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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 toNatalia Gnatienko to include in the next publication digest!

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

Visit the SURC webpage

Announcements

The Inter-CFAR Substance Use Research Community (I-SURC) will hold an Implementation Science Panel Discussion on May 24, 2022 at 12:00pm ET. Featured panelists include Drs. Elvin Geng, Larry Heard, Emily C. Williams, and Hansel Tookes. If you are interested in attending and have not yet registered for this event, please register **here**!

The SURC is co-hosting a visiting scholar research-in-progress webinar with the International URBAN ARCH Center Training and Mentoring Program. Dr. Sylvia Naar (Florida State University) and Dr. Karen MacDonell (Wayne State University) will discuss their recent NIAAA-Funded P01 grant, SHARE Program: Innovations in Translational Behavioral Science to Improve Self-Management of HIV and Alcohol Reaching Emerging Adults on Thursday, June 16, 2022 at 3:30pm ET. If you are interested in attending, please register **here**!

New Grants

Integrating long-acting injectable treatment to improve medication adherence among persons living with HIV and opioid use disorder
1R34DA055498-01 (Langdon, Kristen J; Rich, Josiah D) 4/01/2022-2/28/2025

Treatment services for HIV and OUD have historically been delivered across multiple settings leading to fragmented and uncoordinated care. Models of behavior change suggest that addressing multiple health conditions simultaneously through integrated,

evidence-based, interventions has the potential to overcome traditional barriers to optimize engagement and improve clinical outcomes. Consistent with this perspective, numerous studies have documented that receipt of opioid agonist treatment, in the context of HIV care, is associated with ART adherence and decreased HIV viral loads. Recent pharmacological advancements have led to the development of novel long-acting, injectable, (LAI) medications for both HIV (cabotegravir co-administered with rilpivirine) and OUD (extended-release buprenorphine). These therapies have the potential to dramatically improve adherence by eliminating the need for daily pill-taking. Despite the extensive evidence base supporting LAI for both HIV and OUD, and clinical guidelines supporting integrated care provision, currently little is known about 1) the perceived acceptability/feasibility/safety of combining HIV and OUD treatment into a single point of care; b) which populations and within which type of settings these medications may be optimally delivered; and c) what factors may impede or facilitate future implementation of these treatments. Therefore, the goal of the proposed application is to advance integrated treatment for HIV and OUD by conducting formative research with the target population and key stakeholders to develop a clinical protocol to guide the delivery of combined LAI treatment; evaluate the feasibility, acceptability, and safety of this integrated delivery model; and assess factors to optimize the potential for scalability.

New Publications

Supporting the health of HIV-positive people who inject drugs during COVID-19 and beyond: Lessons for the United States from St. Petersburg, Russia. *Am J Public Health*. 2022 Apr;112(S2):S123-S127. PMCID: PMC8965173.
Carroll JJ, Rossi SL, Vetrova MV, Kiriazova T, **Lunze K.**

Discrimination and alcohol problems among heavy drinking HIV-positive men who have sex with men: The buffering effect of a brief Motivational Intervention to reduce alcohol use. *Drug Alcohol Depend.* 2022 Apr 1;233:109384. PMCID: PMC8968970.
Guy AA, Zelaya DG, Surace A, Mastroleo NR, Pantalone DW, **Monti PM**, Mayer KH, **Kahler CW.**

Introduction: Heavy alcohol use negatively impacts health outcomes among people with HIV and is especially prevalent among men who have sex with men (MSM). Alcohol problems among MSM with HIV may occur, in part, due to increased stress caused by experiences of identity-based discrimination, such as heterosexism, HIV stigma, and racism. The current study examined (a) whether MSM with HIV who experience greater identity-based discrimination reported higher levels of alcohol problems over time in the absence of alcohol intervention, and (b) whether motivational interviewing (MI) to reduce alcohol use would attenuate the effects of discrimination on alcohol problems.
Methods: Data came from a clinical trial in which MSM with HIV were randomized into brief MI for alcohol harm reduction [n = 89] or an HIV treatment as usual assessment only control [TAU; n = 91]. Alcohol use and problems were assessed at baseline, 3, 6, and 12 months.
Results: Generalized Estimating Equations found a significant interaction between MI and baseline identity-based discrimination, such that in those not receiving MI, discrimination prospectively predicted alcohol problems over time (B = 0.065, SE = 0.018, p < .001, 95% Wald CI [.030- 0.100]). In those receiving MI, discrimination did not have an effect (B = -0.002, SE = 0.131, p = .987, 95% Wald CI [- 0.258 to 0.254]).
Conclusions: Even without explicitly targeting experiences of identity-based discrimination, a person-centered intervention, like MI, appears to mitigate the negative impact of identity-based discrimination on alcohol-related problems.

Impact of illicit opioid use on markers of monocyte activation and systemic inflammation in people living with HIV. *PLoS One*. 2022 May 5;17(5):e0265504. PMCID: PMC9070930.

Kholodnaia A, **So-Armah K**, Cheng D, **Gnatienko N**, Patts G, **Samet JH**, Freiberg M, Lioznov D.

Introduction: We hypothesize that illicit opioid use increases bacterial translocation from the gut, which intensifies systemic inflammation.
Objective: To investigate the association between opioid use and plasma soluble CD14 [sCD14], interleukin-6 [IL-6] and D-dimer in people living with HIV (PLWH).
Methods: We analyzed data from the Russia ARCH study-an observational cohort of 351 ART-naive PLWH in St. Petersburg, Russia. Plasma levels of sCD14 (primary outcome), IL-6 and D-dimer (secondary outcomes) were evaluated at baseline, 12, and 24 months. Participants were categorized into three groups based on illicit opioid use: current, prior, and never opioid use. Linear mixed effects models were used to evaluate associations.
Results: Compared to never opioid use, sCD14 levels were significantly higher for participants with current opioid use (AMD = 197.8 ng/ml [11.4, 384.2], p = 0.04). IL-6 levels were also higher for participants with current vs. never opioid use (ARM = 2.10 [1.56, 2.83], p <0.001). D-dimer levels were higher for current (ARM = 1.95 [1.43, 2.64], p <0.001) and prior (ARM = 1.57 [1.17, 2.09], p = 0.004) compared to never opioid use.
Conclusions: Among PLWH, current opioid use compared to never use is associated with increased monocyte activation and systemic inflammation.

Crack cocaine use frequency is associated with HIV disease severity independent of antiretroviral therapy exposure: a prospective cohort study. *AIDS Behav*. 2022 Apr 16.
Macmadu A, Reddon H, **Marshall BDL**, Fairbairn N, Nolan S, Socías ME, Milloy MJ.

We sought to evaluate the effect of crack cocaine use frequency on HIV disease severity among HIV-positive people who use unregulated drugs (PWUD). We analyzed data from the ACCESS study, an open prospective cohort of HIV-positive PWUD including comprehensive HIV clinical monitoring in a setting with no-cost healthcare. Multivariable generalized linear mixed-effects models were used to estimate the independent effect of time-updated crack cocaine use frequency on HIV disease severity, adjusting for ART exposure and relevant confounders. In multivariable adjusted models, daily or greater frequency of crack cocaine use was significantly associated with higher VACS Index scores (β = 0.8, 95% confidence interval: 0.1, 1.5) as compared to none. Our finding suggests that daily or greater frequency of crack cocaine use exacerbates HIV disease severity independent of ART exposure. The observed effect may reflect an underlying biological mechanism or other factors linked with crack cocaine use; further investigation is warranted.

Testing and treatment for latent tuberculosis infection in people living with HIV and substance dependence: A prospective cohort study.
Runels T, Ragan EJ, Ventura AS, Winter MR, White LF, Horsburgh CR, **Samet JH**, **Saitz R**, Jacobson KR. *BMJ Open*. 2022 Mar 10;12(3):e058751. PMCID: PMC8915380.

Objective: To quantify the proportion of people living with HIV (PLWH) with other tuberculosis (TB) risk factors that completed the latent tuberculosis infection (LTBI) care cascade and describe factors associated with attrition. The care cascade was defined as follows: (1) receipt of an LTBI test and result, (2) initiation of LTBI treatment and (3) completion of LTBI treatment.
Design: Prospective cohort study.
Setting: Reactivation of LTBI remains a large source of active TB disease in the USA. PLWH and those who use substances are at greater risk and are harder to engage and retain in care.
Participants: Participants enrolled in a Boston cohort of PLWH from 2012 to 2014.
Primary and secondary outcome measures: Our primary outcome was the number and proportion of participants who completed each stage of the cascade and the factors associated with completing each stage. Our secondary outcomes were differences between participants tested with an interferon gamma release assay (IGRA) versus tuberculin skin test and differences between participants who tested positive versus negative for LTBI.
Results: Only 189 of 219 (86.3%) participants completed testing. Five of the 11 with LTBI

initiated and three completed treatment. Participants tested with an IGRA were more likely to complete testing (OR 3.87, 95% CI 1.05 to 14.30) while among participants successfully tested, being foreign-born was associated with a positive test result (OR 3.95; 95% CI 1.13 to 13.77).
Conclusions: Although the majority completed LTBI testing, our findings warrant further investigation in a larger cohort to better understand factors that lead to suboptimal treatment initiation and completion in a low-burden country.

Police abuse and care engagement of people with HIV who inject drugs in Ukraine.
Schoenberger SF, Idrisov B, Sereda Y, Kiriazova T, Makarenko O, Bendiks S, Ahuja N, Dutta A, Flanigan T, Gillani FS, **Lunze K**. *Glob Public Health*. 2022 Mar 28:1-16.

Police abuse affects people who inject drugs (PWID), including those with HIV, and negatively impacts care engagement. This cross-sectional study evaluated police abuse among PWID receiving MOUD (medication for opioid use disorder) living with HIV and associations with HIV treatment adherence and receipt of NGO services. We assessed lifetime and past six-month rates of police abuse among a cohort of Ukrainian PWID with HIV receiving MOUD (*n* = 190) from August to September 2017. Logistic regression models evaluated associations between past six-month police abuse and past 30-day antiretroviral therapy (ART) adherence, and past six-month NGO service receipt. Almost all (90%) participants reported lifetime police abuse: 77% reported physical violence and 75% reported paying the police to avoid arrest. One in four females (25%) reported police-perpetrated sexual violence. Recent police abuse was reported by 16% of males and 2% of females and was not associated with ART adherence (aOR: 1.1; 95% CI:0.3-5.0) or NGO service receipt (aOR: 3.4; 95% CI:0.6-18.3). While lifetime police abuse rates were high, few participants reported recent police abuse, which was not linked to care engagement. These trends should encourage the Ukrainian government for public health-public safety partnerships and legal interventions to eliminate human rights violations against PWID living with HIV.

Examining the impact of race on motivational interviewing implementation and outcomes with HIV+ heavy drinking men who have sex with men. *Int J Environ Res Public Health.* 2022 Mar 25;19(7):3930. PMCID: PMC8997518.
Surace A, Zelaya DG, Guy AA, Mastroleo NR, Durst A, Pantalone DW, **Monti PM,** Mayer KH, **Kahler CW.**

Motivational interviewing (MI)-based interventions focus on changing behavior through building client motivation. It is unknown how racial mismatch between clients and providers may impact MI implementation and subsequent behavior. We used a mixed methods approach to examine differences in Motivational Interviewing Skill Code (MISC) coded sessions and post-session outcomes between a sample of HIV-positive cisgender men who have sex with men (MSM) participants of an MI-based intervention to reduce heavy drinking who identified as persons of color (POC; *n* = 19) and a matched sample of White participants (*n* = 19). We used quantitative methods to analyze how providers implemented the intervention (i.e., MISC codes) and post-session drinking. We used qualitative analyses of session transcripts to examine content not captured by MISC coding. Quantitative analyses showed that providers asked fewer open-ended questions and had a lower ratio of complex reflections to simple reflections when working with POC participants, but no significant differences were observed in drinking post-intervention between participants. Qualitative analyses revealed that participants discussed how racial and sexual orientation discrimination impacted their drinking. Allowing clients to share their experiences and to explore individually meaningful reasons for behavioral change may be more important than strict adherence to MI techniques.
