



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 Gnatienko](#) to include in the next publication digest!

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

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Relevant Funding Announcements

[RFA-DA-25-060](#): High Priority HIV and Substance Use Research (RM1 Clinical Trial Optional)

[RFA-DA-22-040](#): High Priority HIV and Substance Use Research (R01 Clinical Trial Optional)

[RFA-DA-25-020](#): Ending the Epidemic: New Models of Integrated HIV/AIDS, Addiction, and Primary Care Services (R34 Clinical Trial Required)

[RFA-DA-25-019](#): Ending the Epidemic: New Models of Integrated HIV/AIDS, Addiction, and Primary Care Services (R01 Clinical Trial required)

[RFA-DA-23-061](#): NIDA REI: Reaching Equity at the Intersection of HIV and Substance Use: Novel Approaches to Address HIV Related Health Disparities in Underserved Racial and/or Ethnic Populations (R01 Clinical Trial Optional)

[RFA-DA-23-062](#): NIDA REI: Reaching Equity at the Intersection of HIV and Substance Use: Novel Approaches to Address HIV Related Health Disparities in Underserved Racial and/or Ethnic Populations (R34 Clinical Trial Optional)

[RFA-DA-25-059](#): Ending the Epidemic: New Models of Integrated HIV/AIDS, Addiction, and Primary Care Services (R34 Clinical Trial Optional)

[RFA-DA-25-021](#): Effect of HIV and Substance Use Comorbidity on the Placenta and Maternal Outcomes (R01 Clinical Trial Optional)

Please [let us know](#) if you are interested in pursuing these opportunities!

New Grants

Community-engaged implementation strategies for acceptance interventions to improve access to care for people with HIV and injection drug use

[R03DA059341](#) (Lunze, Karsten) 09/01/2023 – 08/31/2025

Various barriers including stigma can limit access to HIV and substance use for people with HIV who inject drugs. Acceptance and Commitment Treatment (ACT) empowers these people to cope with stigma and other care barriers, leading to an increase in health services utilization. ACT is an evidence-based intervention that uses acceptance, mindfulness, and behavior change processes to improve psychological flexibility. In the SCRIPT randomized controlled trial, we showed that ACT could increase antiretroviral therapy (ART) initiation and substance use care engagement for people with HIV and active injection drug use. This study recruited participants at a community-based harm reduction site and trained psychologists delivered the intervention at a community clinic, but community-engaged implementation strategies have not yet been studied. Implementation strategies for evidence-based care access interventions for people with HIV and injection drug use are rare. This project will narrow this gap, assessing appropriate implementation outcomes and their relations with trial outcomes. We will also explore implementation strategies, to be tested in future hybrid effectiveness-implementation trials of ACT. Using the existing mixed-methods data from the SCRIPT trial, this R03 proposes to assess implementation outcomes and identify implementation strategies (including intervention adaptation, training, fidelity monitoring). The results from this project will aid in access to health services for the stigmatized population of people with HIV who inject drugs and provide the groundwork for future trials testing acceptance-based approaches to improve care access for people with HIV, substance use and potentially other stigmatized conditions.

New Publications

Development and evaluation of visualizations of smoking data for integration into the Sense2Quit app for tobacco cessation. [J Am Med Inform Assoc](#). 2024 Jan 18;31(2):354-362. PMID: PMC10797277.

Brin M, Trujillo P, Huang MC, **Cioe P**, Chen H, Xu W, Schnall R.

Importance: Due to insufficient smoking cessation apps for persons living with HIV, our study focused on designing and testing the Sense2Quit app, a patient-facing mHealth tool which integrated visualizations of patient information, specifically smoking use.

Objectives: The purpose of this paper is to detail rigorous human-centered design methods to develop and refine visualizations of smoking data and the contents and user interface of the Sense2Quit app. The Sense2Quit app was created to support tobacco cessation and relapse prevention for people living with HIV.

Materials and methods: Twenty people living with HIV who are current or former smokers and 5 informaticians trained in human-computer interaction participated in 5 rounds of usability testing. Participants tested the Sense2Quit app with use cases and provided feedback and then completed a survey.

Results: Visualization of smoking behaviors was refined through each round of usability testing. Further, additional features such as daily tips, games, and a homescreen were added to improve the usability of the app. A total of 66 changes were made to the Sense2Quit app based on end-user and expert recommendations.

Discussion: While many themes overlapped between usability testing with end-users and heuristic evaluations, there were also discrepancies. End-users and experts approached the app evaluation from different perspectives which ultimately allowed us to fill knowledge

gaps and make improvements to the app.

Conclusion: Findings from our study illustrate the best practices for usability testing for development and refinement of an mHealth-delivered consumer informatics tool for improving tobacco cessation yet further research is needed to fully evaluate how tools informed by target user needs improve health outcomes.

Is abstinence from alcohol and smoking associated with less anxiety and depressive symptoms among people with HIV? [AIDS Behav.](#) 2024 Jan 29. Epub ahead of print.

Freibott CE, Biondi BE, Rao SR, Blokhina E, Dugas JN, Patts G, Bendiks S, Krupitsky E, Chichetto NE, **Samet JH**, Freiberg MS, **Stein MD**, Tindle HA.

Achieving abstinence from alcohol, tobacco, or both may improve mental health, but is understudied in people with HIV (PWH). The St PETER HIV randomized clinical trial compared varenicline, cytisine, and nicotine replacement therapy on alcohol and smoking behavior among 400 PWH in Russia. The primary exposure was thirty-day point prevalence abstinence (PPA) from (1) alcohol, (2) smoking, (3) both, or (4) neither and was assessed at 1, 3, 6 and 12-months as were the study outcomes of anxiety (GAD-7) and depressive (CES-D) symptoms. The primary aim was to examine the association between smoking and/or alcohol abstinence and subsequent symptoms of depression and anxiety. Primary analysis used repeated measures generalized linear modeling to relate PPA with mental health scores across time. In secondary analyses, Kruskal-Wallis tests related PPA with mental health scores at each timepoint. Primary analyses did not identify significant differences in anxiety or depressive symptoms between exposure groups over time. Secondary analyses found CES-D scores across PPA categories were similar at 1-month (11, 10, 11, 11) and 6-months (10, 10, 11, 11) but differed at 3-months (9, 11, 10, 12; $p = 0.035$) and 12-months (10, 6, 11, 10; $p = 0.019$). GAD-7 scores did not vary across PPA categories at any time point. While abstinence was associated with fewer depressive symptoms at times, findings were not consistent during follow-up, perhaps reflecting intermittent relapse. PWH with polysubstance use and mental health comorbidity are complex, and larger samples with sustained abstinence would further elucidate effects of abstinence on mental health.

Stigma and other correlates of sharing injection equipment among people with HIV in St. Petersburg, Russia. [Glob Public Health.](#) 2024 Jan;19(1):2296009. Epub 2023 Dec 29.

Kimmel SD, **Samet JH**, Cheng DM, Vetrova M, Idrisov B, Rossi SL, Rateau L, Astone K, Michals A, Sisson E, Blokhina E, Milet-Carty N, Bovell-Ammon BJ, Gnatienco N, Truong V, Krupitsky E, **Lunze K**.

Stigma that people with HIV who inject drugs experience negatively impacts HIV and substance use care, but stigma's association with sharing injection equipment is not known. This is a cross-sectional analysis of data from two studies of people with HIV reporting drug injection ($N = 319$) in St. Petersburg, Russia (September 2018-December 2020). We used logistic regression to examine associations between HIV stigma and substance use stigma scores (categorised into quartiles) and past 30-day equipment sharing, adjusting for demographic and clinical characteristics. Secondary analyses examined associations of arrest history and social support with sharing equipment. Almost half (48.6%) of participants reported sharing injection equipment. Among groups who did and did not share, mean HIV stigma (2.3 vs 2.2) and substance use stigma (32 vs 31) scores were similar. Adjusted analyses detected no significant associations between HIV stigma quartiles (global p -value = 0.85) or substance use stigma quartiles (global p -value = 0.51) and sharing equipment. Neither arrest history nor social support were significantly associated with sharing equipment. In this cohort, sharing injection equipment was common and did not vary based on stigma, arrest history, or social support. To reduce equipment sharing, investments in sterile injection equipment access in Russia should be prioritised over interventions to address stigma.

Alcohol consumption and illicit drug use: associations with fall, fracture, and acute

healthcare utilization among people with HIV infection. [J Acquir Immune Defic Syndr.](#)

2023 Dec 22. Epub ahead of print.

Kim TW, Bertholet N, Magane KM, Lloyd-Travaglini C, Winter MR, **Samet JH**, Erlandson KM, **Stein MD**, Bryant KJ, Saitz R, Heeren TC.

Background: Given alcohol and/or other drug (AOD) use occurs among people with HIV (PWH), we examined its association with falls and fall-related outcomes and if frailty moderates the association.

Setting: Northeastern US city.

Methods: We analyzed an observational cohort of PWH with current or past AOD use. Alcohol measures were any past 14-day heavy use, average alcohol/day, and days with heavy use. Drug use measures were past 30-day illicit use of cocaine, opioids, and sedatives. Repeated cross-sectional associations were estimated with separate multivariable GEE regression models for each fall-related outcome.

Results: Among PWH (n=251; mean age 52 [standard deviation=10]), 35% reported heavy alcohol use, 24% cocaine, 16% illicit opioids, 13% illicit sedatives, 35% any fall; 27% were frail. Heavy alcohol use was associated with a fall (AOR=1.49, 95%CI: 1.08, 2.07), multiple falls (AOR=1.55 95%CI: 1.10, 2.19), and fall/fracture-related emergency department (ED) visit or hospitalization (AOR=1.81, 95%CI: 1.10, 2.97). Higher average alcohol/day and more heavy drinking days were associated with multiple falls. Illicit sedative use was associated with a fall, multiple falls, and ED/hospitalization and opioid use with fracture. Frailty moderated the association of heavy alcohol use and a fall (AOR=2.26, 95%CI 1.28, 4.01 in those frail) but not in those not frail.

Conclusion: The effect of AOD use on falls and fall-related outcomes was most pronounced with alcohol, particularly among frail PWH. Heavy alcohol, illicit sedative, and illicit opioid use are high-priority targets for preventing falls and fall-related consequences for PWH.

Heavy alcohol use and HIV outcomes: the moderating role of pain. [AIDS Behav.](#)

2024 Jan 18. Epub ahead of print.

Lucero MM, Palfai TP, Heeren TC, **Stein MD**, Kim TW, Saitz R.

Pain and heavy alcohol consumption are prevalent among people living with HIV/AIDS (PLWH), each contributing to impaired functioning and diminished quality of life. Each of these conditions may have negative effects on the HIV care continuum, but less is known about their combined influences. The current study examined how heavy drinking and pain were associated with HIV viral suppression and CD4 cell count among participants receiving antiretroviral therapy (ART). The study sample consisted of 220 PLWH with past 12-month substance dependence or ever injection drug use enrolled in a large HIV cohort study. Logistic regression analyses showed an interaction between pain level (no/mild pain vs moderate/severe) and heavy drinking on viral suppression such that heavy drinking was a significant predictor of poorer viral suppression only for those who experienced moderate/severe pain. We also examined whether ART adherence differentially mediated the association between heavy drinking and HIV viral suppression by level of pain. Although there was a significant indirect effect of heavy drinking on viral suppression among those with moderate/severe pain, moderated mediational analyses did not indicate that the indirect effect of heavy drinking on viral suppression through ART adherence differed significantly by level of pain. Pain level did not significantly moderate the association between heavy drinking and CD4 cell count. We conclude that heavy drinking may be particularly likely to be associated with poorer HIV viral suppression among PLWH with moderate or severe pain. Providers should routinely address comorbid heavy drinking and pain to improve HIV outcomes.

Research and engagement considerations for alcohol use telehealth services within HIV care: a qualitative exploration in federally qualified health centers. [AIDS Care.](#)

2023 Nov;35(11):1786-1795. Epub 2023 Apr 11. PMCID: PMC10543395.

Scott K, Guy AA, Zelaya DG, Surace A, Elwy AR, Keuroghlian AS, Mayer KH, **Monti PM**, **Kahler CW**.

The prevalence of alcohol misuse is high among people with HIV (PWH); however, access to and utilization of evidence-based alcohol misuse interventions remain limited.

Telehealth is one treatment approach with the potential for enhancing substance use disorder treatment utilization for PWH served by Federally Qualified Health Centers (FQHCs). However, questions remain regarding barriers to alcohol-focused telehealth service integration and telehealth research in FQHCs. This study employed qualitative methods, guided by the Dynamic Sustainability Framework, to evaluate barriers and cultural factors impacting FQHC telehealth integration. Eighteen qualitative interviews were completed with staff and leaders across four FQHCs. Interviews were analyzed using directed content analysis, and codes were organized into a priori and emergent themes. Key themes included the presence of common workflows for referring clients to substance use disorder treatment; existing research workflows and preferences for active project staff involvement; telehealth barriers including exacerbation of healthcare disparities and high provider turnover; and the importance of cultural humility and telehealth adaptations for sexual, gender, racial and ethnic minority clients. Findings from this study will inform the development of an alcohol-focused telehealth implementation strategy for a Hybrid Type 1 implementation effectiveness trial to enhance FQHC substance use disorder treatment.

A network science approach to sex-polydrug use among Black sexually minoritized men and transgender women: the N2 cohort study. [Prev Sci](#). 2024 Feb 19. Epub ahead of print.

Shrader CH, Duncan DT, Knox J, Chen YT, Driver R, Russell JS, Moody RL, Kanamori M, Durrell M, Hanson H, Eavou R, **Goedel WC**, Schneider JA.

Black sexually minoritized men (SMM) and transgender women (TW) are subgroups with lower rates of substance use and comparable rates of condom use relative to White SMM and TW yet experience heightened vulnerability to HIV. This study sought to explore associations of substance use, including sex-drug use (i.e., drug or alcohol use during sex to enhance sex), and condomless sex among Black SMM and TW. Data were collected from Black SMM and TW living in Chicago, Illinois, enrolled in the Neighborhoods and Networks (N2) cohort study, from November 2018 to April 2019. We used bivariate analyses followed by a multilevel egocentric network analysis to identify factors associated with condomless sex. We conducted Spearman correlation coefficients to examine correlations between pairs of sex-drugs to enhance sex. We used a bipartite network analysis to identify correlates of sex-drug use and condomless sex. A total of 352 Black SMM and TW (egos) provided information about 933 sexual partners (alters). Of respondents, 45% reported condomless sex and 61% reported sex-drug use. In unadjusted analyses, marijuana (34%) and cocaine/crack (5%) sex-drug use were associated with condomless sex ($p < 0.05$). Condomless sex was positively associated with sex-polydrug use, or the use of 2+ drugs or 1 drug and alcohol (OR = 1.48; 95% CI: 1.02-2.14; $p = 0.039$), and negatively associated with sharing an HIV-negative serostatus with a sexual partner (OR = 0.57; 95% CI: 0.33-0.98; $p = 0.041$), having a different HIV serostatus with a sexual partner (OR = 0.37; 95% CI: 0.21-0.64; $p < 0.001$) or not knowing the HIV serostatus of a sexual partner (OR = 0.47; 95% CI: 0.26-0.84; $p = 0.011$). The following pairs of sex-polydrug use had Spearman correlation coefficients higher than 0.3: marijuana and alcohol, ecstasy and alcohol, cocaine/crack and ecstasy, and methamphetamine and poppers ($p < 0.05$). HIV prevention interventions for Black SMM and TW designed to reduce HIV transmission through egocentric sexual networks could address sex-drug use through sex-positive and pleasure-centered harm reduction strategies and provide and promote biomedical prevention and care options at supraoptimal levels.

Influence of patient trust in provider and health literacy on receipt of guideline-concordant chronic opioid therapy in HIV care settings. [J Opioid Manag](#). 2023 Sep-Oct;19(5):385-393.

Williams EC, Frost MC, Lodi S, Forman LS, Lira MC, Tsui JI, **Lunze K**, Kim T, Liebschutz JM, Rio CD, **Samet JH**.

Objective: Persons with HIV (PWH) frequently receive opioids for pain. Health literacy and trust in provider may impact patient-provider communication, and thus receipt of guideline-concordant opioid monitoring. We analyzed baseline data of HIV-positive patients on chronic opioid therapy (COT) in a trial to improve guideline-concordant COT in HIV clinics.

Design: Retrospective cohort study.

Setting: Two hospital-based safety net HIV clinics in Boston and Atlanta.

Patients and participants: A cohort of patients who were ≥ 18 years, HIV-positive, had received ≥ 3 opioid prescriptions from a study site ≥ 21 days apart within a 6-month period during the prior year and had ≥ 1 visit at the HIV clinic in the prior 18 months.

Main outcome measures: Adjusted logistic regression models examined whether health literacy and trust in provider (scale scored 11-55, higher indicates more trust) were associated with: (1) ≥ 2 urine drug tests (UDTs) and (2) presence of an opioid treatment agreement.

Results: Among 166 PWH, mean trust in provider was 47.4 (SD 6.6); 117 (70 percent) had adequate health literacy. Fifty patients (30 percent) had ≥ 2 UDTs and 20 (12 percent) had a treatment agreement. The adjusted odds ratio (aOR) for a one-point increase in trust in provider was 0.97 for having ≥ 2 UDTs (95 percent CI 0.92-1.02) and 1.03 for opioid treatment agreement (95 percent CI 0.95-1.12). The aOR for adequate health literacy was 0.89 for having ≥ 2 UDTs (95 percent CI 0.42-1.88) and 1.66 for an opioid treatment agreement (95 percent CI 0.52-5.31).

Conclusions: Health literacy and trust in provider were not associated with chronic opioid therapy quality outcomes.

Pilot randomized controlled trial of game plan for PrEP: a brief, web and text message intervention to help sexual minority men adhere to PrEP and reduce their alcohol use. [AIDS Behav.](#) 2023 Nov 16. Epub ahead of print.

Wray TB, Chan PA, **Kahler CW**, Ocean EMS, Nittas V.

Suboptimal adherence to oral PrEP medications, particularly among younger sexual minority men (SMM), continues to be a key barrier to achieving more substantial declines in new HIV infections. Although variety of interventions, including web and text-message-based applications, have successfully addressed PrEP adherence, very few have addressed the potential influence of alcohol. This pilot study explored whether the Game Plan for PrEP, a brief, web-based and text messaging intervention, helped promote PrEP persistence and adherence and reduced condomless sex and alcohol use. Seventy-three heavy-drinking SMM on PrEP were recruited online from states with Ending the HIV Epidemic jurisdictions and randomly assigned 1:1 to receive either the Game Plan for PrEP intervention or an attention-matched control. We collected online surveys assessing primary outcomes at one, three, and six months post-enrollment. As secondary outcomes, we also collected dried blood spot samples at baseline, three, and six months to analyze for biomarkers of PrEP and alcohol use. Our results showed that the odds of stopping PrEP or experiencing a clinically meaningful lapse in PrEP adherence (≥ 4 consecutive missed doses) were not different across the two conditions. We also did not find evidence of any differences in condomless sex or drinking outcomes across conditions, although participants in both conditions reported drinking less often over time. These findings were consistent across both self-reported outcomes and biomarkers. Overall, we did not find evidence that our brief, web and text messaging intervention encouraged more optimal PrEP coverage or moderate their alcohol use.
