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Do Alcohol Use and Intimate Partner Violence Increase Risk of Missed ART Doses among Men Living with HIV who Have Sex with Men?

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Background

- Alcohol use is one of the most prevalent and significant factors that impacts antiretroviral therapy (ART) adherence.
- In cross-sectional data, there also appears to be an association between intimate partner violence (IPV) and ART adherence.
- To date, no research has examined temporal associations between these variables among men living with HIV who have sex with men (MLWHSM), limiting our understanding of the nature of these relationships.
- Event-level data are key to pinpointing the variables that most commonly precede ART nonadherence, such as alcohol use and IPV, and could represent prime intervention targets.

Methods

- Baseline interview followed by 60 consecutive daily diaries that assessed alcohol use, IPV-Victimization (IPV-V), IPV-Perpetration (IPV-P), and ART adherence for the previous day.
- Participants: ≥18 at enrollment and <60 years of age at study completion, cisgender male, identify as MSM, diagnosed with HIV, prescribed ART, in a relationship for ≥ 1 month, consumed alcohol in past month, experienced IPV-V and/or IPV-P in past year, have daily access to a computer or mobile device, and speak English.
- Preliminary analyses from the first 80 (of a total of 100) participants, 4203 completed daily diaries (with a daily diary completion rate of 92%).

Demographic Characteristics of Sample

Demographic	Mean	SD
Age	41	1.1
Race	N	%
African American/Black	24	30
Asian	4	5
White	31	38.8
More than one race	9	11.3
Other	12	15
Ethnicity		
Hispanic/Latinx	25	31.2
Not Hispanic/Latinx	55	68.8

Baseline Characteristics of Sample

- Self-reported ART adherence is high (60% reporting always adherent)
- Less than a quarter had a detectable viral load (>20 copies/mL) in 60 days before baseline
- 30% reported heavy drinking (≥5 drinks/day) at least monthly

Baseline IPV for Previous 12 Months

IPV Past 12 Months	N	%
Victimization		
Psychological	68	85
Physical	22	27.5
Sexual	5	6.3
HIV-related	11	13.7
Perpetration		
Psychological	71	88.7
Physical	21	26.3
Sexual	0	0
HIV-related	7	8.8

Results

- Using a series of G estimation algorithms (applied to longitudinal marginal structural models), we examined whether alcohol use, IPV-V, and IPV-P impacted ART adherence.
- Models indicated significant causal effects of IPV-V on day *t* on ART adherence on day *t* and *t+1*. Specifically, **participants who endorsed IPV-V on day *t* were significantly more likely to report non-adherence to ART on day *t*** (adjRR=3.05, 95% CI:2.12-3.99) **and day *t+1*** (adjRR=2.94, 95% CI:1.82-3.79).
- There were no significant causal effects of IPV-P (p's>.05).
- Data also indicated significant effects such that **more drinks consumed on day *t* led to greater risk of non-adherence to ART on day *t*** (adjRR=1.12, 95% CI: 1.05-2.76) **and day *t+1*** (adjRR=1.06, 95% CI:1.02-2.12) (relative risk with each additional drink/day).

Conclusions

- IPV-V and alcohol use are associated with missed same day and next day ART doses.
- Interventions aimed at preventing IPV-V or mitigating its impact, as well as decreasing alcohol use, may improve ART adherence.
- These type of event level data could be used to inform future interventions to maximize their impact.

Next Steps

- Just completed data collection for full sample (n=100)
- Planned analyses:
  - Examine whether alcohol use and IPV (perpetration and victimization), and their interaction, increase the risk of missed ART doses and describe the ordering of alcohol use and IPV (perpetration and victimization) in this population.
  - Examine potential protective factors (coping style and social support) as moderators of the associations between alcohol use, IPV (perpetration and victimization), and ART adherence.
  - Explore whether other syndemic factors (drug use, mental health, sexual minority stress, HIV stigma, and childhood abuse) increase the risk of missed ART doses.

Research Team and Collaborators

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