Association of substance use with pre-exposure prophylaxis outcomes among men who have sex with men in the United States: results from the American Men's Internet Survey (AMIS) 2024-25

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Background

- Substance use has been linked to increased HIV acquisition risk among men who have sex with men (MSM), yet its relationship with pre-exposure prophylaxis (PrEP) engagement across the PrEP continuum remains incompletely understood.
- Use of sub substances should be considered when choosing a PrEP option as concerns for potential drug-drug interactions may arise with specific PrEP modalities
- **OBJECTIVE**: We examined associations between substance use and PrEP outcomes among a nationwide sample of US MSM.

Methods

Recruitment

- Online recruitment through banner ads on social media, sex-seeking and gay interest websites
- Participants completed the online survey between December 2024-August 2025



Eligibility

- 15 years of age or older
- Cisgender male
- Had oral or anal sex with a man at least once in the past OR identify as gay/bisexual (15-17yo only)
- US residence

Additional analytic criteria

- Oral or anal sex with another man in the past 12 months
- No self-report of prior HIV diagnosis

Measures

- Problematic alcohol use, defined as AUDIT-C score ≥4, injection drugs, non-injection drugs, marijuana use in past 12-months
- Willingness to use PrEP, current PrEP use, PrEP adherence, PrEP persistence, reasons for never using PrEP

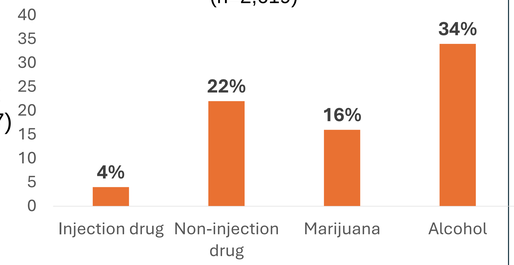
Statistical Analysis

- Multivariable Poisson regression estimated adjusted prevalence ratios for associations between substance use and PrEP outcomes adjusting for sociodemographic and behavioral characteristics, symptoms of depression and mental health

Results

- Of 2619 MSM not living with HIV (Median age 47 years)
  - 70% (1833/2619) were non-Hispanic White
  - 62% (1633/2619) had private health insurance
  - 41% (1077/2619) were currently using PrEP
  - 26% (278/1077) reported any recreational drug use in the past 12 months among current PrEP users whereas 22% (332/1537) reported drug use among participants who didn't use PrEP
- Among 1426 MSM who did not use PrEP in the past 12 months:
  - There was no difference in willingness to use long-acting (LA) injectable or daily oral PrEP among participants who reported substance use vs those who did not **(Figure 1)**
- Among1077 MSM who were current PrEP users:
  - Current PrEP use was slightly higher among participants who used non-injection drugs (vs who did not) and marijuana (vs who did not) in the past 12 months, but these associations were not significant in multivariable modelling **(Figure 1)**
  - In multivariable modelling there was no significant associations between substance use and PrEP adherence or persistence
- Among 534 MSM who reported at least one substance use in past 12 months and who never used PrEP:
  - The highly reported reasons for never using PrEP were stigma, not knowing enough about PrEP, and concerns about side-effects **(Figure 2)**

Figure 1. Among US MSM not living with HIV (n=2,619)



Conclusions

- A substantial proportion of respondents reported at least one type of recreational drug use in the past 12 months.
- Substance use was not independently associated with most PrEP outcomes after adjustment
  - However, substance use should be regularly assessed by healthcare providers for the potential to cause drug-drug interactions with individuals interested in starting PrEP
- Stigma, lack of PrEP knowledge, and concerns about side effects were among the most commonly reported reasons for never using PrEP
- Reducing stigma and improving PrEP implementation may be more important targets than focusing on substance use status alone

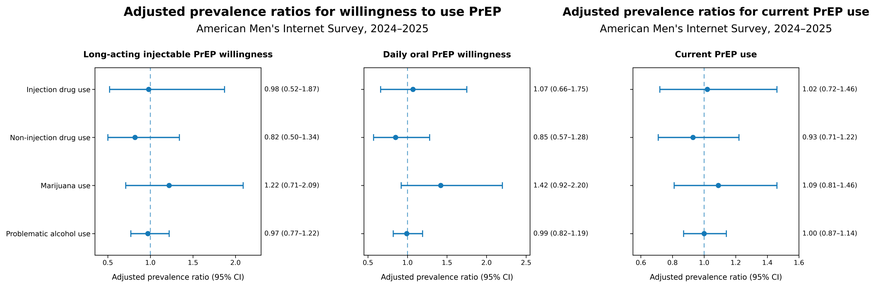
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Acknowledgement

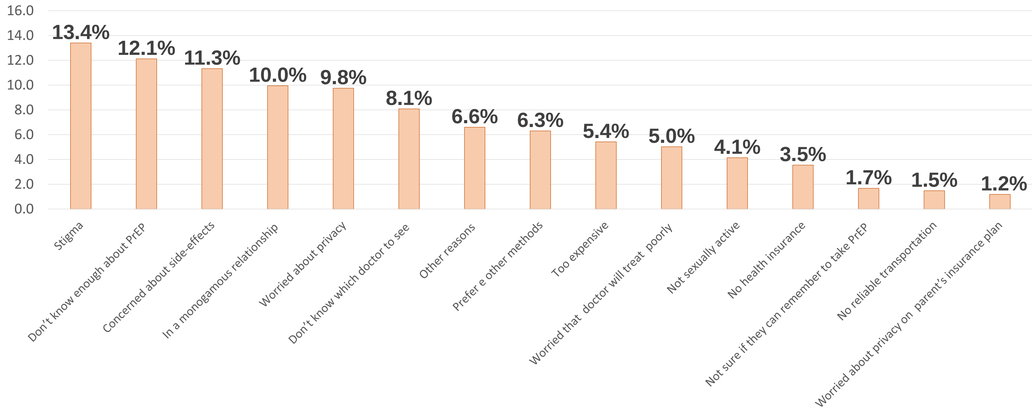
- We thank all men who participated in the AMIS study.
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Figure 2. Association of substance use* and willingness to use LA injectable, daily oral PrEP and current PrEP use among MSM, American Men's Internet Survey, 2024-2025



*The survey assessed specific recreational drugs individually; however, substance-specific estimates are not presented because small sample sizes limited the precision and interpretability of these estimates.

Figure 3. Reasons for never PrEP use among MSM who reported substance use in the past 12 months, American Men's Internet Survey, 2024-2025



Proprietary