EXPLAINING RACIAL DISPARITIES IN VIRAL SUPPRESSION AMONG MSM LIVING WITH HIV

PRESENTER: JUSTIN KNOX

CO-AUTHORS: JL GUEST, J JONES, EE HALL, N LUISI, JA TAUSSIG, M VALENTINE-GRAVES, ES ROSENBERG, T SANCHEZ, C KELLEY, PS SULLIVAN
• Racial disparities at each step of the HIV treatment cascade
• 30% lower likelihood of viral suppression in Black HIV-positive individuals
• Further research exploring these disparities is needed
OUTLINE

- Methods: the Engagement Study at Emory University

- Describe participants and prevalence of baseline viral suppression in a cohort of Black and white MSM living with HIV in Atlanta, GA

- Identify explanatory factors associated with lack of viral suppression

- Assess whether explanatory factors account for racial differences in lack of viral suppression
Community-Based Prospective Cohort Study

- 400 sexually active Black and white MSM in Atlanta
- Ages 18+
- Baseline visits: June 2016 - July 2017

Recruitment for MSM living with HIV

- MSM community events, CBOs/Testing Sites, social media outlets
MEASURES

Outcome:

• Lack of viral suppression (plasma viral load $\geq 40$ copies/mL)

Primary indicator:

• Race (Black compared to white MSM)

Explanatory factors:

• Sociodemographic characteristics
• Psychosocial factors (e.g., insurance, mental health)
• Biomarkers (STIs, substance use)
Explaining racial disparities

• Bivariate model with race and viral suppression using Prevalence Ratios (PR)
• Potential explanatory factors added to model
• Factors that diminish PR for race by ≥5% considered meaningful
• All meaningful explanatory factors included in a multivariable model to determine if they collectively accounted for racial differences in viral suppression
SAMPLE CHARACTERISTICS (N=398)

- 52% Black (N=206)
- 48% White (N=192)
### Sociodemographic Characteristics

#### Age range (years)

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Black</th>
<th>White</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-29</td>
<td>26%</td>
<td>12%</td>
</tr>
<tr>
<td>30-39</td>
<td>39%</td>
<td>21%</td>
</tr>
<tr>
<td>40+</td>
<td>35%</td>
<td>67%</td>
</tr>
</tbody>
</table>

*P < .0001*

#### Low Income (<$20,000)

<table>
<thead>
<tr>
<th>Income</th>
<th>Black</th>
<th>White</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>49%</td>
<td>29%</td>
</tr>
</tbody>
</table>

*P < .0001*
Psychosocial Factors

Unstably housed/homeless (current)

- Black: 30%
- White: 17%

P < .01

Incarcerated (past year)

- Black: 15%
- White: 7%

P = .02

No ART prescription coverage (current)

- Black: 14%
- White: 5%

P < .0001
Drug Use

Marijuana use

- Black: 62%
- White: 37%

Methamphetamine use

- Black: 12%
- White: 23%

P < 0.001

P < 0.01
More Black MSM not virally suppressed:

Black (vs. white):  PR = 1.6  95%CI = 1.1-2.5
<table>
<thead>
<tr>
<th>Explanatory Factors</th>
<th>PR</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ages 18-24</td>
<td>3.2</td>
<td>(1.6-6.4)</td>
</tr>
<tr>
<td>Ages 25-29</td>
<td>3.6</td>
<td>(1.9-6.7)</td>
</tr>
<tr>
<td>Ages 30-39</td>
<td>2.7</td>
<td>(1.5-4.9)</td>
</tr>
<tr>
<td>Ages 40-49</td>
<td>2.1</td>
<td>(1.1-4.0)</td>
</tr>
<tr>
<td>Income &lt;$20,000</td>
<td>1.8</td>
<td>(1.3-2.4)</td>
</tr>
<tr>
<td>Unstably housed</td>
<td>1.8</td>
<td>(1.2-2.5)</td>
</tr>
<tr>
<td>Homeless</td>
<td>3.6</td>
<td>(2.4-5.5)</td>
</tr>
<tr>
<td>HIV diagnosis in past 3 months</td>
<td>10.1</td>
<td>(3.0-33.9)</td>
</tr>
<tr>
<td>No ART coverage</td>
<td>8.8</td>
<td>(4.2-18.6)</td>
</tr>
<tr>
<td>No viral load tests in past year</td>
<td>3.3</td>
<td>(2.4-4.4)</td>
</tr>
<tr>
<td>Depression/anxiety</td>
<td>1.7</td>
<td>(1.2-3.3)</td>
</tr>
<tr>
<td>Marijuana use</td>
<td>1.7</td>
<td>(1.2-2.5)</td>
</tr>
<tr>
<td>Methamphetamine use</td>
<td>1.9</td>
<td>(1.4-2.7)</td>
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</tbody>
</table>
Racial Disparity Attenuation

Age-adjusted black-white PR for lack of viral suppression in multivariable models

- Yellow region: covariate-adjusted PR 0-5% less than PR without covariate adjustment
- Green region: covariate-adjusted PR >5% less than PR without covariate adjustment
- Multivariable includes income, housing stability, viral load testing, ART coverage, marijuana use
### Explanatory factor ▼ in Race PR

<table>
<thead>
<tr>
<th>Factor</th>
<th>Reduction</th>
</tr>
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<tbody>
<tr>
<td>ART coverage</td>
<td>12%</td>
</tr>
<tr>
<td>Viral load test in past year</td>
<td>9%</td>
</tr>
<tr>
<td>Housing stability</td>
<td>7%</td>
</tr>
<tr>
<td>Income</td>
<td>6%</td>
</tr>
<tr>
<td>Marijuana use</td>
<td>6%</td>
</tr>
</tbody>
</table>
Multivariable association

Black (vs. white): PR = 1.1  95% CI = 0.8-1.6

• Association no longer significant
• 23% reduction in age-adjusted PR
Black MSM 60% more likely to not be virally suppressed

Black MSM differed on many explanatory factors

Five modifiable factors meaningfully accounted for racial disparity

Combined, explanatory factors completely accounted for the racial disparity
DISCUSSION

• Explanatory factors are modifiable and/or could be targeted to reduce racial disparities

• Further research

• Policy and interventions implications
ACKNOWLEDGEMENTS

- Co-authors:
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QUESTIONS?
SUPPLEMENTARY SLIDES