

### Background

Substance use (SU) disorders are prevalent among people with HIV (PWH) and are associated with worse HIV-related consequences such as lower antiretroviral (ARV) adherence and lower achievement of viral suppression (VS)

### Objective

- Describe adherence within each SU risk category among PWH
- Determine the impact of self-reported SU and its effect on ARV adherence and HIV VS.

### Methods

Data source is the patient-reported outcomes survey (PROs) which was implemented within the DC Cohort Longitudinal HIV Study.

#### Measures from PROs:

Self-reported SU is measured with the Alcohol Use Disorder Identification Test (**AUDIT-C**) and the WHO Alcohol, Smoking and Substance Involvement Screening Test (**ASSIST**).

#### Alcohol Use Categories:

- None
- Moderate (AUDIT-C score 1 to 2 for women or 1 to 3 for men)
- Heavy drinking (AUDIT-C score of  $\geq 3$  for women and  $\geq 4$  for men)

#### Substance Use Categories:

- Low (ASSIST score 0 to 3)
- Moderate (ASSIST score 4 to 26), or
- High risk (ASSIST score 27 or greater)

#### Outcomes:

##### Viral Suppression (DC Cohort EHR Data):

HIV RNA lab  $< 200$  copies/mL using the most recent HIV Lab measure (defined as the minimum difference of days between survey date and lab within +/- 6-months)

##### Self-Reported ARV Adherence last 30 days (PROs):

- Participants reporting percent ARV adherence (scale 0-100%) at the time of survey.
- Participants reporting at least 80% adherence at the time of survey.

#### Statistical Analysis

- The summary measures for demographic characteristics were explored for the overall sample.
- Mean ARV adherence by AUDIT-C and ASSIST risk groups reported [Table].
- Multivariable logistic regression was used to determine the effect of self-reported ARV adherence ( $> 80\%$ ) on VS [Full results not shown].
- Multivariable logistic regression models, stratified by each SU type and adjusted for age, ARV adherence %, and housing status were used to determine the effect of ARV adherence on VS by each SU type [Figure].

### Results

There were **871** participants with completed PROs (median age 56 yrs., 75% NH Black, 67% Male).  
 • Self-reported ARV adherence was provided by **824** participants. (Mean 92% (Std: 18.0)).

**Table.** Mean Percent ARV Adherence by Alcohol and Substance Use Risk Categories, N= 824

Substance Use Risk Categories	N	Percent ARV Adherence Mean (STD)
<b>Alcohol</b>		
None	265	88.9 (20.4)
Moderate Risk (4-26)	288	91.5 (19.1)
High Risk (27+)	271	94.1 (13.2)
<b>Opioid</b>		
Low Risk (0-3)	787	91.6 (18.0)
Moderate Risk (4-26)	31	93.6 (13.0)
High Risk (27+)	6	66.7 (24.2)
<b>Cocaine</b>		
Low Risk (0-3)	711	91.9 (17.8)
Moderate Risk (4-26)	104	90.4 (18.1)
High Risk (27+)	9	74.4 (23.0)
<b>Cannabis</b>		
Low Risk (0-3)	565	92.4 (17.0)
Moderate Risk (4-26)	240	91.0 (17.6)
High Risk (27+)	19	71.9 (33.8)
<b>Amphetamine</b>		
Low Risk (0-3)	780	91.9 (17.4)
Moderate Risk (4-26)	39	88.1 (20.3)
High Risk (27+)	5	55.0 (39.0)
<b>Hallucinogen</b>		
Low Risk (0-3)	793	92.0 (17.2)
Moderate Risk (4-26)	30	80.5 (29.5)
High Risk (27+)	1	38.0 (N/A)
<b>Sedative</b>		
Low Risk (0-3)	795	91.5 (18.0)
Moderate Risk (4-26)	29	91.3 (16.5)
<b>Inhalant</b>		
Low Risk (0-3)	788	91.6 (18.0)
Moderate Risk (4-26)	37	90.4 (16.5)
High Risk (27+)	2	69.0 (43.8)

HIV RNA results were available for **763** participants within 24 months of survey.

- Increased ARV adherence corresponded to higher VS (OR: 1.5; 95% CI: 1.4-1.7)).
- Participants reporting inhalant use were likelier to report both  $> 80\%$  ARV adherence and greater VS ( $p < 0.05$ ).

#### Multivariable model for Impact of Adherence:

After adjusting for age, employment, and housing, participants with  $\geq 80\%$  ARV adherence were over 5 times more likely to be VS ( $p < 0.0001$ ).

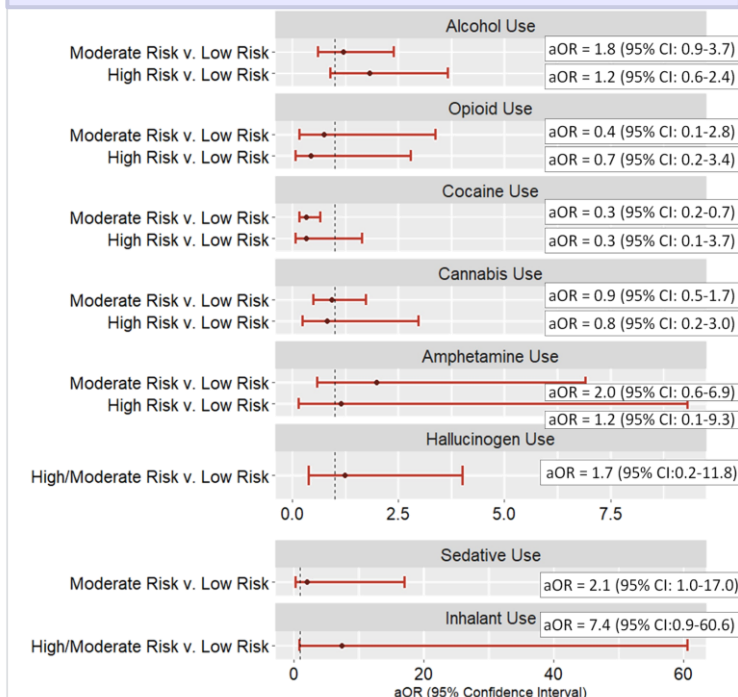
#### Multivariable models [Figure]:

VS stratified by drug type identified a **decreased** likelihood of VS among those with:

- High-risk opioid use (OR:0.43; 95%CI:0.07-2.79)
- Moderate (OR:0.32; 95%CI:0.16-0.65) to High-risk cocaine use (OR:0.32; 95%CI:0.07-1.63).

### Results

**Figure.** Logistic Regression for Adjusted Odds of HIV RNA Suppression (VL  $< 200$  copies/mL) at PROs Completion by Substance Use Risk Categories.



Each model is adjusted for age, ARV Adherence ( $\geq 80\%$ ), and housing status.

### Limitations

- Findings may not be generalizable to PWH who do not receive HIV care or those not linked to healthcare.
- Associations between alcohol use and SU on ART adherence over time may need to be further researched as long-term SU may have greater impact on HIV-related outcomes.

### Conclusions

- Opioid and cocaine use may reduce the probability of VS, even among PWH reporting high ARV adherence.
- Research is ongoing exploring polysubstance use defined by ASSIST scores and ICD-9/10 billing codes to validate current SU.

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