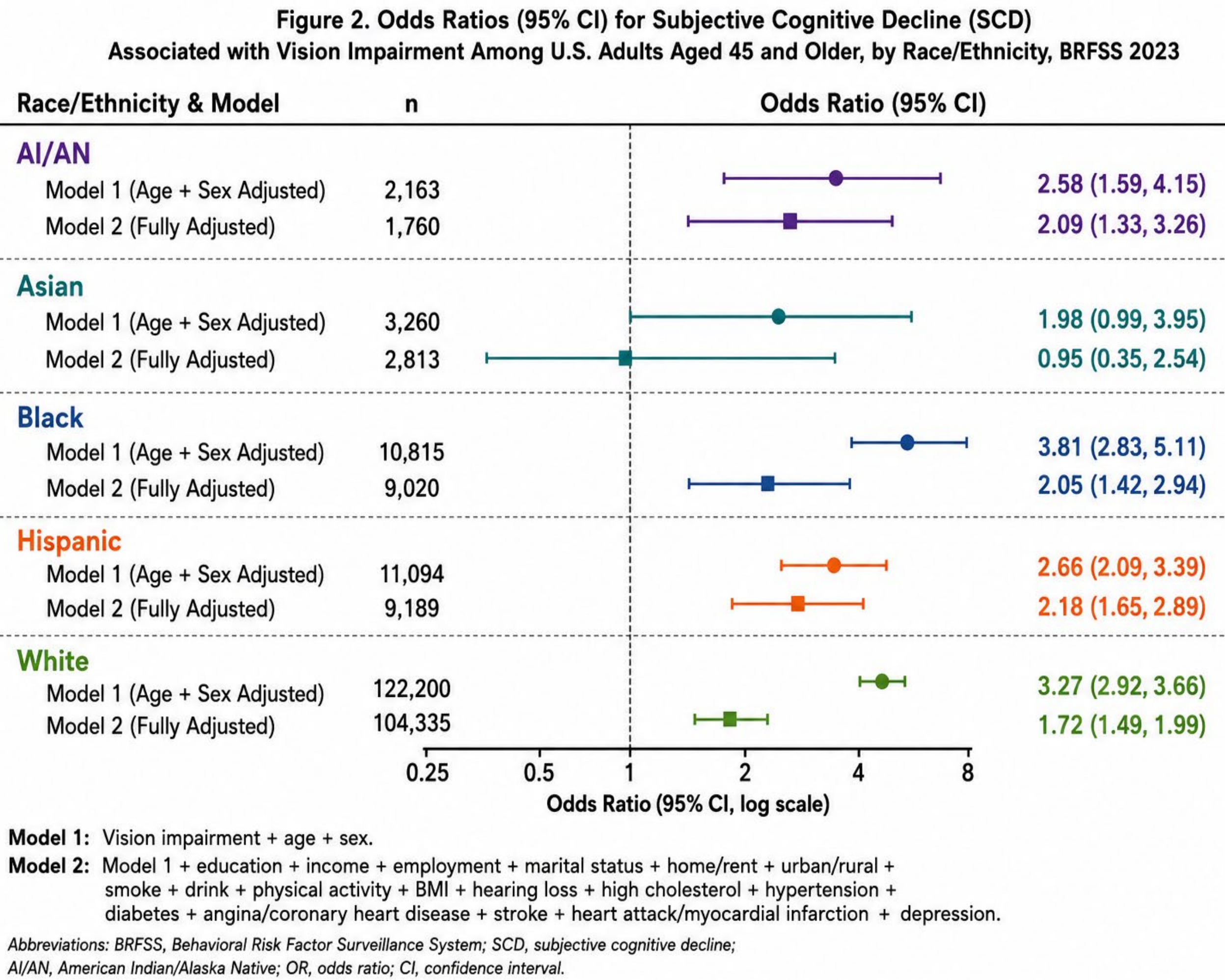
Statistical Analysis

- Prevalence of vision impairment and SCD** were calculated for AI/AN, Asian, Black, Hispanic, and White participants.
- Logistic regression was employed to assess **the association between vision impairment and SCD** within each racial and ethnic group, adjusting for sociodemographic characteristics, health-related behaviors, and health conditions.
- The population attributable fractions (PAF)** were estimated using a survey-weighted, age- and sex-adjusted, logistic regression within a counterfactual framework comparing each individual’s predicted SCD risk under vision impairment status versus non-vision-impairment status.

RESULTS

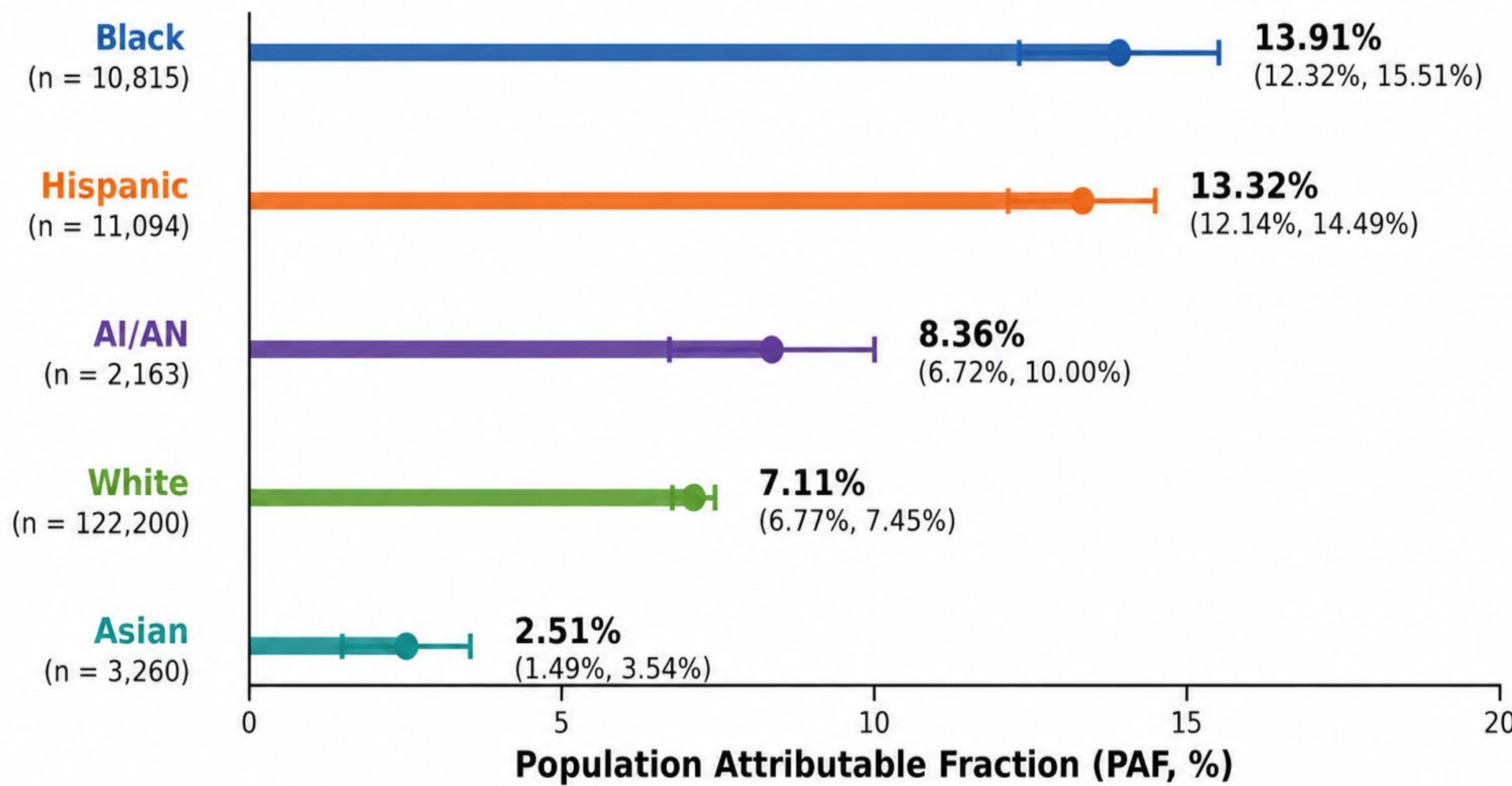


- The vision impairment prevalence** was notably higher among Hispanic, AI/AN, and Black participants compared to White and Asian participants.
- The SCD prevalence** was notably high among AI/AN participants.



- Vision impairment was positively associated with SCD** in all groups, except for Asian participants, after adjusting for all covariates.
- The strongest associations** were observed among Hispanic, followed by AI/AN, Black and White participants.

Figure 3. Population Attributable Fraction (PAF) for Subjective Cognitive Decline (SCD) Associated with Vision Impairment, by Race and Ethnicity, BRFSS 2023



Abbreviations: BRFSS, Behavioral Risk Factor Surveillance System; AI/AN, American Indian and Alaska Native; PAF, population attributable fraction; CI, confidence interval.

- Vision impairment accounted for a considerable proportion of the risk for SCD across race and ethnic groups.
- PAFs were highest among Black and Hispanic participants,** followed by AI/AN adults.

CONCLUSIONS

- This study demonstrates substantial racial and ethnic disparities in both vision impairment and SCD.
- Vision impairment was associated with higher odds of SCD across multiple racial and ethnic groups, with the strongest associations observed among Hispanic, AI/AN, and Black adults.
- The particularly high PAFs among Black and Hispanic adults suggest that vision interventions may have the greatest population-level impact among Black and Hispanic adults.
- Because vision impairment can often be prevented, treated, or rehabilitated, interventions such as routine eye examinations, and cataract surgery may help reduce future cognitive decline.
- The PAF findings suggest that these interventions may yield the greatest benefits among Black, Hispanic, and AI/AN adults.

LIMITATIONS

- Cross-sectional design precludes causal inference.
- Vision impairment and SCD were self-reported.
- Some racial and ethnic groups may be underrepresented due to language barriers, geographic isolation, or limited survey participation.
- Residual confounding may remain despite extensive adjustment.

Acknowledgments

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