

History of Incarceration and Current Mental Health Outcomes:

Findings from the 2011 Los Angeles County Health Survey

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Background

- **Mental Health as a Public Health Issue**
 - Mental health disorders can affect individuals at any point
 - Interplay of biological, social and environmental factors
 - Lead to risky behaviors
 - Disruptive daily functioning
 - Impaired social relationships
 - Premature death
- In 2015, 18.2% (~ 42.5 Million adult Americans) suffer from mental illness¹
- In 2013, Suicide was the 10th leading cause death (~40,000 deaths)² in the U.S.
- Estimated U.S. economic burden ~ \$300 Billion/year³

1. Mental Health America: Parity or Disparity: The State of Mental Health in America 2015.

2. Centers of Disease Control and Prevention (CDC): National Center for Injury Prevention and Control

3. US Department of Health and Human Services. National Institutes of Health, NIH News: Mental Health Disorders Cost Society Billions in Unearned Income.

Incarceration in the United States

- Highest rate of any country
- >50% of all prison and jail inmates have a mental health problem⁴
 - 45% Federal, 56% State, 64% local inmates
- Rates have quadrupled and increased more rapidly among women
- Post-release ramifications can amplify negative social determinants of health
 - Adverse Psychiatric Health
 - Homelessness
 - Unemployment
 - Discrimination

4. Imprisonment rate of sentenced prisoners under the jurisdiction of state or federal correctional authorities per 100,000 U.S. residents, December 31, 1978-2013. Bureau of Justice Statistics

Study Objectives

- To conduct an assessment of the mental health of Los Angeles County Adults (18+ years old) exposed to incarceration
- To determine and quantify the relationship between having a history of incarceration (HOI) and risk of having any “current” mental health outcomes

Methods



Methods

- **Adult 2011 Los Angeles County Health Survey (Total n= 8,036, effective n=7,679)**
 - Population based random-digit-dialed(RDD) telephone survey
 - Cell phone component
 - 6 languages: English, Spanish, Mandarin, Cantonese, Vietnamese, Korean
 - Weighted to reflect the non-institutionalized LA County population
- Survey includes information on health conditions, health behaviors, healthcare access and utilization and other health related data

Methods (ctd)

- Respondents were asked questions to determine the following:
- **Any Current Mental Health Outcomes (AnyMHO)**
 - An inclusive measure that combines the following indicators to allow for improved statistical stability:
 - **Current depression and/or current anxiety (CDASP)**
 - **Being at risk for major depressive episode (PHQ2)**
 - **Experiencing frequent mental distress (FMD)**

Current Depression and/or Anxiety (CDASP)

- Assessed among those **ever diagnosed** with depression or anxiety, stress disorder, or phobia
- Follow-up Questions:
 - Are you currently **taking medicine** prescribed by a doctor or a psychiatrist for this disorder?
 - Are you currently **receiving counseling** from a mental health professional, such as a psychiatrist, psychologist, psychotherapist, social worker, or counselor for this disorder?
 - Are you **currently experiencing or suffering from symptoms** of this disorder?
 - Are you **currently being treated** for this disorder?

Risk for Major Depressive Episode

Patient Health Questionnaire -2 (PHQ2)

- Validated initial screening test for major depressive episode
- First 2 items of the PHQ-9
- Questions:

Over the **past two weeks**, how often were you bothered by

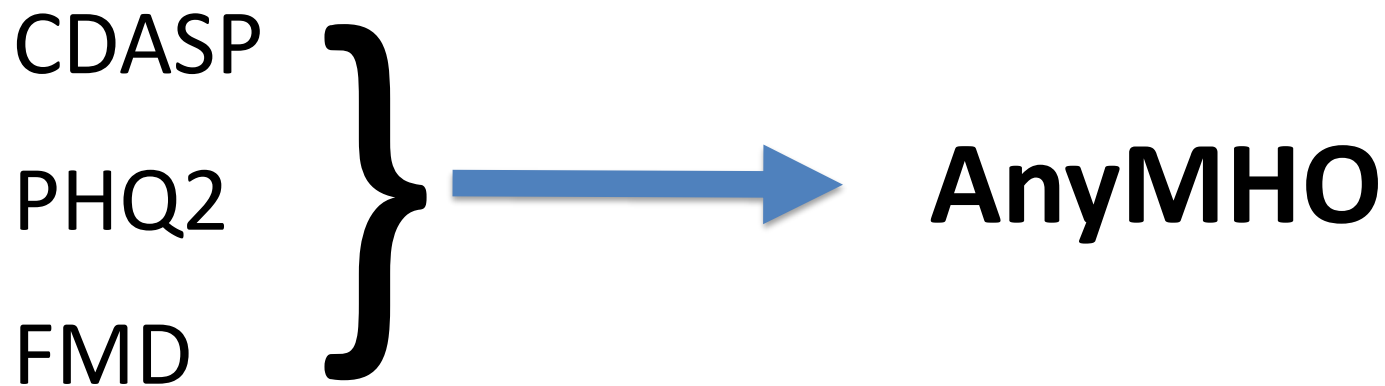
- 1. Little interest or pleasure in doing things**
- 2. Feeling down, depressed, or hopeless**

Frequent Mental Distress (FMD)



- Experiencing stress, depression, or emotional problems for **14 or more days** in the previous 30 days

The 14-day period is used because it is often considered a marker for clinical depression and anxiety disorders



History of Incarceration (HOI)

- Respondents were asked:

As an adult, have you ever spent more than 24 hours living in a detention center, jail or prison?

Methods (ctd)

- **Descriptive Analyses**

- To assess the variation in prevalence estimates for current mental health outcomes among different socio-demographic groups

- **Multivariate Logistic Regression Modeling**

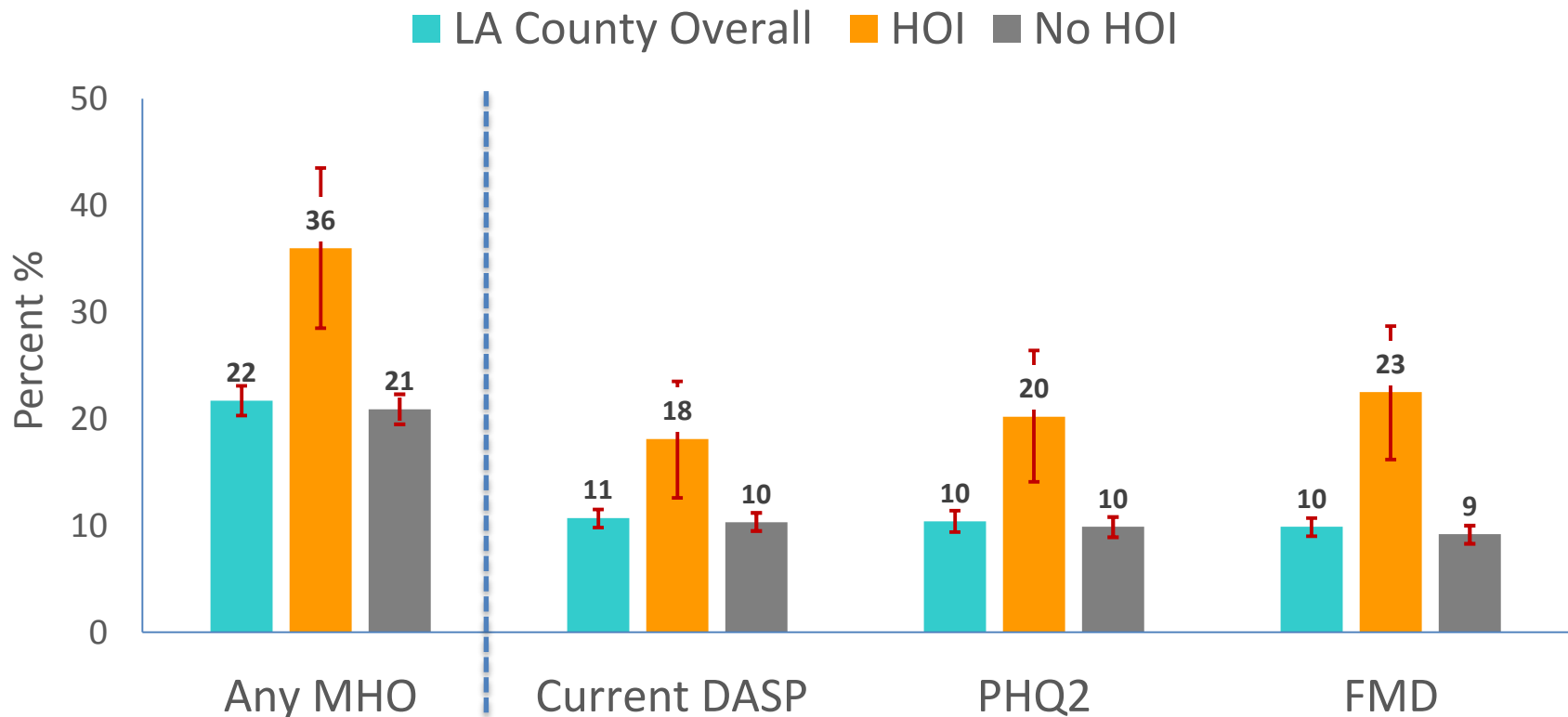
- To determine if **HOI** is associated with current mental health (**AnyMHO**) while controlling for multiple covariates:

Age, Gender, Race/ethnicity, Income, and Housing Instability

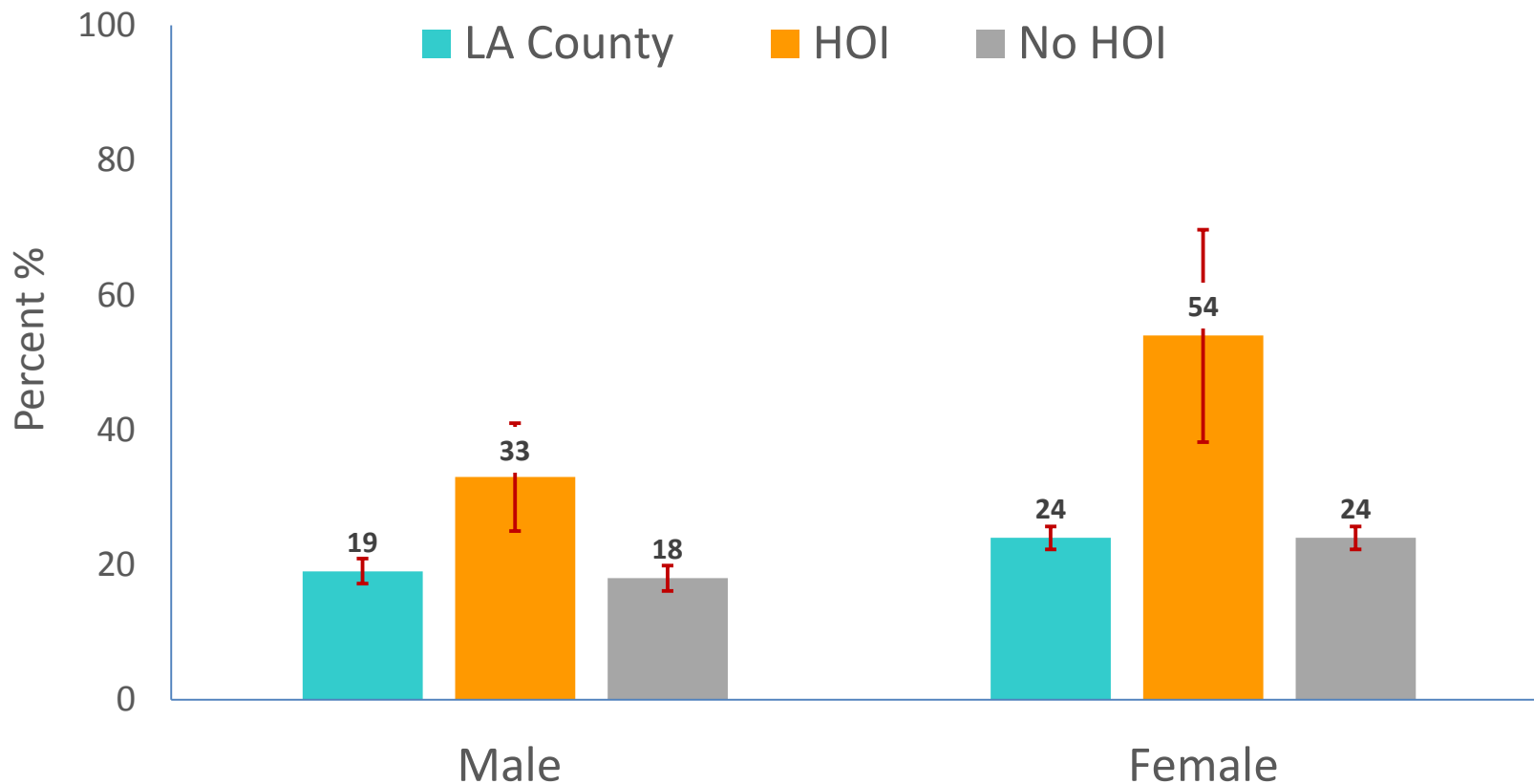
Results



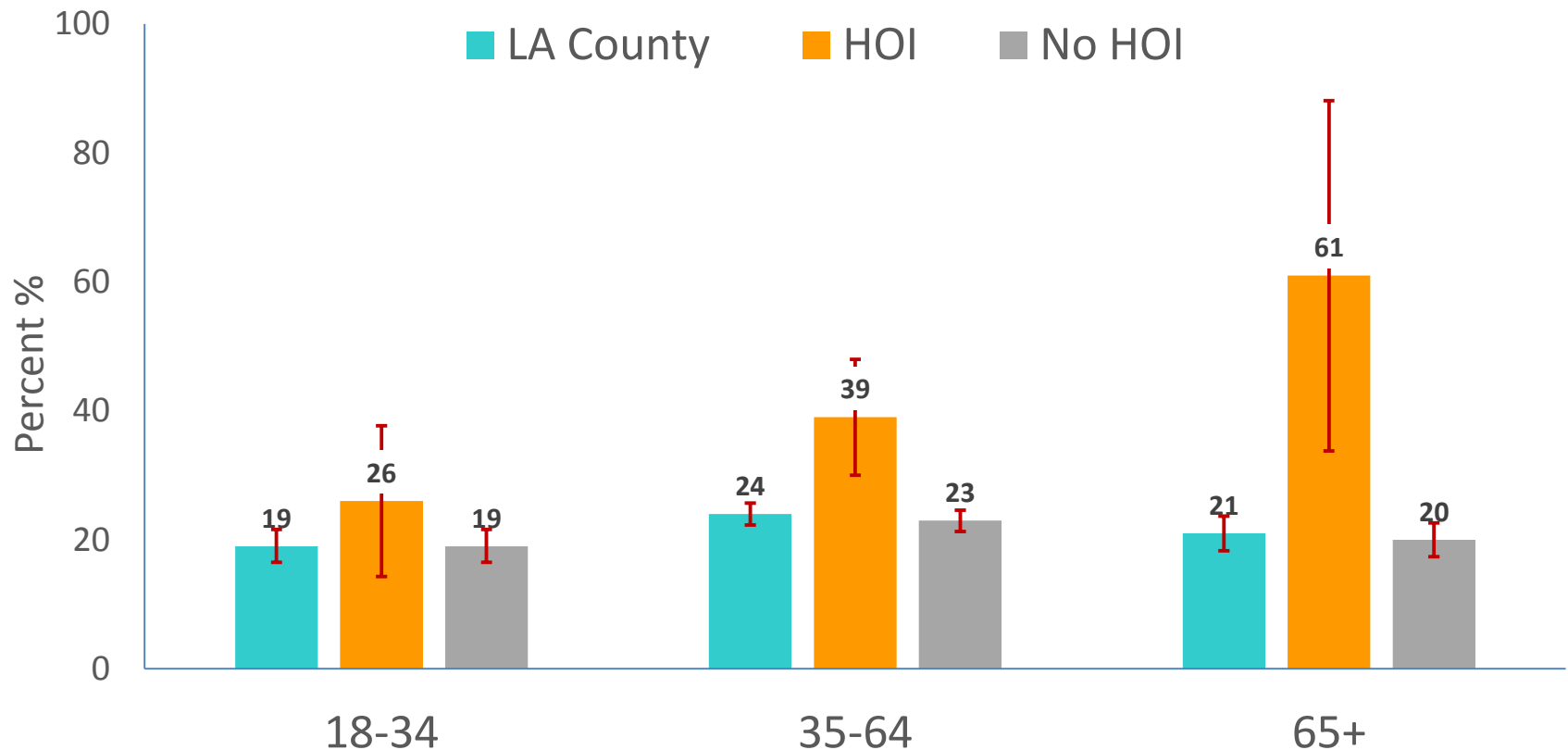
Percent of Adults with Mental Health Outcomes by History of Incarceration (HOI)



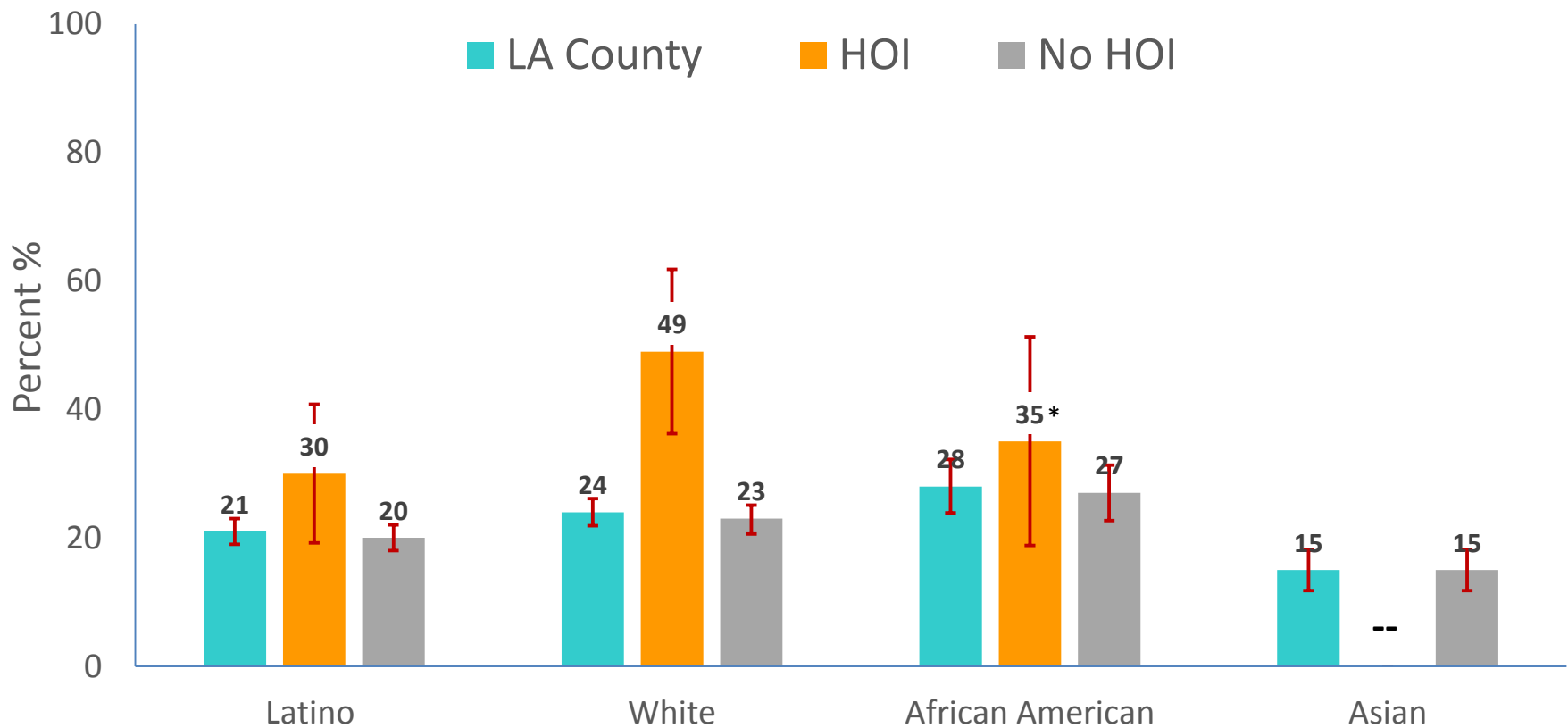
Percent of Adults with AnyMHO by HOI and Gender



Percent of Adults with AnyMHO by HOI and Age Group



Percent of Adults with AnyMHO by HOI and Race/Ethnicity***

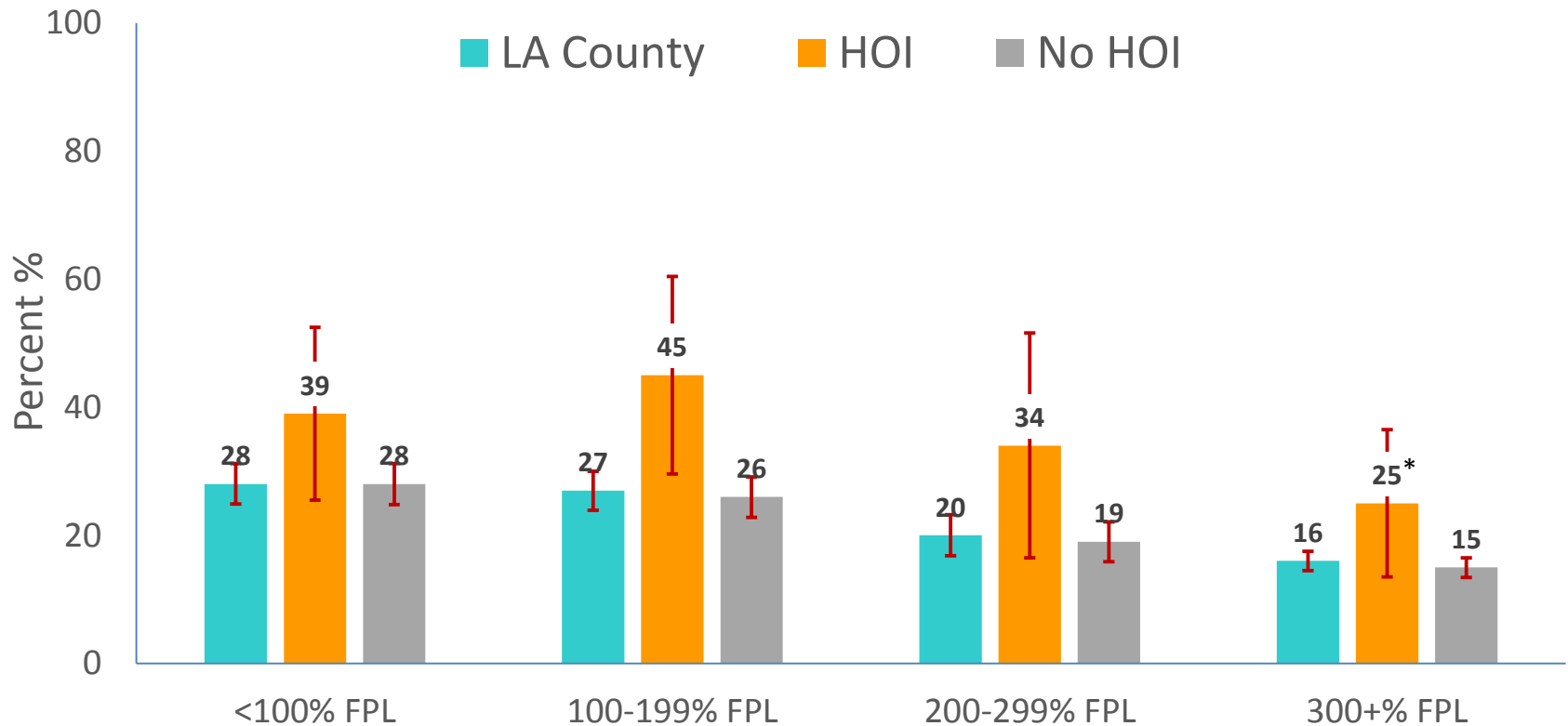


*** Native Hawaiian and Other Pacific Islanders were excluded due to small sample size and data instability

* Statistically unstable (relative standard error > 23%)

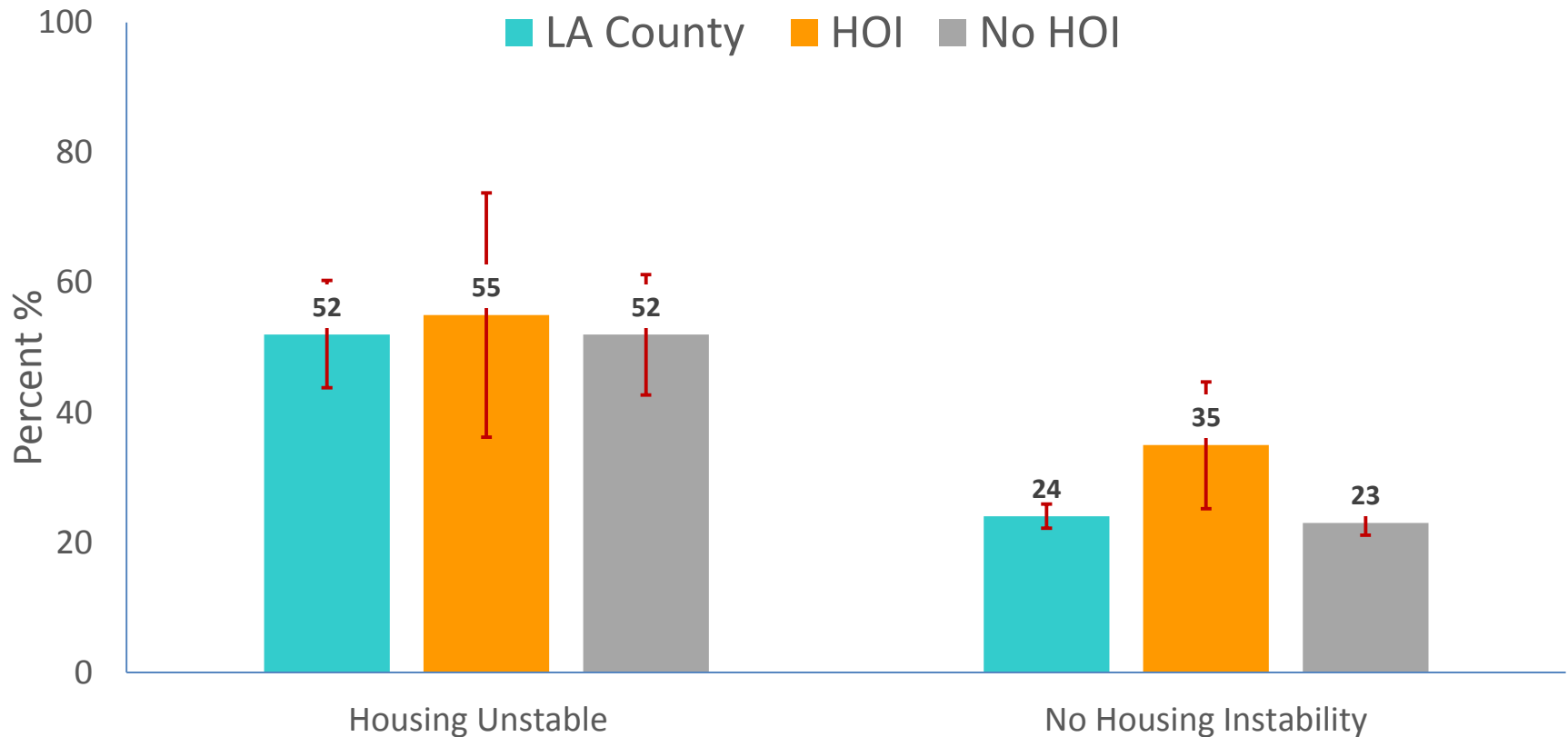
-- Results with cell size <5 are not reported for confidentiality reasons.

Percent of Adults with AnyMHO by HOI and Federal Poverty Level (FPL)



* Statistically unstable (relative standard error ≥ 23%)

Percent of Adults with AnyMHO by HOI and Housing Stability Status



Multiple Logistic Model

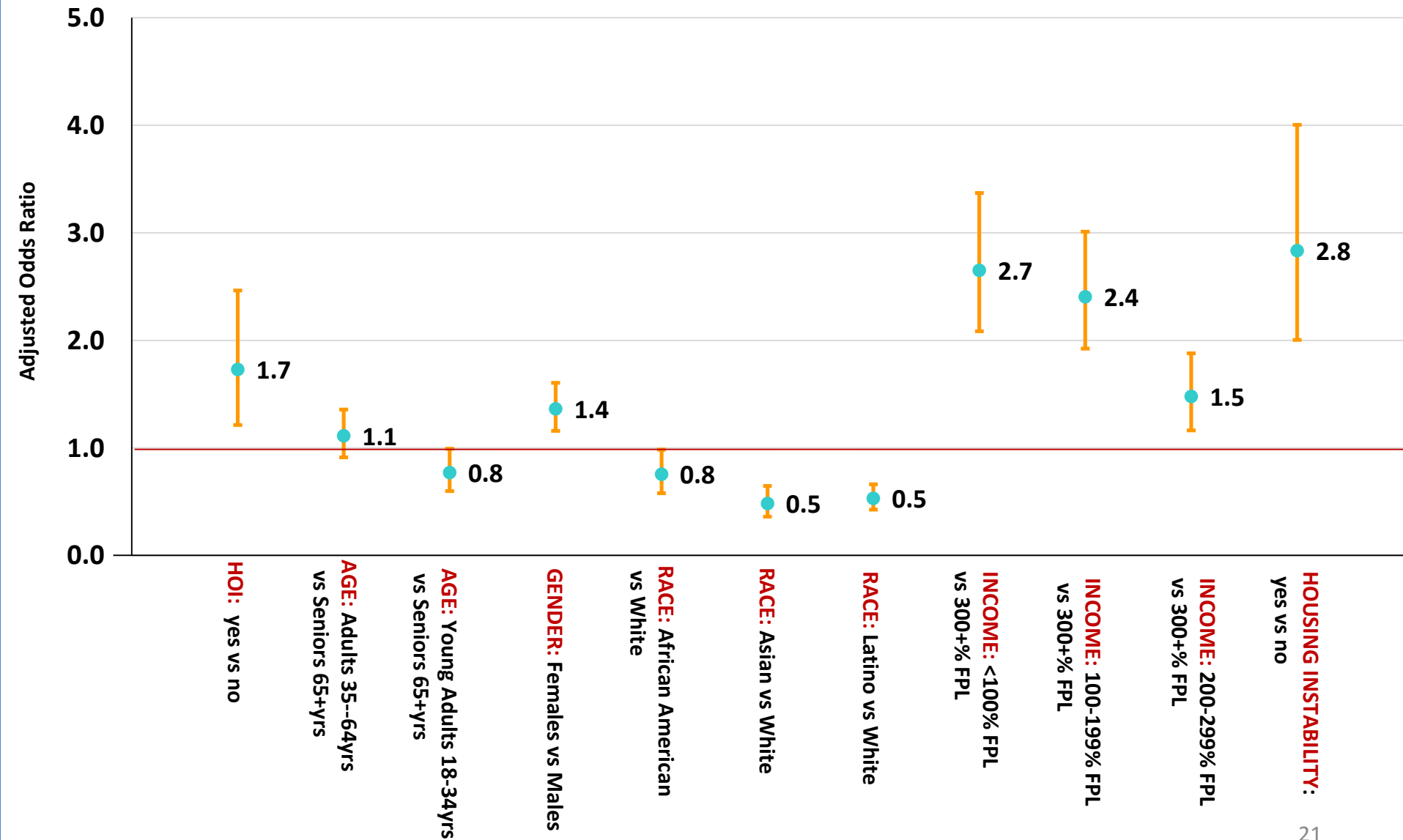
- To determine if **HOI** is associated with current mental health (**AnyMHO**) while controlling for multiple covariates

$$\log\left[\frac{y}{1-y}\right] = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \varepsilon$$

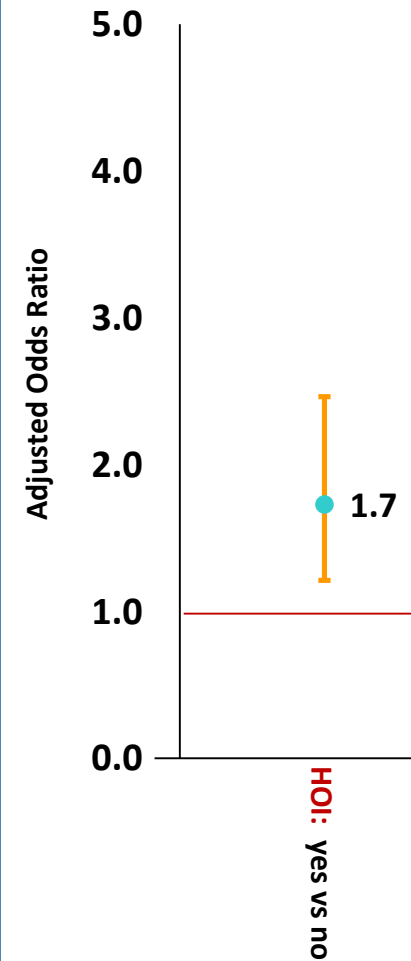


$$\log(\text{AnyMHO}/1-\text{AnyMHO}) = \beta_0 + \beta_1(\text{HOI}) + \beta_2(\text{Age}) + \beta_3(\text{Gender}) + \beta_4(\text{Race}) + \beta_5(\text{Income}) + \beta_6(\text{Housing Instability}) + \varepsilon$$

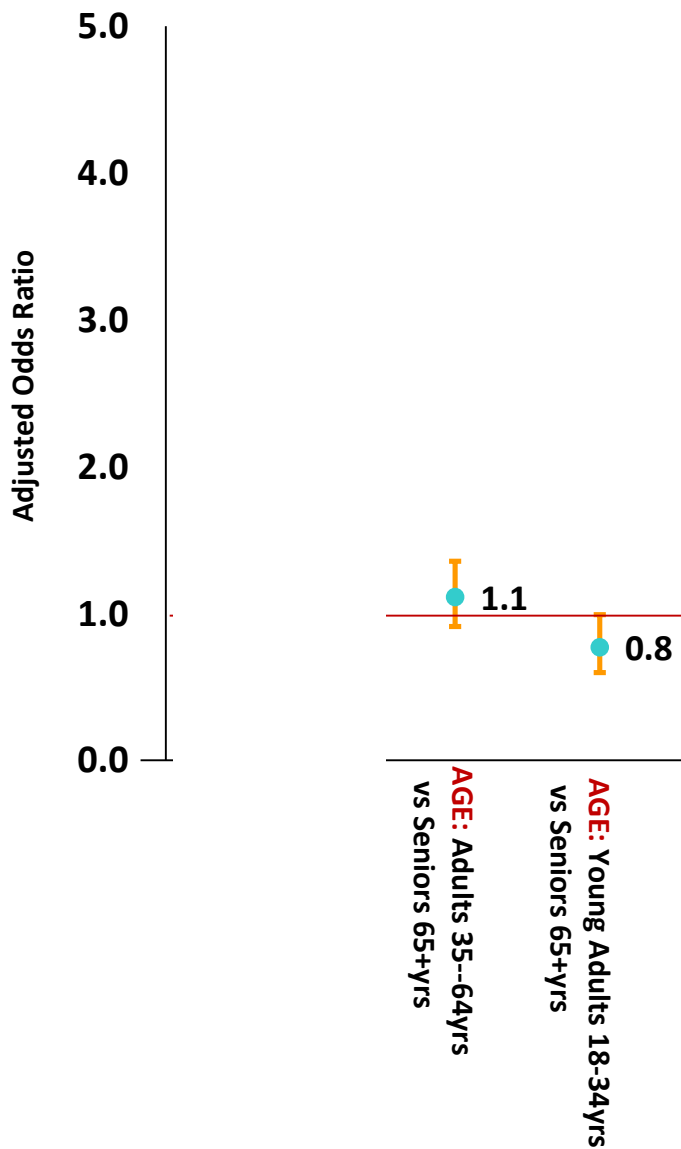
Adjusted Odds Ratios for AnyMHO



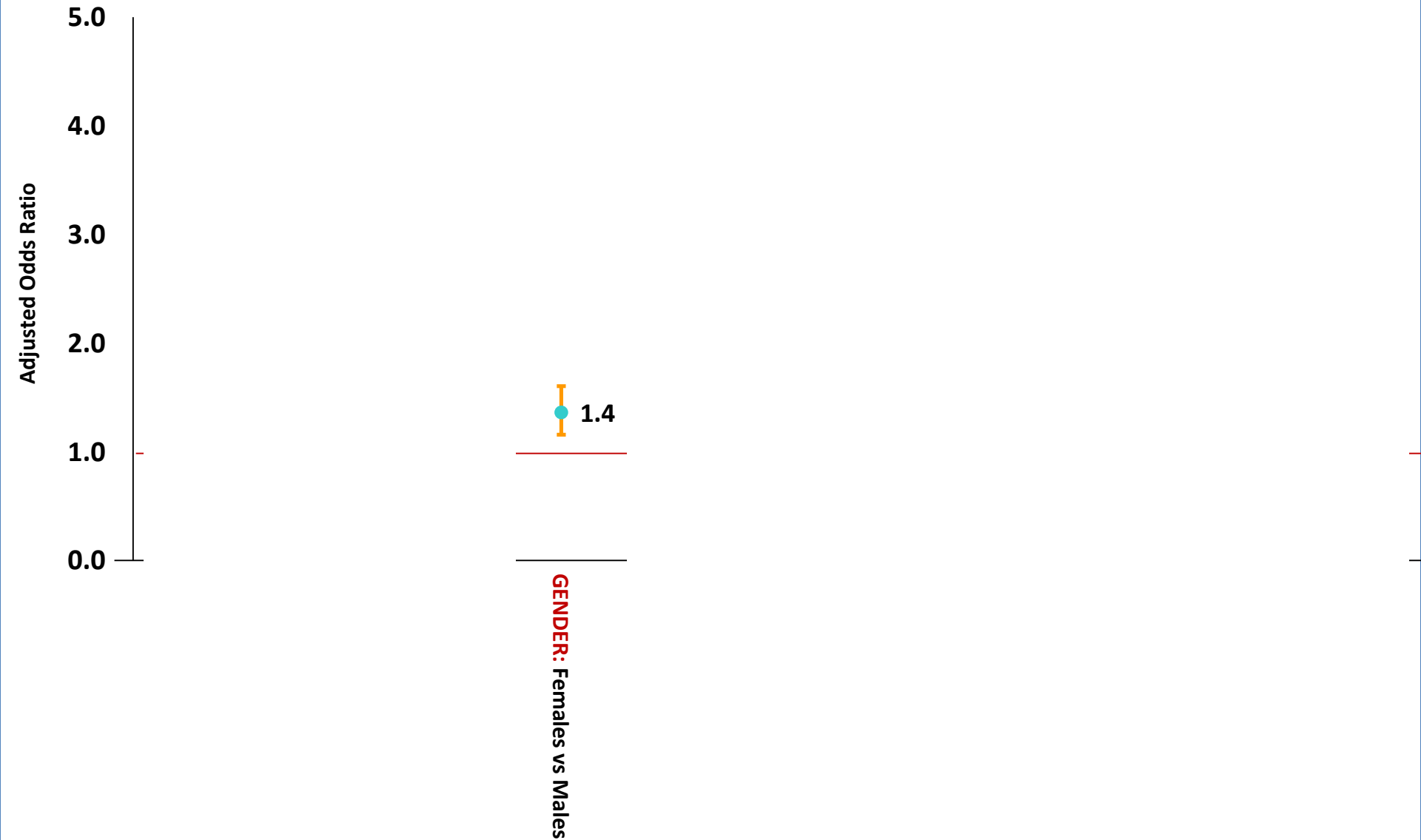
Adjusted Odds Ratios for AnyMHO



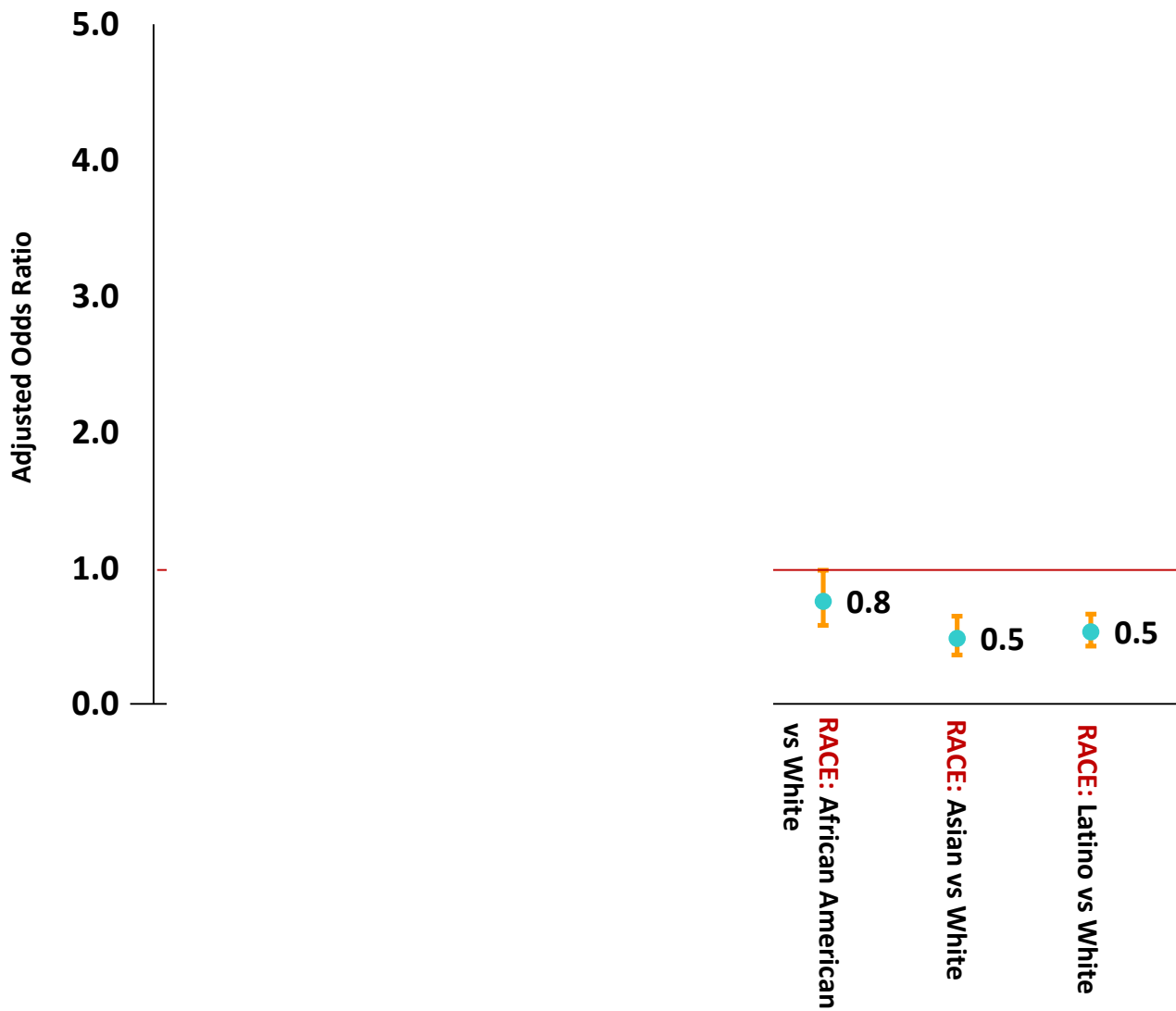
Adjusted Odds Ratios for AnyMHO



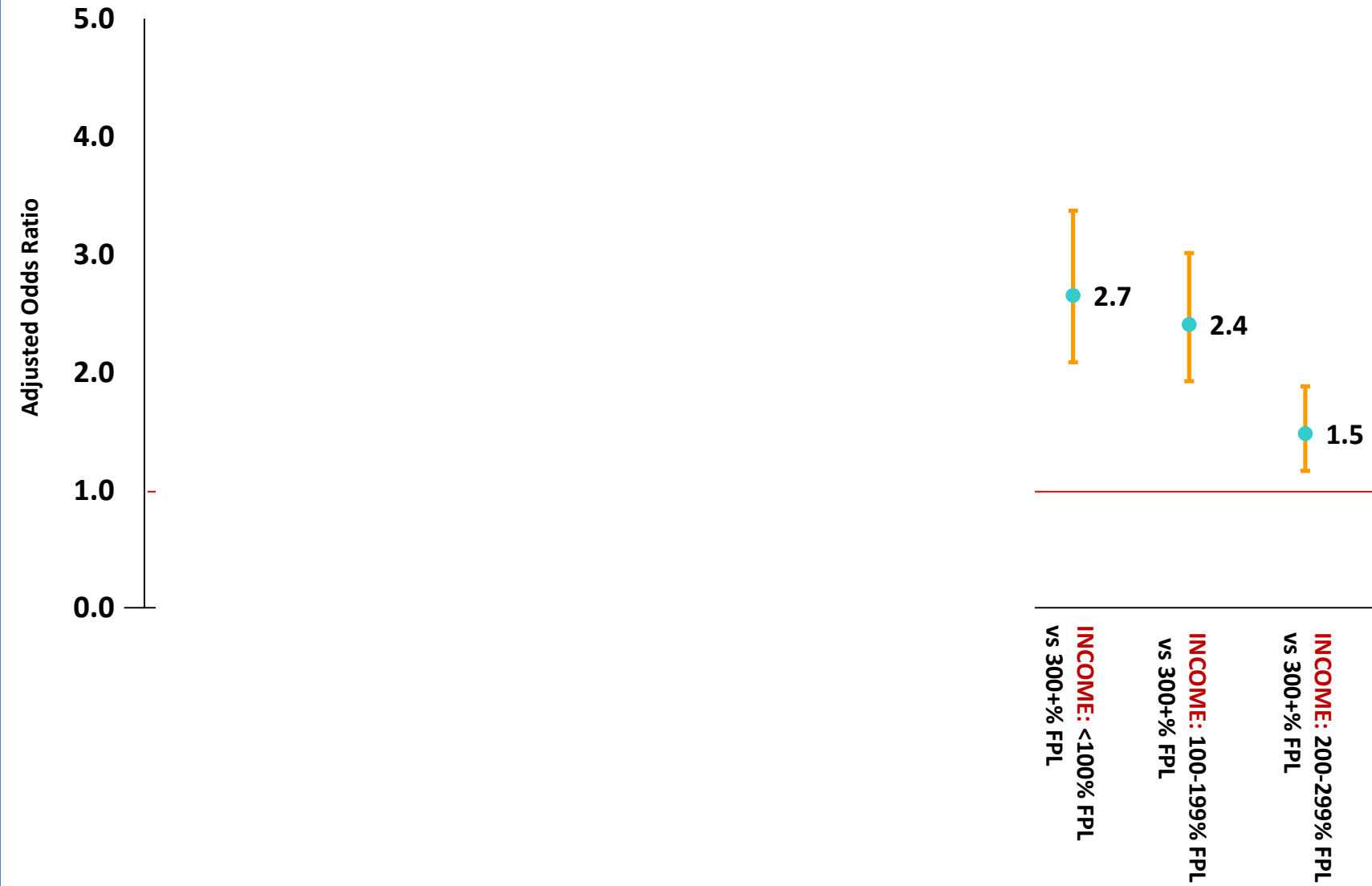
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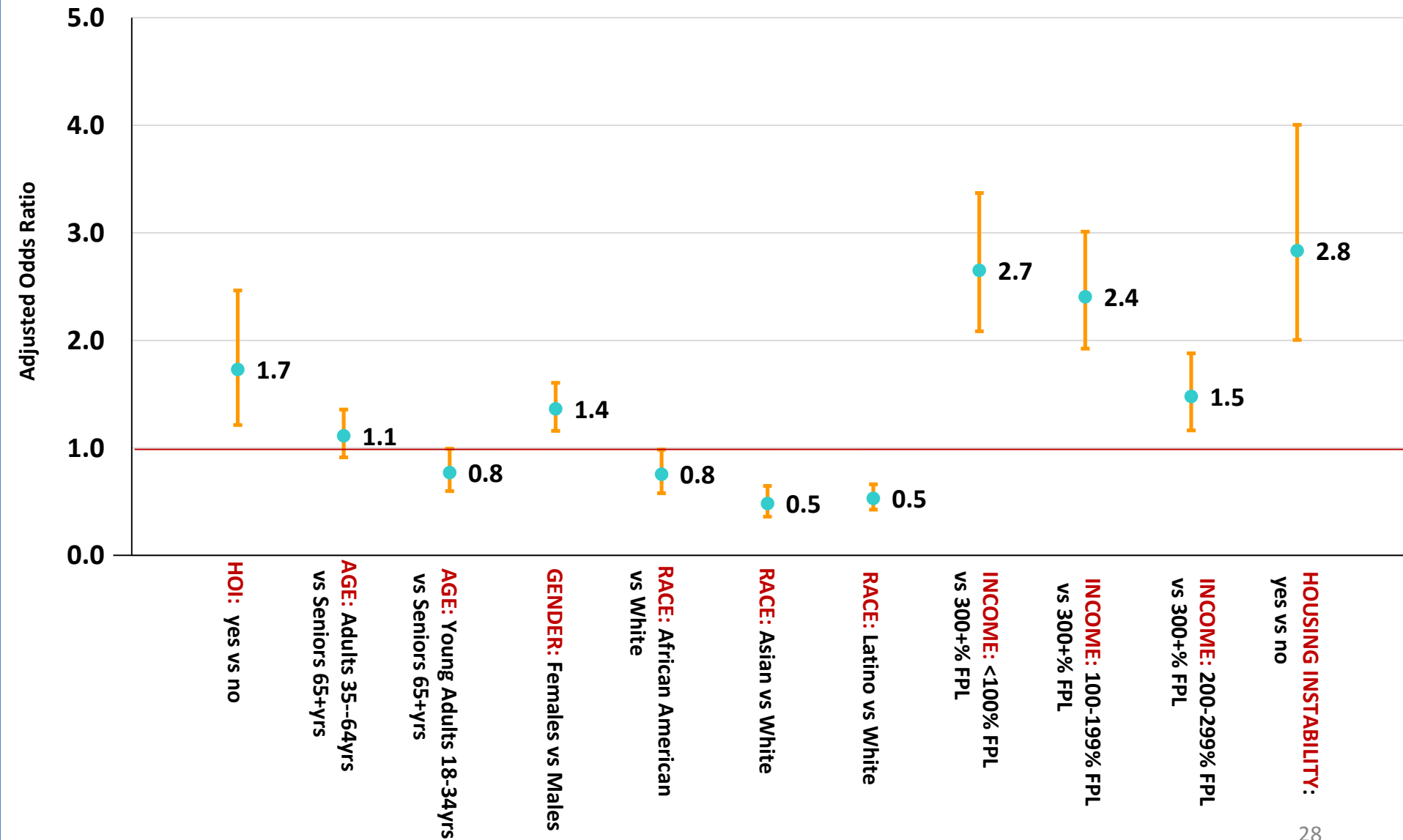
Adjusted Odds Ratios for AnyMHO



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Adjusted Odds Ratios for AnyMHO



Conclusions



Conclusions

Descriptive Statistics

- Adults with HOI had significantly high prevalence of mental health outcomes
- Descriptive analysis show disparities among those with HOI stratified on socio-demographic variables

Regression Modeling

- There is a significant association between HOI and AnyMHO. Adults with **HOI** had almost twice the odds of having AnyMHO [Adj. OR= 1.7 (1.2-2.5)]
- **Females**, though incarcerated in smaller numbers than men are at higher odds of having AnyMHO [Adj. OR= 1.4 (1.2-1.6)]
- **Income level** was a significant factor in explaining AnyMHO since the model shows a significant and consistent reduction in odds with increased income
- Adults who experience **housing instability** in the past 5 years had the highest odds of AnyMHO [Adj OR 2.8 (2.0-4.0)]

Public Health Recommendations

- **Expand jail in-reach programs** to identify and provide services to those at risk for mental health issues while incarcerated
- **Reintegration policies** should incorporate mental health screening and services to those formerly incarcerated and are at risk of experiencing housing instability
- **More research including longitudinal studies** are needed to determine if mental health issues contributes to incarceration, or are the result of incarceration
- More **targeted research** is also needed to independently assess mental health issues among **Asian and Latino sub-populations** in Los Angeles County.

Limitations

- **Self reported data**
 - Possible underreporting of mental health and incarceration history due to cultural sensitivities and stigma
- **Temporal ambiguity** due to nature of cross-sectional data
- LACHS data is primarily from non-institutionalized population therefore is **not representative of person living in jails or prisons** at the time of the survey

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