Does hazardous drinking contribute to gender and racial disparities in healthcare engagement and viral load suppression among persons living with HIV?

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National Institute on Alcohol Abuse and Alcohol Florida Department of Health
Number and Percentage of Persons Diagnosed and Living with HIV (PLWH) Engaged in Selected Stages of the Continuum of HIV Care: Florida 2014
Durable HIV Viral Suppression in Persons Living with HIV in Florida, 2009-2013

At least 1 HIV viral load detectable in past year

- White: 23% (n=691)
- Black: 38% (n=949)
- Hispanic: 26% (n=354)

P<0.0001
Durable HIV Suppression in Persons Living with HIV in Florida

At least 1 HIV viral load detectable in past year

- Male: 28%
- Female: 35%

P=0.03
Possible mechanisms by which race/gender could be associated with health outcomes

- **Race/Gender**
  - Behavioral (e.g. ART adherence, substance abuse)
  - Biological (e.g. immune function)
  - Confounding variables (e.g. Demographics, Social determinants)
  - HIV Viral Suppression

**Bias?**
- Selection bias?
- Measurement bias?
Study Objectives

• Determine whether observed disparities in HIV healthcare outcomes can be explained by differences in alcohol/drug use or ART adherence.
• Assess whether the relationship of alcohol use to HIV care outcomes varies by race and/or gender.
Study sample

- Medical Monitoring Project (MMP) a CDC-sponsored survey assessing clinical and behavioral outcomes among HIV patients in care.

- Three-stage sampling: state, clinics, individuals

- Includes 2047 persons with HIV, diagnosed for at least one year, recruited from 2009 – 2013
Measures/Analysis

Face-to-face interview
- Race/gender
- ART adherence
- Hazardous drinking
- Other drug use
- Homelessness

Chart Abstraction
- Sustained viral suppression
- Engaged in care

Multivariable logistic regression, survey weighting
Stratified analyses
Percentage of participants with various characteristics or behaviors

<table>
<thead>
<tr>
<th></th>
<th>White (n=691)</th>
<th>Black (n=949)</th>
<th>Hispanic (n=354)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 18-34 years</td>
<td>7</td>
<td>16</td>
<td>11</td>
</tr>
<tr>
<td>Female</td>
<td>15</td>
<td>49</td>
<td>22</td>
</tr>
<tr>
<td>Hazardous Alcohol</td>
<td>17</td>
<td>13</td>
<td>14</td>
</tr>
<tr>
<td>Cocaine/Crack</td>
<td>5</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Marijuana</td>
<td>25</td>
<td>17</td>
<td>16</td>
</tr>
<tr>
<td>Homeless</td>
<td>4</td>
<td>11</td>
<td>8</td>
</tr>
</tbody>
</table>
ART adherence

ART adherence < 90%

- White: 6%
- Black: 12%
- Hispanic: 6%
HIV Care Engagement

3 or more HIV visits in past year

- White: 76%
- Black: 71%
- Hispanic: 71%
- Male: 74%
- Female: 70%
Will we still see racial disparities in HIV viral suppression after controlling for substance abuse and ART adherence?
Factors associated with unsuccessful HIV viral suppression: Multivariable analysis

<table>
<thead>
<tr>
<th></th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 18-34</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Age 35-44</td>
<td>0.9</td>
<td>0.6 - 1.5</td>
</tr>
<tr>
<td>Age 45-54</td>
<td>0.9</td>
<td>0.6 - 1.3</td>
</tr>
<tr>
<td>Age 55+</td>
<td>0.6</td>
<td>0.4 - 0.96</td>
</tr>
<tr>
<td>White</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Black</td>
<td>1.8</td>
<td>1.3 - 2.4</td>
</tr>
<tr>
<td>Hispanic</td>
<td>1.2</td>
<td>0.8 - 1.7</td>
</tr>
<tr>
<td>Female</td>
<td>1.0</td>
<td>0.8 - 1.4</td>
</tr>
<tr>
<td>Hazardous drinking</td>
<td>1.0</td>
<td>0.7 - 1.5</td>
</tr>
<tr>
<td>Any drug use</td>
<td>1.4</td>
<td>1.1 - 1.7</td>
</tr>
<tr>
<td>Homeless</td>
<td>2.9</td>
<td>2.0 - 4.3</td>
</tr>
<tr>
<td>ART adherence &lt;90%</td>
<td>5.1</td>
<td>3.6 - 7.2</td>
</tr>
</tbody>
</table>
Does the association of hazardous drinking to HIV viral suppression vary by race or gender?
Relationship of hazardous drinking to HIV viral suppression by race/ethnicity:

<table>
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<tr>
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<th>95% CI</th>
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</thead>
<tbody>
<tr>
<td>White</td>
<td>1.6</td>
<td>1.01 - 2.4</td>
</tr>
<tr>
<td>Black</td>
<td>0.9</td>
<td>0.6 – 1.3</td>
</tr>
<tr>
<td>Hispanic</td>
<td>0.9</td>
<td>0.4 – 2.3</td>
</tr>
</tbody>
</table>

*Adjusted for age, gender, homeless, any drug use
Limitations

• Self-report for many measures
• Sample recruited from clinical settings, 60% participation rate
• Alcohol and drug use relatively uncommon in this sample
Conclusions

- Racial disparities for HIV viral suppression exist in Florida
- Cause of disparities not clear from these data
- Relationship of hazardous drinking to HIV viral suppression appears to vary by race