

EP17.16: Interacting Demographical Factors Associated with Lung Cancer Screening Non-Participation in a National Cohort

YANNAN LIN¹, Yiming Xue², Noor Jahanshahi¹, Denise R. Aberle¹, William Hsu¹, Ashley Elizabeth Prosper¹
¹ Medical & Imaging Informatics, Department of Radiological Sciences, University of California, Los Angeles, CA, USA
² Department of Statistics and Data Sciences, University of California, Los Angeles, CA, USA
Correspondence: yannanlin@mednet.ucla.edu

INTRODUCTION

- Lung cancer screening (LCS) reduces mortality, yet uptake in the United States remains low more than a decade after implementation.
- Improving participation requires a nuanced understanding of the factors that influence screening behavior.
- Prior research has largely emphasized individual-level determinants, including insurance coverage, income, comorbidities, and geographic variation.
- In this study, we examined interactions among demographic factors to identify subgroups in which targeted interventions may increase participation.

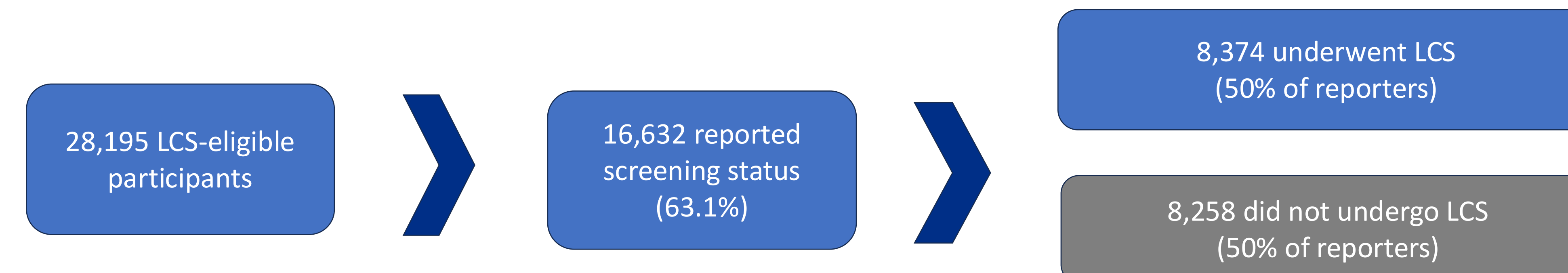
METHODS

Design:

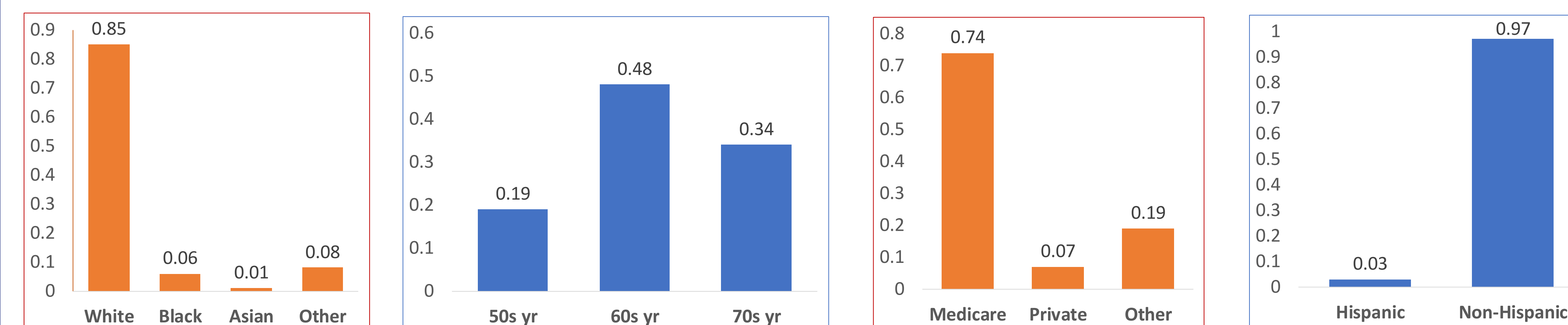
- We identified LCS-eligible participants based on the 2021 United States Preventive Services Task Force guidelines using data from the 2022 Behavioral Risk Factor Surveillance System.
- Chi-squared tests compared differences in LCS participation across subgroups, whereas interactions among readily available demographic variables in the medical records, including age, insurance status, and race, were assessed using factorial analysis of variance (ANOVA) on participation rates.

RESULTS

Inclusion of Participants:

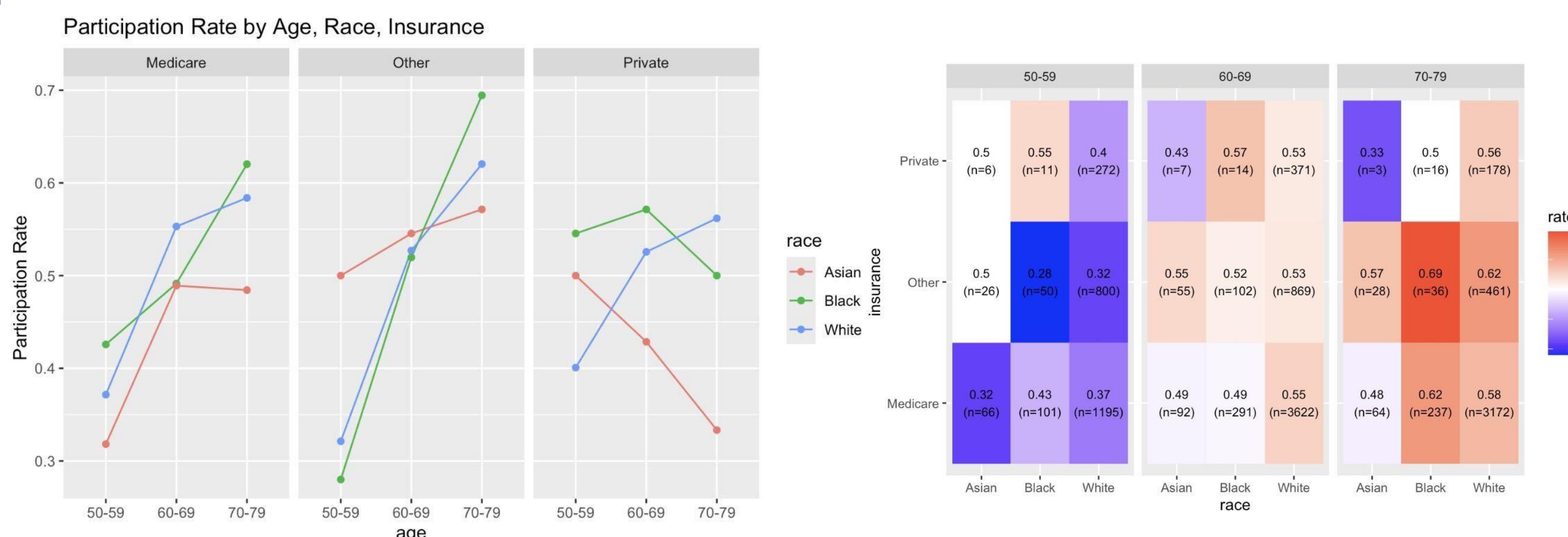


Demographic Composition of Subgroups with Higher Screening Participation among Eligibles:



Factorial Design Analysis:

- It studies the effect of multiple factors simultaneously and considers all possible combinations of factor levels on screening participation rates
- Adjusted the factor level to fit the model
 - Age: 50-59, 60-69, 70-79; Race: White, Black, Asian; Insurance: Medicare, Private, Other
- White: an increasing trend in participation rate with age, regardless of insurance type
- Asian: the participation rate fluctuated or decreased with age among Medicare and privately insured participants, respectively
- Blacks with private insurance: first increased with age, then decreased



DISCUSSION AND CONCLUSION

Actionable Take Away Message

- LCS-eligible individuals exhibit distinct screening participation patterns across age, race, and insurance groups, underscoring the need for targeted interventions to improve screening uptake in certain subgroups.

Future Direction for Research

- Future analyses will incorporate additional risk factors, such as comorbidities and socioeconomic status, and validate these findings in other national cohorts with larger Asian subgroup sample sizes.

REFERENCES AND ACKNOWLEDGEMENTS

References

- Centers for Disease Control and Prevention (CDC). Behavioral Risk Factor Surveillance System Data. Atlanta, Georgia: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, 2026

Funding Support

- This study was supported by the UCLA Jonsson Comprehensive Cancer Center Postdoctoral Fellowship and the UCLA Clinical & Translational Science Institute TL1 postdoctoral fellowship

Artificial Intelligence (AI) Use

- None