Unhealthy Alcohol Use Among Adolescents and Adults with Behavioral Risk for HIV in Western Kenya

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Background

- Higher rates of alcohol use have been observed in Kenya in populations with behavioral risk for HIV, such as female sex workers and men who have sex with men (MSM), than in the general population.
- Substance use can increase the likelihood of engaging in sexual risk behaviors.
- **Objectives:**
  - Assess prevalence of alcohol and other substance use among adolescents and adults with behavioral risk for HIV in Kericho and Homa Bay, Kenya
  - Identify factors associated with unhealthy alcohol use and binge drinking in this population

Methods

Study and Data Collection:

- The Multinational Observational Cohort of HIV and other Infections (MOCHI) is an HIV incidence cohort in Kenya, Uganda, and the Philippines.
- Enrolled people aged 15-55 years with behavioral risk for HIV in the previous 24 weeks (STI, transactional sex, condomless sex, injection drug use, or anal sex with male partners).
- Analyses used demographic and behavior data collected at enrollment, including Alcohol Use Disorders Identification Test – Consumption (AUDIT-C) and Patient Health Questionnaire-9 (PHQ-9)

Definitions:

- Unhealthy alcohol use: AUDIT-C score ≥5
- Binge drinking: ≥6 drinks on ≥1 occasion in the past 12 weeks
- Depression (PHQ-9): none/minimal (0-4), mild (5-9), moderate or severe (≥10)
- Transactional sex: reported occupation as sex worker or self-reported sex in exchange for money, drugs, food, shelter, or transportation

Statistical Analyses:

- Described distribution of combinations of types of substance use using Euler diagrams
- Estimated adjusted prevalence ratios (aPRs) and 95% CIs for factors associated with binge drinking and unhealthy alcohol use using complete-case multivariable robust Poisson regression

Figure 1. Prevalences of alcohol and other substance use

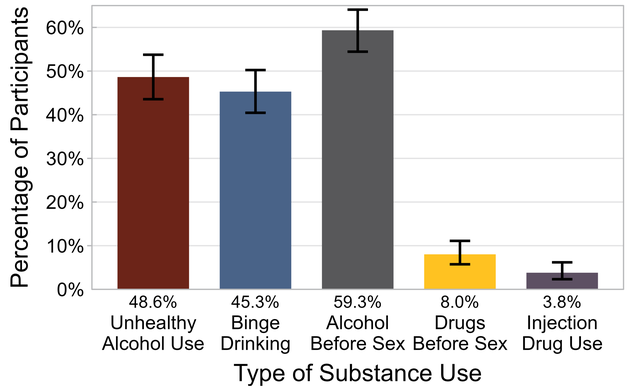
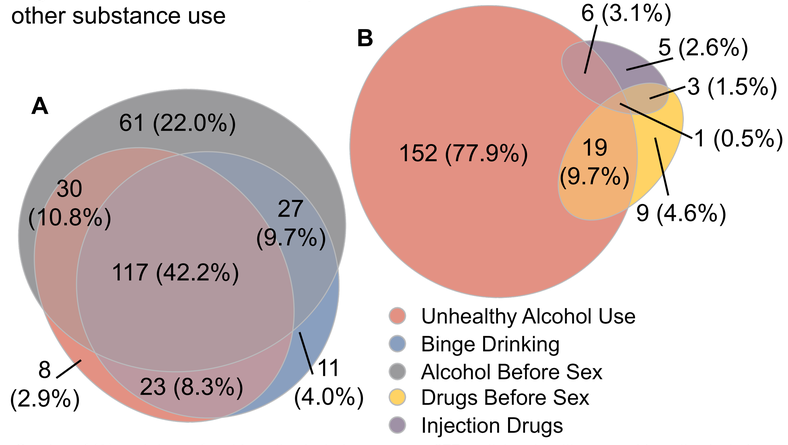


Figure 2. Co-occurrence of problematic alcohol use and other substance use



Overlap of (A) each type of problematic alcohol use among 277 participants with any problematic alcohol use and (B) unhealthy alcohol use with drug use before sex and injection drug use among 195 participants with any of these types of substance use.

We found high prevalence of unhealthy alcohol use among people with behavioral risk for HIV in Kenya and substantial overlap between unhealthy alcohol use and alcohol and/or drug use before sex.

Table 1. Factors associated with binge drinking and/or unhealthy alcohol use.

	Binge Drinking (n=365)			Unhealthy Alcohol Use (n=344)		
	aPR	95% CI	p	aPR	95% CI	p
Age (ref: 15-24 years)						
≥25 years	**1.45**	**(1.09, 1.94)**	**0.011**	1.23	(0.91, 1.66)	0.173
Occupation (ref: Other)						
Sex worker	1.18	(0.68, 2.04)	0.547	**2.59**	**(1.09, 6.18)**	**0.032**
Fisher/fish trader	1.58	(0.74, 3.36)	0.237	**3.98**	**(1.36, 11.62)**	**0.012**
Entertainment/hospitality	**2.57**	**(1.52, 4.35)**	**<0.001**	**4.41**	**(1.91, 10.19)**	**<0.001**
Commerce/business/skilled trade	0.86	(0.36, 2.04)	0.730	2.02	(0.69, 5.94)	0.202
Transactional Sex (ref: No)						
Yes	**1.59**	**(1.02, 2.47)**	**0.040**	1.24	(0.78, 1.96)	0.366
Depression (ref: None/minimal)						
Mild	**1.45**	**(1.13, 1.87)**	**0.004**	**1.47**	**(1.17, 1.84)**	**0.001**
Moderate or severe	1.27	(0.94, 1.72)	0.122	1.13	(0.84, 1.52)	0.426

Among 407 enrolled participants, 393 (96.6%) had a non-missing binge drinking response and 366 (89.9%) had a complete AUDIT-C. Models also adjusted for study site, sex, household income, marital status, number of partners, and inconsistent condom use; none significant in either model at the 0.05 level.

Results

- Among 407 participants enrolled between December 2021 and April 2023**:**
  - 325 (79.9%) female
  - 262 (64.7%) sex workers
  - Median age 22 years (interquartile range: 19-24)
- Observed high prevalences of problematic alcohol use, lower prevalences of drug use before sex and injection drug use (**Figure 1**)
- There was substantial overlap among the different types of problematic substance use.
  - 74.0% of participants who used alcohol before sex also had other problematic alcohol use (**Figure 2A**).
  - 60.5% of participants who reported drug use before sex or injection drug use also had unhealthy alcohol use (**Figure 2B**).
- Factors associated with binge drinking and/or unhealthy alcohol use included being ≥25 years of age; occupation as sex worker, fisher, or in entertainment/hospitality; transactional sex; and mild depression (**Table 1**).

Conclusions

- The high prevalence of problematic alcohol use and substantial overlap between unhealthy alcohol use and alcohol and/or drug use before sex in this cohort of people with behavioral risk for HIV illustrates the connection between substance use and sexual risk behaviors, highlighting the need for strategies to address substance use in this population.
- Factors associated with binge drinking or more general unhealthy alcohol use in these analyses may help characterize groups who could benefit from integrated HIV prevention and substance use disorder services.
  - Integrated mental health and alcohol use disorder services with HIV prevention programs
  - Differentiated service delivery for sex workers and fisherfolk

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