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Heavy drinking among individuals with HIV: Who drinks despite knowledge of the risk?

Jennifer C. Elliott^{1,2}, Malka Stohl², and Deborah S. Hasin^{1,2,3}

¹Department of Psychiatry, Columbia University Medical Center, 1051 Riverside Drive, Box 123, New York NY 10032, USA

²New York State Psychiatric Institute, 1051 Riverside Drive, Box 123, New York NY 10032, USA

³Department of Epidemiology, Mailman School of Public Health, Columbia University, 722 W 168th St, New York, NY 10032, USA

Abstract

Heavy alcohol use can cause medical problems for individuals with HIV, and drinking despite medical contraindications is an indicator of problem use. However, little is known about which individuals with HIV drink despite knowledge of health problems. The current study utilizes two subsamples of individuals with HIV from the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III): those reporting at least one drink (a) in their lifetime (n=205) or (b) in the past year (n=166). Participants reported on drinking despite health problems and symptoms of psychopathology in the past year and in their lifetime, as well as the presence or absence of a family history of alcohol problems. Individuals with a drug use disorder (Adjusted Odds Ratios [AORs] = 3.56–12.65), major depressive disorder (AORs = 10.18–10.55), or a family history of alcohol problems (AORs=33.60–96.01) were more likely to drink despite health problems. Anxiety and personality disorders did not predict increased risk. Individuals with HIV who suffer from drug use disorders or major depressive disorder may be more likely to drink alcohol despite health problems. Individuals who have a family history of alcohol problems were also more likely to engage in this risky behavior, although further research is needed given large confidence intervals. Future research should consider how to best help these at-risk groups avoid alcohol-related harm.

Keywords

HIV; AIDS; Alcohol; Drinking; NESARC; nationally representative

Introduction

Heavy drinking poses risks to morbidity and mortality for individuals with HIV, through biological (e.g., immunosuppression, liver damage) and behavioral (e.g., medication

Correspondence: Jennifer C. Elliott, Columbia University Medical Center/New York State Psychiatric Institute, 1051 Riverside Drive, Box 123, New York NY 10032; (Phone) 646-774-7953; Ice2130@cumc.columbia.edu.

Other author details: Malka Stohl, schlesi@nyspi.columbia.edu, phone: n/a; Deborah Hasin, dsh2@columbia.edu, (646) 774-7909

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adherence) means (Williams et al., 2016). The Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-5) (American Psychiatric Association, 2013) includes drinking despite health problems as a criterion of alcohol use disorder (AUD). However, whether HIV-infected heavy drinkers recognize the danger of drinking is unclear. No studies to date have evaluated which individuals with HIV drink *despite knowledge of alcohol's harm*. Understanding this would help identify those knowingly harming themselves, facilitating provision of needed care.

Mental health disorders and family history of alcohol problems underlie drinking despite health problems among individuals with liver disease (Elliott, Stohl, & Hasin, in press), and depression and drug use predict heavy drinking among individuals with HIV (Cook et al., 2013). The current study evaluates whether such factors predict *drinking despite health problems* among individuals with HIV.

Methods

Participants and procedures

The National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III, 2012–2013) is a nationally representative multistage probability sample of 36,309 adults, residing in households and group quarters (B.F. Grant et al., 2014; B. F. Grant, Goldstein, Saha, et al., 2015). Hispanic, Black and Asian individuals were oversampled to ensure accuracy of data in these racial/ethnic groups. The response rate was 60.1% (household: 72%; person-level: 84%). Data were adjusted for nonresponse and weighted to represent the U.S. civilian population (Bureau of the Census, 2013). Institutional Review Board approval and informed consent were obtained. Our samples were those who reported ever testing positive for HIV/AIDS and reported at least one drink in their lifetime (n=205) and in the past year (subset, n=166) (only drinkers were assessed for drinking despite health problems).

Measures

The Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5), an in-person computer-assisted interview based on the DSM-5, was used for all assessments.

Participants reported past-year drinking: typical and maximum quantity (in standard drinks), and typical and binge frequency (eleven-point frequency scale). Past-year and lifetime AUD were assessed (reliability: $K=0.62$ (B. F. Grant, Goldstein, Smith, et al., 2015), validity: $K=0.62$ (Hasin, Greenstein, et al., 2015)).

Drinking despite health problems was used both to diagnose AUD and as our primary outcome. Participants were asked: “In your entire life, did you EVER...Continue to drink even though you knew it was causing you a health problem or making a health problem worse?” (yes/no); if yes, “Did this happen in the last 12 months?” (yes/no).

Participants were assessed for any drug use disorder (cannabis, cocaine, stimulant, sedative/tranquilizer, hallucinogen, inhalant/solvent, club drug, opioid, or heroin); major depressive disorder; any anxiety disorder (panic disorder, social phobia, specific phobia, or generalized anxiety disorder); and schizotypal, borderline, and antisocial personality disorders. Past-year

and lifetime timeframes were assessed for drug, depressive, and anxiety disorders; only lifetime data were available for personality disorders. These AUDADIS-5 diagnoses have fair reliability ($\kappa=0.40\text{--}0.54$) (B. F. Grant, Goldstein, Smith, et al., 2015), and validity ($\kappa=0.22\text{--}0.66$) (Hasin, Greenstein, et al., 2015; Hasin, Shmulewitz, et al., 2015).

Participants reported whether their biological parents and/or siblings had a history of being an alcoholic or problem drinker. This variable was treated as binary (any/none).

Analysis Plan

First, descriptive information is presented. Second, individuals who did versus did not drink despite health problems were compared regarding AUD (chi-square tests) and drinking (t-tests), to confirm that this symptom indicates problematic drinking. Third, demographic predictors of (lifetime and past-year) drinking despite health problems were evaluated using logistic regressions. Fourth, mental health disorders were evaluated as predictors using logistic regressions, with and without control for demographic covariates. Lifetime mental health disorders were evaluated as predictors of lifetime drinking despite health problems among lifetime drinkers. Past-year drug, depressive, and anxiety disorders (and lifetime personality disorders) were evaluated as predictors of past-year drinking despite health problems among past-year drinkers. Finally, family history was evaluated as a predictor of lifetime and past-year drinking despite health problems, among lifetime and past-year drinkers. Analyses were performed using SUDAAN software (RTI International, Research Triangle Park, North Carolina), which adjusts standard errors for the complex survey design using Taylor series linearization. Results are presented using odds ratios (ORs), adjusted odds ratios (AORs), 95% Confidence Intervals (95% CIs), and p-values.

Results

HIV-infected lifetime drinkers were 53.8% male (46.2% female) and 60.4% white (22.2% Black; 13.0% Hispanic; 4.4% Other). The average age was 44.7 (s.d.=1.3; range: 18–88); 56.5% had at least some college education. Some (19.1%) reported lifetime drinking despite health problems. HIV-infected past-year drinkers were 53.3% male (46.7% female) and 61.5% white (22.0% Black; 11.6% Hispanic; 4.9% Other). The average age was 43.7 (s.d.=1.5; range: 18–74); 59.7% had at least some college education. Few (8.4%) reported past-year drinking despite health problems.

All results supported the validity of the drinking despite health problems variables. Among lifetime drinkers, 63.3% of individuals reporting lifetime drinking despite health problems met lifetime criteria for AUD, as compared with 33.9% of those who did not, $p<0.05$. Past-year results were consistent (87.8% vs. 23.9%, respectively, $p=0.01$). Past-year drinking quantity ($p<0.05$), maximum quantity ($p=0.01$), typical frequency ($p<0.0001$), and binge frequency ($p<0.0001$) were higher among those drinking despite health problems.

Sex, education, and ethnicity were not associated with lifetime or past-year drinking despite health problems, $p>0.10$. Older individuals were more likely to report lifetime (but not past year) drinking despite health problems (OR = 1.03 [95% CI: 1.00–1.07]), $p<0.05$.

Drug use disorder predicted increased drinking despite health problems (ORs=2.94–9.96; AOR=3.56–12.65), $ps<0.05$ (Table 1), as did major depressive disorder (OR=5.83–6.50; AOR=10.18–10.55), $ps<0.05$. Any anxiety disorder and personality disorders did not ($ps>0.05$). Family history increased likelihood of drinking despite health problems (OR=23.41–56.49; AOR=33.60–96.01), $ps<0.001$.

Discussion

HIV-infected individuals with drug use disorders and major depressive disorder (but not anxiety or personality disorders) were more likely to drink despite health problems. Family history of alcohol problems was also found to increase risk. These predictors were robust regardless of covariates and timeframe. Besides older individuals having more opportunity to drink despite health problems over their lifetimes, demographics were not predictive.

A recent study evaluated predictors of drinking despite health problems among individuals with liver disease (Elliott et al., in press). Although both studies found family history to increase risk, psychopathology predictors differed. For liver disease, drug and personality disorders increased risk. For HIV, drug and major depressive disorders increased risk. The relevance of depression to drinking for HIV has been documented (Cook et al., 2013). This study also demonstrates some parallels with research examining AUDs in the general population (B. F. Grant, Goldstein, Saha, et al., 2015). Both studies show that drug use disorder and major depressive disorder increase risk for problematic drinking; however, anxiety disorder, antisocial and borderline personality disorders predicted AUD in the general population, but not in this study. This suggests the specific importance of drug and depressive disorders for HIV, perhaps due to frequent drug use and particular relevance of depression.

Limitations are noted. Recency of HIV infection is unknown. However, past-year behavior must overlap at least in part with infection, and lifetime results were consistent. Only one item assessed drinking despite health problems. However, whether more items would improve assessment of this specific construct is unclear. Past-year personality disorders were not available. Yet, personality disorders are supposedly chronic. All participants reported drinking, even those not endorsing drinking despite health problems. However, endorsement of this item reflected heavier use. Family history results yielded large confidence intervals. Although findings were suggestive (past year: 1/74 without family history and 12/92 with family history drank despite health problems; lifetime: 3/88 and 39/117, respectively), replication in a larger sample would generate more stable estimates. White participants were overrepresented. Research with more minority individuals with HIV is needed. Despite these limitations, strengths include use of a large, recent, nationally representative dataset, and attention to an understudied construct in an important population.

HIV-infected individuals with drug use disorders and major depressive disorder are more likely to drink despite health problems, perhaps because drug problems interfere with judgment and/or impulsivity, or depressive symptoms lead to hopelessness or maladaptive coping. Family history also increased risk. Future research should improve intervention with

these high-risk individuals. However, as participants drank *despite knowledge of risk*, active intervention is recommended over education.

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Table 1:

Predictors of drinking despite health problems among individuals with HIV.

	Outcome: Drinking despite health problems					
	Lifetime drinkers ^a (N=205)			Past-year drinkers ^b (N=166)		
	OR (95% CI)	AOR ^c (95% CI)		OR (95% CI)	AOR ^c (95% CI)	
<i>Mental health disorders</i>						
Drug use disorder	2.94 (1.19–7.25) [*]	3.56 (1.42–8.92) ^{**}		9.96 (1.83–54.10) ^{**}	12.65 (1.67–95.78) [*]	
Major depressive disorder	5.83 (2.32–14.68) ^{***}	10.55 (3.79–29.38) ^{***}		6.50 (1.44–29.23) [*]	10.18 (2.15–48.23) ^{**}	
Any anxiety disorder	1.29 (0.52–3.21)	1.74 (0.68–4.49)		2.27 (0.57–9.07)	2.37 (0.42–13.45)	
Borderline PD	2.08 (0.69–6.28)	2.22 (0.70–7.03)		1.26 (0.25–6.33)	1.31 (0.34–5.06)	
Schizotypal PD	1.07 (0.33–3.44)	1.21 (0.42–3.47)		2.24 (0.33–15.26)	2.51 (0.54–11.72)	
Antisocial PD	3.25 (0.81–13.08)	3.13 (0.82–11.99)		2.55 (0.43–15.10)	2.66 (0.73–9.75)	
<i>Family history - alcohol problems</i>	23.41 (4.71–116.42) ^{***}	33.60 (6.15–183.59) ^{***}		56.49 (6.71–475.63) ^{***}	96.01 (8.85–1041.98) ^{***}	

Note.

^{*} p<0.05.

^{**} p<0.01.

^{***} p<0.001.

(A)OR=(Adjusted)Odds Ratio. PD=personality disorder.

^aLifetime predictors, lifetime outcome.

^bPast-year predictors (except lifetime PD), past-year outcome.

^cAdjusted for age, sex, ethnicity, education.