

An Ontology-Guided Analysis to Unveil Disparities of Social History Documentation in Discharge Notes

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BACKGROUND

Social history documentation in discharge notes is essential for integrating social and medical care¹. However, an extraction from the MIMIC-IV database shows that only 9,128 out of 331,793 discharge notes include a social history section, with significant variability in length and content, as Figure 1 shows. This study analyzes disparities in social history documentation across racial groups, focusing on “behavior and lifestyle,” “economic stability,” and “social and community context.”

Social History 1:

Currently homeless. In the recent past has been *living in “crack houses” and half-way houses*. The patient is a retired ____, now on *disability*. She had previously been living with her aunt, also an IV drug abuser, and her 3 children. She broke up with a same-sex partner in ____. Pt born in ____, moved into __ years ago and __ daughter living with the grandmother. She was *incarcerated* for __ years for grand theft auto, armed robbery, and DWI. She was recently released from prison. She has a 25-pack-year tobacco history, still *smoking* 1 pack a day and frequent (approximately 2 drinks per day) *alcohol* use. She has a history of abuse, especially crack cocaine and heroin (sniffing). She denies any IV drug abuse x years. Approximately 20 detox attempts, most recently in (quit because she “was discriminated against”). The longest sobriety was __ years while in prison. Notably, she denies any significant alcohol use - beers per week.

Social History 2:

Married, has 3 children

Social History 3:

non-smoker

Figure 1. Examples of social history in MIMIC-IV discharge notes

METHODS

Study Design This retrospective study analyzed racial disparities in social history documentation in discharge notes from the MIMIC-IV database.

Participants 200 discharge notes with social history sections were manually annotated by 3 annotators.

Data Collected Annotations were based on the Social Determinants of Health Ontology (SDoHO)², focusing on “behavior and lifestyle,” “economic stability,” and “social and community context,” labeled as boolean variables (“0” for not documented, “1” for documented). Inter-Annotator Agreement (IAA) on 20 notes showed a Fleiss’ kappa of 0.907.

Outcomes The primary outcome was documentation presence for each social determinant category by race.

Statistical Analysis Logistic regression assessed associations between race and documentation, using bootstrapping (10,000 samples) for robust inference. Odds ratios (OR) with 95% confidence intervals (CI) were calculated, with White as the reference group.

RESULTS

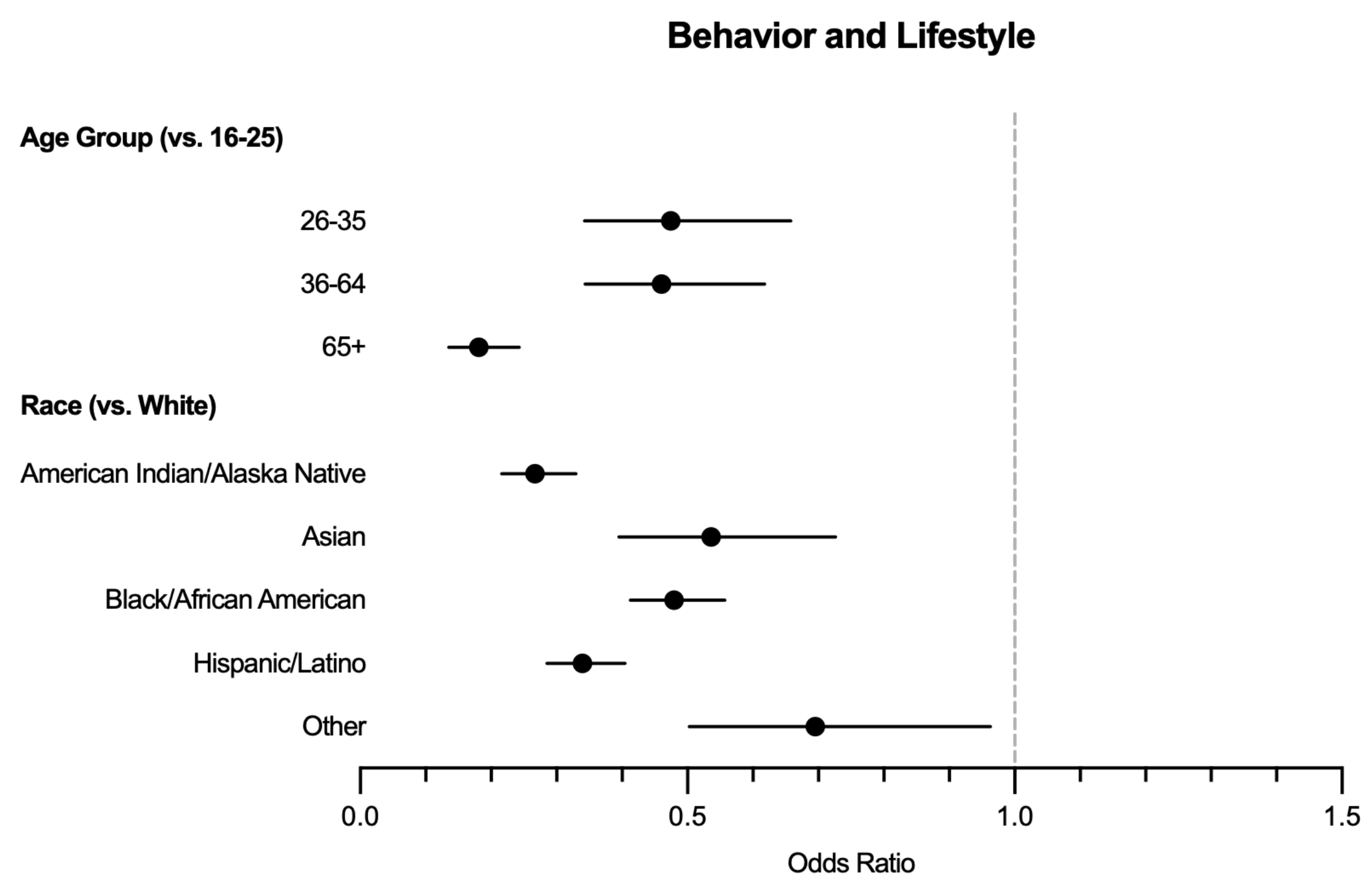


Figure 2. Disparity of Social History Documentation in Behavior and Lifestyle

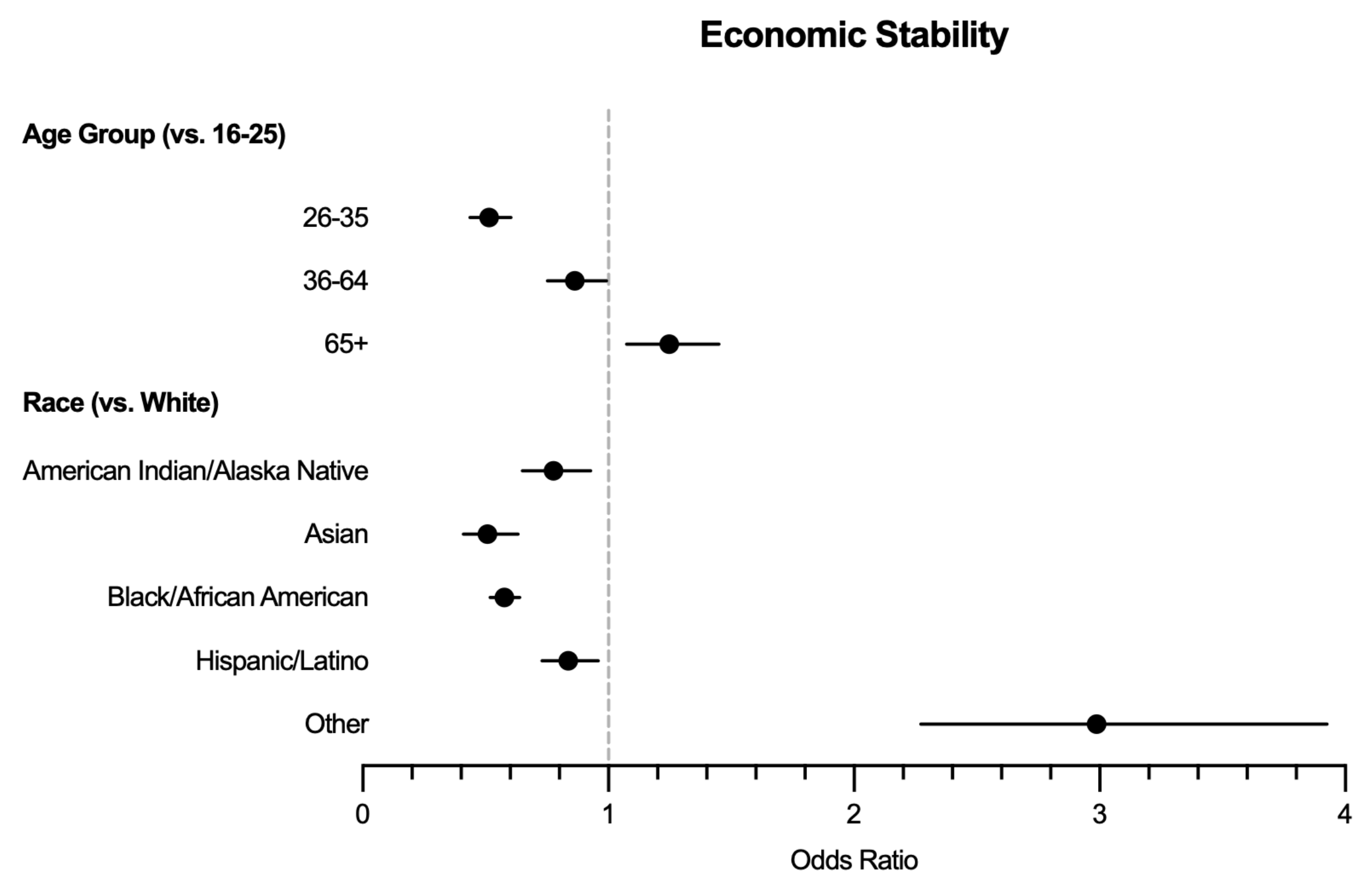


Figure 3. Disparity of Social History Documentation in Economic Stability

DISCUSSION AND CONCLUSIONS

Our findings reveal significant disparities in the documentation of social history across different racial groups. Black and Asian patients had “behavioral and lifestyle” comments about half as frequently as white patients (and AI/AN even less frequently). These disparities underscore the need for improved documentation practices to ensure equitable consideration of social determinants of health in patient care.

REFERENCES

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