



## CFAR Substance Use Research Core (SURC) Faculty Publication and New Awards Digest

New research on HIV and substance use by our SURC faculty.

If you have any other publications or awards, please send them to [Natalia Gnatienco](#) to include in the next publication digest!

Please remember to cite CFAR support (P30AI042853) on your future publications!

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webpage

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### Announcements

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The SURC held their first Bimonthly Journal Club on February 11th, 2022. Core co-director, Dr. Karsten Lunze, led a discussion on "Analyzing Intersectional Stigma". Thank you to those who attended and participated! Please keep an eye out for an announcement about the next CFAR SURC Journal Club!

The SURC is co-hosting a visiting scholar research-in-progress webinar with the International URBAN ARCH Center Training and Mentoring Program. Dr. Karen Cropsey (UAB) will discuss her recent NIAAA-Funded P01 grant, the Zambia Alabama HIV Alcohol Comorbidity Program (ZAMBAMA) on March 2, 2022. If you are interested in attending, please register [here](#)!

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### New Publications

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**A collaborative care intervention to improve opioid prescribing among providers caring for persons with HIV: Impact on satisfaction, confidence, and trust.**

Colasanti JA, Del Rio C, Cheng DM, Liebschutz JM, Lira MC, Tsui JI, Walley AY, Forman LS, Root C, Shanahan CW, Briden CL, Harris C, Outlaw K, Armstrong WS, **Samet JH**. [Drug Alcohol Depend](#). 2022 Feb 1;231:109250.

**Background:** HIV clinicians report low confidence and satisfaction prescribing chronic opioid therapy (COT). We hypothesized that the Targeting Effective Analgesia in Clinics for HIV (TEACH) intervention [a system-level improvement to increase guideline concordant care for COT] would improve satisfaction, confidence, and trust among PWH

and their clinicians.

**Methods:** We conducted a two-arm, unblinded cluster randomized controlled trial (RCT) to assess the TEACH intervention. Clinicians were randomized in a 1:1 ratio to receive either the TEACH intervention (an IT-enabled nurse care manager, opioid education, academic detailing, and access to addiction specialists) or usual care. Outcomes were the following: clinician satisfaction (primary); confidence prescribing COT; patient satisfaction with COT; and trust in clinician. Intention-to-treat analyses were conducted using linear and logistic regression models.

**Results:** Clinicians (n = 41) were randomized and their 114 patients assessed. At 12 months, the adjusted mean difference in satisfaction with COT was 1.11 points for intervention vs control clinicians (Scale 1-10; 95% confidence interval [CI]: -0.04 to 2.26, p = 0.06). The adjusted mean confidence with prescribing COT was 1.01 points higher among intervention clinicians (Scale 1-10; 95% CI: 0.05-1.96, p = 0.04). There were no significant differences in patient satisfaction with COT (adjusted odds ratio (AOR) 1.17, 95% CI: 0.50-2.76, p = 0.72) or trust in provider (AOR 1.63, 95% CI: 0.65-4.09, p = 0.30).

**Conclusions:** TEACH did not significantly affect prescriber satisfaction, patient satisfaction with pain management or patient trust; however, it did improve prescriber confidence. TEACH is a promising strategy to improve provider prescribing of COT for PWH without adverse patient satisfaction or trust in provider.

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### **The relationship between drinking behavior and conversational processes during a brief alcohol reduction intervention for people with HIV.**

Lauckner C, Walthers J, Stuck J, Bryant K, Edelman EJ, Fiellin DA, Hansen NB, Kahler CW, Magill M, Mastroleo NR, Maisto SA. [AIDS Behav.](#) 2022 Jan 10.

People with HIV (PWH) frequently engage in unhealthy alcohol use, which can adversely affect antiretroviral adherence and HIV disease progression. Brief interventions based on Motivational Interviewing (MI), including the Brief Negotiated Interview (BNI), can help to reduce drinking. This study examines MI processes observed during a single 15-20 min BNI session delivered by social workers to PWH with unhealthy alcohol use (N = 59) in the context of a stepped care intervention to reduce alcohol consumption. BNI sessions were coded for technical and relational processes encouraged in MI, such as autonomy support, instructive language, and self-exploration. Multiple regression analyses explored the relationship between: (1) Participants' pre-intervention drinking behaviors (weekly drinks and heavy drinking days) and these MI processes, and (2) MI processes and intervention outcomes. Results indicated that PWH who reported more weekly drinks at baseline engaged in less self-exploration, while social workers delivering the BNI used less instructive language for those who reported more heavy drinking days. PWH who engaged in more self-exploration and received more autonomy support had fewer heavy drinking days 6 months after the intervention. These findings suggest the value of providing more opportunities within BNIs to encourage self-exploration, as it may help to enhance intervention efficacy.

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### **Associations of alcohol use, HIV infection, and age with brain white matter microstructure.**

Monnig MA, Gullett JM, Porges EC, Woods AJ, Monti PM, Tashima K, Jahanshad N, Thompson P, Nir T, Cohen RA. [J Neurovirol.](#) 2021 Nov 8.

Heavy drinking and HIV infection are independently associated with damage to the brain's white matter. The purpose of the current study was to investigate whether current alcohol consumption, HIV infection, and associated characteristics were associated with indices of white matter microstructural integrity in people living with HIV (PLWH) and seronegative individuals. PLWH and controls were categorized as non-drinkers, moderate drinkers, or heavy drinkers. White matter fractional anisotropy (FA), radial diffusivity (RD), and axial diffusivity (AD) were assessed using diffusion tensor imaging (DTI). Voxelwise analyses using tract-based spatial statistics were followed by confirmatory region-of-interest (ROI) analyses. Data from 108 participants (62 PLWH, 46 controls) were suitable for analysis. Average age ( $\pm$  standard deviation) was  $45.2 \pm 11.1$  years, and the sample was 42% female. The majority of PLWH were on antiretroviral therapy (94%) and were virally suppressed (69%). PLWH and controls did not differ on substance use. Heavier alcohol intake was significantly associated with lower FA and higher RD in widespread areas.

Heavy drinking was significantly associated with higher AD in a small region. The main effect of HIV was not significant, but a significant HIV-age interaction was observed. Follow-up ROI analyses confirmed the main effect of drinking group and HIV-age interaction. In conclusion, results are consistent with a dose-dependent association of alcohol use with lower white matter microstructural coherence. Concordance between FA and RD findings suggests dysmyelination as a mechanism. Findings underscore the need to address unhealthy alcohol use in HIV-positive and seronegative individuals, the consequences of which may be exacerbated by aging.

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### **Exploring the association between social support and hazardous alcohol use among persons living with HIV in South Western Uganda.**

Ngabirano C, Fatch R, Muyindike WR, Emeyonu NI, Adong J, Weiser SD, **Samet JH**, Cheng DM, Hahn JA. [AIDS Behav](#). 2022 Jan 18.

Hazardous alcohol use and psychological distress are common among persons living with HIV (PLWH). In Uganda, HIV prevalence is 6.2% with average pure alcohol consumption per capita of 9.8 L. Social support may mitigate hazardous alcohol use. In a cohort of 443 PLWH, we measured social support using the Duke-UNC functional social support scale and self-reported alcohol consumption using the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C), augmented by phosphatidylethanol (PEth). We examined the association between low social support and hazardous alcohol use using multiple logistic regression models. 30% had low social support and 44% had hazardous alcohol use (AUDIT-C  $\geq 3$  for women and  $\geq 4$  for men and/or PEth  $\geq 50$  ng/mL). We did not detect an association between low social support and hazardous alcohol use. Social support may play no role or a minimal role in preventing PLWH from hazardous alcohol use.

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### **Periods of homelessness linked to higher VACS index among HIV-positive people who use drugs.**

Reddon H, Socias ME, Justice A, Cui Z, Nosova E, Barrios R, Fairbairn N, **Marshall BDL**, Milloy MJ. [AIDS Behav](#). 2022 Jan 22.

We sought to evaluate the impact of homelessness on HIV disease progression among people who use unregulated drugs (PWUD) living with HIV and test if this association was mediated by adherence to antiretroviral therapy (ART). We applied general linear mixed-effects modeling to estimate the longitudinal relationship between homelessness and the Veterans Aging Cohort Study (VACS) Index, a validated measure of HIV disease progression that predicts all-cause mortality, among a prospective cohort of PWUD. In a longitudinal model adjusted for ART adherence, homelessness was significantly associated with increased VACS Index scores and 16% of the association was mediated by ART adherence. These findings indicate that homelessness was a significant risk factor for HIV disease progression and this association was marginally mediated by ART adherence. Future studies are needed to quantify the other mechanisms (e.g., food insecurity, mental health) by which homelessness increases mortality risk among PWUD living with HIV.

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### **Addressing intersectional stigma as a care barrier for HIV-positive people who inject drugs: Design of an RCT in St. Petersburg, Russia.**

Rossi SL, Sereda Y, Luoma JB, Pavlov N, Toussova O, Vasileva J, Abramova K, Bendiks S, Kiriazova T, Vetrova M, Blokhina E, Krupitsky E, Lioznov D, Lodi S, **Lunze K**. [Contemp Clin Trials Commun](#). 2021 Nov 19;24:100861. PMID: PMC8636824.

**Background:** HIV-positive people who inject drugs (PWID) experience stigma related to their substance use and HIV, with adverse consequences to their health care utilization and mental health. To help affected individuals cope with their intersectional stigma and reduce its negative impact on health and health care, we adapted a behavioral stigma coping intervention for this HIV key population.

**Objective:** To conduct a randomized controlled trial (RCT) testing the 'Stigma Coping to Reduce HIV risks and Improve substance use Prevention and Treatment' (SCRIPT) intervention, a community-based, adapted form of Acceptance and Commitment Therapy (ACT), for PWID living with HIV in St. Petersburg, Russia.

**Methods:** We recruited 100 PWID living with HIV from civil society organizations (CSO) delivering harm reduction and HIV prevention services in St. Petersburg, Russia. We randomized participants 2:1 to receive either the intervention (three adapted ACT sessions in a group format over one month and usual CSO care) or usual CSO care alone. ACT aims to help affected individuals cope with stigma by increasing their psychological flexibility to handle stigma-related negative expectations, emotions and experiences. The primary outcomes were satisfaction with the intervention, and changes in HIV and substance use stigma scores.

**Conclusions:** Stigma coping interventions targeting HIV-positive PWID outside of formal health care settings may help them confront negativities in their lives originating from intersectional stigma and reduce stigma's impact as a health care barrier.

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### **Stigma and ART initiation among people with HIV and a lifetime history of illicit drug use in Saint-Petersburg, Russia-A prospective cohort analysis.**

Vetrova M, Lodi S, Rateau L, Patts G, Blokhina E, Palatkin V, Yaroslavtseva T, Toussova O, Bushara N, Bendiks S, **Gnatienco N**, Krupitsky E, Lioznov D, **Samet JH, Lunze K.** *Int J Drug Policy.* 2022;102:103600.

**Background:** HIV-positive people who inject drugs (PWID) are stigmatized and face more challenges in accessing ART. The natural course of stigma and its role on ART initiation in this population is unclear. We examined 1] whether HIV stigma changes over time and 2] whether HIV and substance use stigma are associated with ART initiation in a prospective cohort of HIV-positive PWID in St. Petersburg, Russia.

**Methods:** We used data from 165 HIV-positive PWID who were ART-naïve at enrollment and generalized estimating equations to assess changes in HIV stigma between baseline, 12- and 24-month study visits. Logistic regression estimated associations of HIV stigma and substance use stigma with ART initiation. All models were adjusted for gender, age, CD4 count, duration of HIV diagnosis, recent (past 30-day) drug use and depressive symptoms.

**Results:** Participants characteristics were the following: median age of 34 (Q1; Q3: 30; 37) years; 30% female; 28% with CD4 count <350; 44% reported recent drug use. During the study period, 31% initiated ART and the median time between HIV diagnosis and ART initiation was 8.5 years (Q1; Q3: 4.68; 13.61). HIV stigma scores decreased yearly by 0.57 (95% CI -1.36, 0.22). More than half (27/47 [57.4%]) of participants who were eligible for ART initiation per local ART guidelines did not initiate therapy. Total HIV stigma and substance use stigma scores were not associated with ART initiation (AOR 0.99, 95%CI 0.94-1.04; AOR 1.01, 95%CI 0.96-1.05, respectively).

**Conclusion:** In this Russian cohort of HIV-positive, ART-naïve PWID, stigma did not change over time and was not associated with ART initiation. Addressing stigma alone is unlikely to increase ART initiation rates in this population. Reducing further existing structural barriers, e.g., by promoting equal access to ART and the value of substance-use treatment for ART treatment success should complement stigma-reduction approaches.

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### **Game Plan-A brief web-based intervention to improve uptake and use of HIV pre-exposure prophylaxis (PrEP) and reduce alcohol use among gay and bisexual men: Content analysis.**

**Wray TB, Chan PA, Guigayoma JP, Kahler CW.** *JMIR Form Res.* 2022 Jan 5;6(1):e30408. doi: 10.2196/30408. PMID: 34989679; PMCID: PMC8771347.

**Background:** HIV pre-exposure prophylaxis (PrEP) has considerable potential for reducing incidence among high-risk groups, such as gay, bisexual, and other men who have sex with men (GBM). However, PrEP's effectiveness is closely linked with consistent use, and a variety of individual-level barriers, including alcohol use, could impede optimal uptake and use. Web-based interventions can encourage medication adherence, HIV prevention behaviors, and responsible drinking and may help support PrEP care, particularly in resource-limited settings.

**Objective:** We previously developed a web application called Game Plan that was designed to encourage heavy drinking GBM to use HIV prevention methods and reduce their alcohol use and was inspired by brief motivational interventions. This paper aims to describe the web-based content we designed for integration into Game Plan to help encourage PrEP uptake and consistent use among GBM. In this paper, we also aim to

describe this content and its rationale.

**Methods:** Similar to the original site, these components were developed iteratively, guided by a thorough user-centered design process involving consultation with subject-matter experts, usability interviews and surveys, and user experience surveys.

**Results:** In addition to Game Plan's pre-existing content, the additional PrEP components provide specific, personal, and digestible feedback to users about their level of risk for HIV without PrEP and illustrate how much consistent PrEP use could reduce it; personal feedback about their risk for common sexually transmitted infections to address low-risk perceptions; content challenging common beliefs and misconceptions about PrEP to reduce stigma; content confronting familiar PrEP and alcohol beliefs; and a change planning module that allows users to select specific goals for starting and strategies for consistent PrEP use. Users can opt into a weekly 2-way SMS text messaging program that provides similar feedback over a 12-week period after using Game Plan and follows up on the goals they set.

**Conclusions:** Research preliminarily testing the efficacy of these components in improving PrEP outcomes, including uptake, adherence, sexually transmitted infection rates, and alcohol use, is currently ongoing. If supported, these components could provide a scalable tool that can be used in resource-limited settings in which face-to-face intervention is difficult.

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### **Game Plan, a web-based intervention to improve adherence and persistence to HIV pre-exposure prophylaxis and reduce heavy drinking in gay, bisexual, and other men who have sex with men: Usability and user experience testing.**

**Wray TB, Chan PA, Kahler CW.** *JMIR Form Res.* 2021 Nov 16;5(11):e31843. doi: 10.2196/31843. PMID: 34783662; PMCID: PMC8663613.

**Background:** Encouraging consistent use of pre-exposure prophylaxis (PrEP) is essential for reducing HIV incidence, particularly among gay, bisexual, and other men who have sex with men (GBM), and especially those who engage in heavy drinking. Although practice guidelines recommend providing adherence counseling to PrEP patients, clinics and providers may not have the resources or expertise to provide it. Internet-facilitated interventions have been shown to improve HIV prevention outcomes, including medication and care adherence. Game Plan is a website we created to help users make a tangible plan for reducing their HIV risk. We designed additional components of Game Plan to address key individual level barriers to PrEP use.

**Objective:** The aim of this mixed methods research is to test the usability and user experience of these components with intended users: GBM who drink heavily and are on PrEP.

**Methods:** In study 1 (usability), we completed a detailed individual interview in which participants (n=10) walked through a prototype of the website, thinking aloud as they did, and completed a follow-up interview and web-based survey afterward. Study 2 (user experience) involved providing participants (n=40) with a link to the prototype website to explore on their own and asking them to complete the same follow-up survey afterward. Qualitative data were analyzed using thematic analysis, and descriptive statistics were used to analyze quantitative data.

**Results:** Users in both studies gave the website excellent ratings for usability, overall satisfaction, and quality, and most often described the site as informative, helpful, and supportive. Users also rated the site's content and feel as respectful of them and their autonomy, empathetic, and they stated that it conveyed confidence in their ability to change. The study 1 interviews highlighted the importance of the website's esthetics to the participants' engagement with it and its credibility in prompting genuine reflection.

**Conclusions:** GBM who reported heavy drinking and used PrEP generally found a website focused on helping them to create a plan to use PrEP consistently to be helpful. Adopting user-centered design methods and attending to the esthetics of mobile health interventions are important steps toward encouraging engagement and reducing at-risk behaviors.

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