Substance use among trans and gender diverse adults in Australia: findings from the Private Lives 3 survey

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Background

Trans and gender diverse people

- Gender identity ≠ sex assigned/presumed at birth
- Estimated 0.9% of adult Australians[1]
- Proportion is increasing, particularly young people[2,3]
- Experience significant health disparities compared to cisgender people[4,5]
- Research is rapidly expanding, with greatest focus on[6]:
  - Mental health
  - Gender-affirming hormone therapy and surgery
  - Sexual health – HIV, STIs

1. Australian Bureau of Statistics. (2022). *Estimates and characteristics of LGBTI+ populations in Australia*
2. Herman J, Flores AR, O'Neill K. *How Many Adults and Youth Identify as Transgender in the United States* [Internet]. The Williams Institute; Aug 2025.
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Background

Substance use in trans and gender diverse people

- Relatively less literature
- Most literature evaluates:
  - ***Any substance use*** – current/recent use (e.g., past 12 months) or lifetime use
  - ***Specific subgroups*** – "high-risk" of HIV acquisition
  - ***Specific trans and gender diverse identities*** – trans women
  - ***Samples from specific regions*** – United States or the United Kingdom
    - Existing Australian literature evaluates young people[1,2] or health-care seeking adults[3]

Aims

A. ***Describe the patterns of substance use*** among a convenience sample of ***trans and gender diverse adults in Australia***, focusing on ***at-risk substance use***, including:
    1. Potentially problematic illicit drug use
    2. Potentially hazardous alcohol use
    3. Daily smoking – cigarettes or other tobacco products

B. ***Examine factors associated with at-risk substance use***

Methods – Study design

- Analysis of data from ***Private Lives 3 (PL3)*** – Australian Research Centre in Sex, Health, and Society (ARCSHS) at La Trobe University, Melbourne
- ***Cross-sectional community survey***
- ***Inclusion criteria***: age ≥ 18 years, residing in Australia
- ***Expert advisory group*** representing diverse LGBTQIA+ communities
- ***Ethics***: La Trobe University, Thorne Harbour Health, ACON
- ***Recruitment***: paid advertising on Facebook and Instagram, promotion by LGBTQIA+ community organisations (e.g., Thorne Harbour Health, ACON, etc.).
- Fraudulent responses were identified and removed
- A total of 6,835 valid survey responses were obtained, of which ***1,506 were from trans and gender diverse people***.

Methods – Variables

- ***Substance use***
  - ***Tobacco smoking and vaping***
  - ***Alcohol***: any consumption in the past 6 months, heavy episodic drinking at least monthly
  - ***Illicit drug use***: any use of specific substances in the past 6 months, recreational injecting drug use
  - ***At-risk use***: DAST-10 ≥ 3, AUDIT-C ≥ 3[1], daily smoking
- ***Sociodemographic characteristics***: age, gender (trans men, trans women, non-binary), sexual identity, housing instability, employment, regionality
- ***Psychological distress***: Kessler-10 ≥ 22 (high or very high)
- ***Lifetime history of sexual assault***
- ***Discrimination, harassment, violence, exclusion***
  - Unfairly treated*
  - Verbally abused or harassed†
  - Physically attacked or assaulted†
  - Socially excluded, refused service or employment†

  Because of their gender* or LGBTQIA+† identity
- ***Acceptance and affirmation***
  - Accepted at work
  - Accepted when at a health or support service
  - Gender affirmed by their romantic or sexual partner(s)

1. Dermody, S. S., Uhrig, A., Moore, A., Raessi, T., & Abramovich, A. (2023). A narrative systematic review of the gender inclusivity of measures of harmful drinking and their psychometric properties among transgender adults. Addiction, 118(9), 1649-1660.

Methods – Analysis

1. ***Descriptive***
2. ***Modified Poisson regression analysis with robust standard errors***
    - Two-step/stage approach[1]
    - ***Outcome variables – At-risk / potentially hazardous use***: DAST-10 ≥ 3, AUDIT-C ≥ 3, daily smoking
    - ***Independent variables***: sociodemographic characteristics; psychological distress; lifetime history of sexual assault; discrimination, harassment, violence, exclusion; acceptance and affirmation

- ***Missing data***: Little's test of missing completely at random
    - Missingness did not occur randomly ($X^2(406, N=1506) = 588.44$, $p<0.001$) – multivariate imputation by chained equations (MICE) was performed to impute missing independent variable data
- ***Multicollinearity***: variance inflation factor
    - VIF < 5 for all variables, indicating no multicollinearity

1. Bursac, Z., Gauss, C. H., Williams, D. K., & Hosmer, D. W. (2008). Purposeful selection of variables in logistic regression. Source Code for Biology and Medicine, 3(1), 17.

Results – Sample characteristics

Gender		Non-binary people	Trans women	Trans men
Number: n (%)	n = 1506 (100.0%)	n = 921 (61.2%)	n = 285 (18.9%)	n = 300 (19.9%)
Age (years): median (IQR)	25 (22–36)	27 (22–35)	35 (26–52)	24 (20–31)

Sexual orientation

- Lesbian/gay: n = 285 (19.0%)
- Bisexual: n = 504 (33.6%)
- Queer: n = 420 (28.0%)
- Asexual: n = 93 (6.2%)
- Something else: n = 197 (13.1%)

Unstable housing: n = 505 (33.5%)

Unemployed or unable to work: n = 411 (27.3%)

History of sexual assault: n = 872 (58.1%)

High or very high psychological distress (K10 ≥ 22): n = 1081 (73.3%)

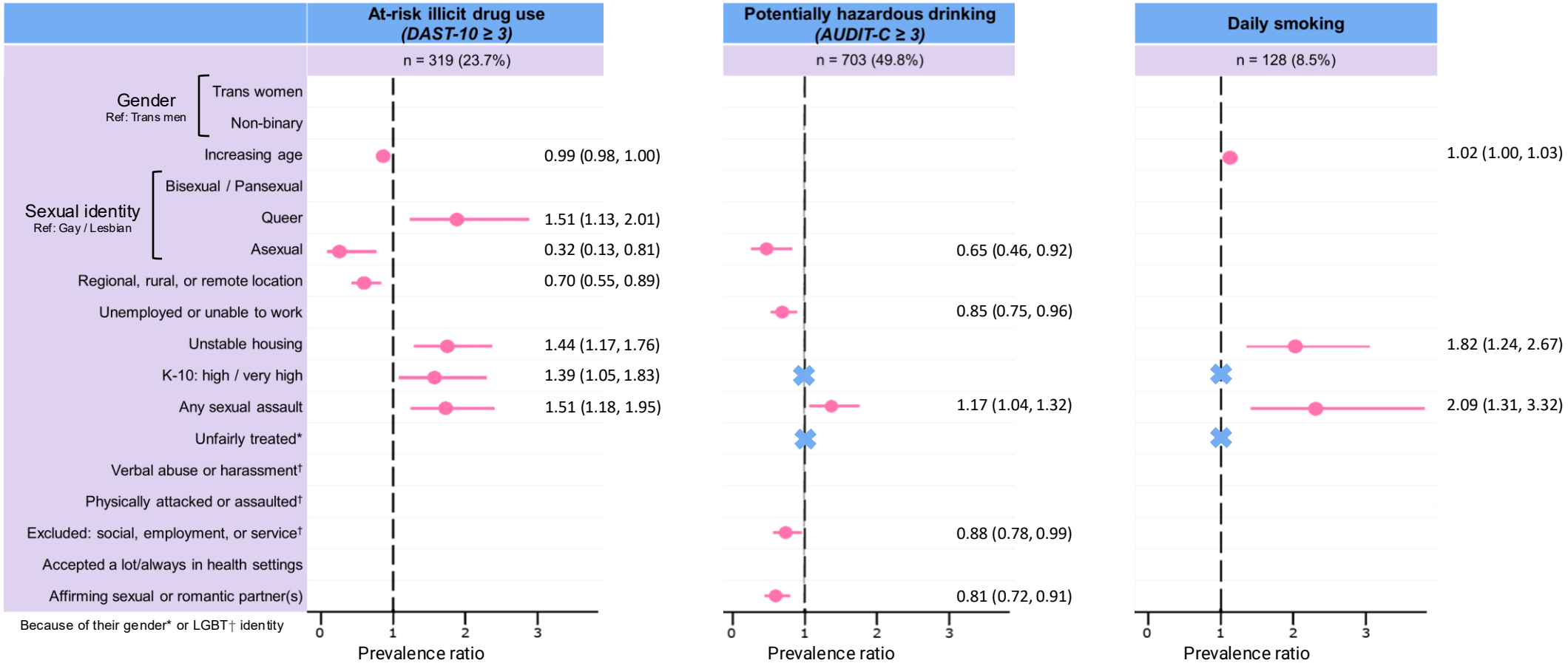
Discrimination, harassment, violence, exclusion

- Unfairly treated*: n = 1199 (79.9%)
- Verbally abused or harassed†: n = 757 (50.6%)
- Socially excluded or refused service, employment, or promotion†: n = 837 (56.6%)
- Physically attacked or assaulted †: n = 83 (5.6%)

Acceptance and gender affirmation

- Accepted ‘a lot’ or ‘always’ at work: n = 466 (31.1%)
- Accepted ‘a lot’ or ‘always’ while accessing a health or support service: n = 399 (26.7%)
- Felt their gender was affirmed by romantic and sexual partner(s): n = 717 (53.1%)

Results – Factors associated with at-risk substance use



Notes:

- All variables were significant for univariate analyses (step 1) and included in the final multivariable models EXCEPT for those marked with ✖
- Accepted a lot/always at work was NOT significant for all univariate analyses, so was not included in this figure
- To enhance readability, adjusted odds ratios and 95% confidence intervals are displayed only for variables significantly associated with the outcome(s).

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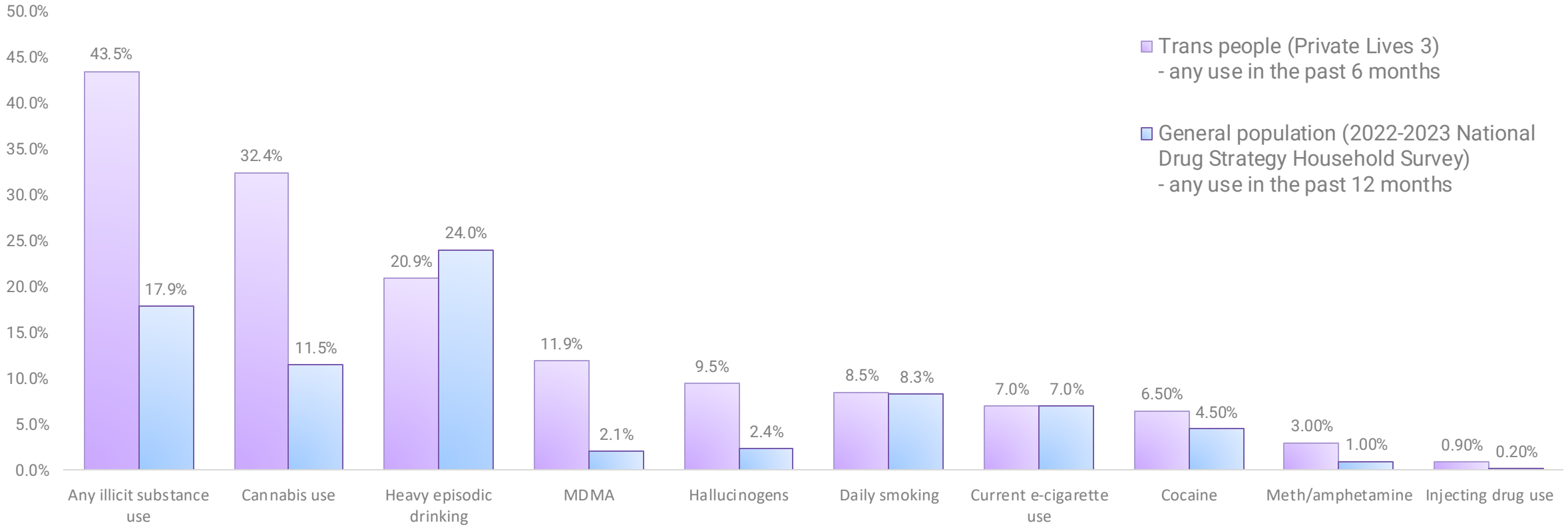
Discussion

Prevalence and patterns of substance use among trans and gender diverse participants (PL3) and the Australian general population (NDSHS)



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Variables NOT significantly associated with at-risk substance use

1. ***Gender identity***
    - Diverges from prior research – higher prevalence of at-risk substance use or substance use disorders among trans women or non-binary people

2. ***Most discrimination, harassment, violence, or exclusion variables***
3. ***Most acceptance and affirmation variables***
    - ***Exceptions*** – ***significantly lower prevalence*** of potentially hazardous drinking (AUDIT-C ≥ 3) were associated with:
        1. Gender affirmed by romantic or sexual partners
        2. Socially excluded, refused service or employment based on being LGBTQIA+
    - Differs from U.S. and U.K. studies – use of substances to cope with distal minority stress[1,2]

1Puckett, J. A., Veldhuis, C. B., Gilbert, P. A., Anderson-Carpenter, K. D., Mustanski, B., & Newcomb, M. E. (2023). Differential associations between enacted and expected stigma with psychological distress, alcohol use, and substance use in transgender and gender diverse people. *Drug Alcohol Depend*, *248*, 109921
2Keuroghlian, A. S., Reisner, S. L., White, J. M., & Weiss, R. D. (2015). Substance use and treatment of substance use disorders in a community sample of transgender adults. *Drug Alcohol Depend*, *152*, 139-146.

Discussion

Variables significantly associated with at-risk substance use

Variable	Potentially problematic illicit drug use (DAST-10 ≥ 3)	Potentially hazardous alcohol use (AUDIT-C ≥ 3)	Daily smoking
Any sexual assault	1.51 (1.18, 1.95)	1.17 (1.04, 1.32)	2.09 (1.31, 3.32)
Housing instability	1.44 (1.17, 1.76)		1.82 (1.24, 2.67)
Asexual identity	0.32 (0.13, 0.81)	0.65 (0.46, 0.92)	
Queer identity	1.51 (1.13, 2.01)		
Increasing age	0.99 (0.98, 1.00)		1.02 (1.00, 1.03)
Rural, regional, or remote location	0.70 (0.55, 0.89)		
Unemployed or unable to work		0.85 (0.75, 0.96)	
K-10: high or very high	1.39 (1.05, 1.83)		

Consistent with non-Australian studies of trans and gender diverse adults[1-5], however:

- ***Variables may, themselves, be influenced by distal minority stressors***

Potentially related to differences in how asexual and queer people engage with sex, dating, and substance use cultures[6,7].

Compared with AIHW data*:

- *Age*: consistent with age-related patterns and trends of use in the general population[8]
- *Rural/regional/remote location*: differs substantially – similar rates of illicit drug use, but higher rates of risky alcohol consumption and daily tobacco smoking[8]
- *Psychological distress*: also differs – higher rates of risky alcohol consumption and daily tobacco smoking or vaping[9]

*Substance use measures differ slightly – not entirely comparable

Australian Institute of Health and Welfare. *Young people's use of alcohol, tobacco, e-cigarettes and other drugs.* National Drug Strategy Household Survey 2022–2023 [Internet]. Canberra: AIHW; 2024. Available from: https://www.aihw.gov.au/reports/children-youth/young-people-alcohol-tobacco-drugs
Australian Institute of Health and Welfare. *Use of alcohol and other drugs in Major cities, regional areas, and remote areas*. National Drug Strategy Household Survey 2022–2023. Canberra: AIHW; 2024. Available from: https://www.aihw.gov.au/reports/rural-remote-australians/alcohol-drugs-geographic-areas
Australian Institute of Health and Welfare. Mental illness and substance use. In: Health & wellbeing; Mental health [Internet]. Canberra: AIHW. Available from: https://www.aihw.gov.au/mental-health/topic-areas/health-wellbeing/mental-illness-and-substance-use

Discussion

Possible explanations for these findings

- ***Regional differences*** in sociocultural, legal, and healthcare system contexts
  - Trans and gender diverse people in the U.S. may experience greater political targeting, media-fuelled stigma, and overt hostility → may intensify distal minority stressors
  - Universal healthcare in Australia may improve access to substance use support or gender-affirming care → may help buffer minority stress

- ***Factors outside the included variables*** may be associated with at-risk substance use:
  - ***Coping*** with proximal / internal minority stress, psychological distress or mental health diagnoses, lack of social support, dysphoria*
  - ***Limited access*** to ***culturally competent D&A healthcare or education***
  - Use to ***facilitate gender expression***
  - Use to ***foster community connection***
  - Exposure to ***social environments*** that ***normalise*** or facilitate ***use of substances***

*These variables may themselves be influenced by exposure to external minority stressors

Implications

A. Clinical practice

1. Screening for at-risk / potentially hazardous substance use
2. Culturally-sensitive and trauma-informed care
3. Psychosocial assessment and support

B. Public health and policy

1. Programs to improve housing accessibility/stability for trans and gender diverse people
2. Improved access to mental health and sexual assault support services

C. Future research

1. Evaluate patterns and prevalence of substance use in greater depth
2. Explore further factors or contexts associated with at-risk substance use
3. Strengths-based approach to identify factors that protect against at-risk substance use

D. Co-design with trans and gender diverse people

Limitations

1. ***Cross-sectional design***
   - Prevents causal inference
   - Directionality or temporality cannot be established
2. ***Convenience sample****
   - Participation bias
   - Limits the ability to produce reliable prevalence estimates
3. ***Self-reported data****
   - Recall bias and social desirability bias
4. ***Screening tool validation***
   - AUDIT-C and DAST-10 tools, though widely used, have not been specifically validated in trans and gender diverse people.
     - However, a cut-off ≥ 3 is supported by the literature for both scales[1,2]
5. ***Variables – limited range and potential interaction***
   - ***Private Lives 3*** did not capture all potentially relevant variables, limiting the scope and depth of analysis.
   - Certain variables, such as sexual assault and housing instability, may themselves be influenced by external minority stressors

*Commonly used in studies of people who use substances and LGBTQIA+ people, with literature suggesting these results are generally reliable and valid[3–6]

1. Smith, P. C., Schmidt, S. M., Allensworth-Davies, D., & Saitz, R. (2010). A single-question screening test for drug use in primary care. *Arch Intern Med*, *170*(13), 1155-1160.
2. Dermody, S. S., Uhrig, A., Moore, A., Raessi, T., & Abramovich, A. (2023). A narrative systematic review of the gender inclusivity of measures of harmful drinking and their psychometric properties among transgender adults. *Addiction*, *118*(9), 1649-1660.
3. Hill, A. O., Amos, N., Lyons, A., Jones, J., McGowan, I., Carman, M., & Bourne, A. (2023). Illicit drug use among lesbian, gay, bisexual, pansexual, trans and gender diverse, queer and asexual young people in Australia: Intersections and associated outcomes. *Drug and Alcohol Review*, *42*(3), 714-728.
4. The Trevor Project. (2022). *2022 National Survey on LGBTQ Youth Mental Health*. https://www.thetrevorproject.org/survey-2022/
5. Bharat, C., Webb, P., Wilkinson, Z., McKetin, R., Grebely, J., Farrell, M., Holland, A., Hickman, M., Tran, L. T., Clark, B., Peacock, A., Darke, S., Li, J. H., & Degenhardt, L. (2023). Agreement between self-reported illicit drug use and biological samples: a systematic review and meta-analysis. *Addiction*, *118*(9), 1624-1648. https://doi.org/10.1111/add.16200
6. Darke, S. (1998). Self-report among injecting drug users: a review. *Drug Alcohol Depend*, *51*(3), 253-263; discussion 267-258. https://doi.org/10.1016/s0376-8716(98)00028-3

Thank you

Questions, comments, or suggestions?