



Association of substance use with ART adherence and viral suppression among people living with HIV entering LA county jail

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Introduction

- HIV diagnosis, linkage and retention in care, and adherence to antiretroviral therapy (ART) are steps in the care continuum enabling consistent viral suppression (VS) for people living with HIV. Achieving VS is known to extend life expectancy and prevent further transmission.
- People living with HIV (PLWH) entering the criminal justice system receive consistent ART and achieve viral suppression during incarceration, yet when in their communities, many of them struggle with substance abuse which often serves as a barrier to HIV care and is a reason for incarceration.
- Roughly 63% of jail inmates in the U.S. have substance use disorders (SUDs). SUDs are associated with poorer HIV treatment outcomes.
- Expanding our understanding of the types of SUDs among PLWH entering jail may provide insight into developing effective approaches in improving access to HIV care, ART adherence and VS.
- In this study, we utilized baseline data from LINK LA, a peer navigation RCT for PLWH being released from LA county jail (LACJ) to examine the association of substance use with ART adherence and HIV viral suppression upon jail entry.



Aims

- To examine the associations of substance use and other baseline sample characteristics with:
 1. **Adherence to ART** within 30 days prior to entry into LA county jail
 2. **HIV viral suppression** at time of jail entry

Methods

Cross-sectional analysis of the baseline assessment of LINK LA, a randomized clinical trial conducted from December 2012 through October 2015 that recruited 365 HIV-infected men and transgender women leaving Los Angeles County Jail.

Statistical Analysis:

- Descriptive analysis of substance use and covariates (sociodemographic, and gender/risk group)
- Bivariate associations between HIV care engagement and substance use, as well as between covariates and HIV care engagement
- Multivariable regression models to assess the associations of ART adherence and HIV viral suppression

Results

Table 1. Sociodemographics Stratified by Substance Use Before Jail Entry¹ in LINK LA

Characteristics	All Hard Drugs ² % (n)	Cocaine % (n)	Meth. % (n)	Total in Group % (n)
SUD Prevalence % (N)	71 (253)	17 (61)	58 (206)	100 (356)
Age				
18-34 years	74 (101)	10 (14)**	69 (95)***	38 (137)
Race				
Hispanic	75 (83)*	14 (15)***	69 (76)***	31 (110)
Black, non-Hispanic	63 (95)*	26 (40)***	40 (60)***	42 (151)
White, non-Hispanic	79 (75)*	6 (6)***	73 (70)***	27 (95)
Gender Risk ³				
Transgender (M-to-F)	77 (41)***	32 (17)**	58 (31)***	15 (53)
Male-to-male sex	80 (160)***	12 (24)**	70 (140)***	57 (201)
Male-to-female sex	38 (21)***	18 (10)**	21 (12)***	16 (56)
Annual Income				
0-\$10,000	69 (103)	19 (29)	55 (82)	42 (150)
Insurance status				
Insured	71 (111)	17 (26)	57 (88)	45 (346)

*p<0.05 ; **p<0.01 ; ***p<0.001

¹ Within 30 days before jail entry

² Hard drugs include heroin, crack, cocaine, methamphetamines, and/or oxycodone or other opiates

³ Risk/Gender group is combination of both variables

Table 2. Bivariate and Multivariate Associations of Substance Use and Covariates with ART Adherence in LINK LA (N=237)

Characteristic	Bivariate Regression Coefficient (SE)	Multivariate Regression Coefficient (SE)
Hard drug use ¹	-19.58 (5.08)***	-20.6 (5.4)***
Methamphetamines	-11.69 (-2.45)*	-15.57 (5.45)**
Age		
18-34 vs. 35+ years	-1.45 (5.18)	-1.01 (5.29)
Race		
Hispanic vs. White	-5.86 (6.28)	-10 (6.27)
Black vs. White	-8.68 (5.81)	-19.26 (6.25)**
Gender Risk ²		
Trans. vs. MSF	-8 (8.7)	-1.59 (8.74)
MSM vs. MSF	-11.68 (6.53)	-7.37 (7.47)
Annual Income		
0-\$10k vs. \$10k+	-1.76 (4.91)	-2.96 (4.78)
Insurance status		
No ins. vs. Insurance	16.34 (4.7)***	16.25 (4.65)***

*p<0.05 ; **p<0.01 ; ***p<0.001

Abbreviations: Trans.; Transgender (M-to-F); MSF, Male-Sex-Female

¹ Hard drugs include heroin, crack, cocaine, methamphetamines, and/or oxycodone or other opiates

² Risk/Gender group is combination of both variables

Results (Continued)

Table 3. Bivariate and Multivariate Associations of Substance Use and Covariates with HIV Viral Suppression in LINK LA (N=350)

Characteristic	Bivariate Odds Ratios (95% CI)	Multivariate Odds Ratios (95% CI)
Hard drug use ¹	0.77 (0.49, 1.22)	0.78 (0.46, 1.32)
Methamphetamines	0.78 (0.51, 1.18)	0.71 (0.43, 1.19)
Age		
18-34 vs. 35+ years	0.63 (0.41, 0.96)*	0.59 (0.36, 0.98)*
Race		
Hispanic vs. White	0.70 (0.40, 1.21)	0.77 (0.41, 1.44)
Black vs. White	0.65 (0.39, 1.09)	0.49 (0.27, 0.90)*
Gender Risk ²		
Trans. vs. MSF	0.57 (0.27, 1.20)	0.53 (0.23, 1.23)
MSM vs. MSF	0.65 (0.36, 1.17)	0.56 (0.28, 1.13)
Annual Income		
0-\$10k vs. \$10k+	0.56 (0.37, 0.86)**	0.53 (0.33, 0.85)**
Insurance status		
No ins. vs. Insurance	1.01 (0.66, 1.53)	1.07 (0.67, 1.70)

*p<0.05 ; **p<0.01 ; ***p<0.001

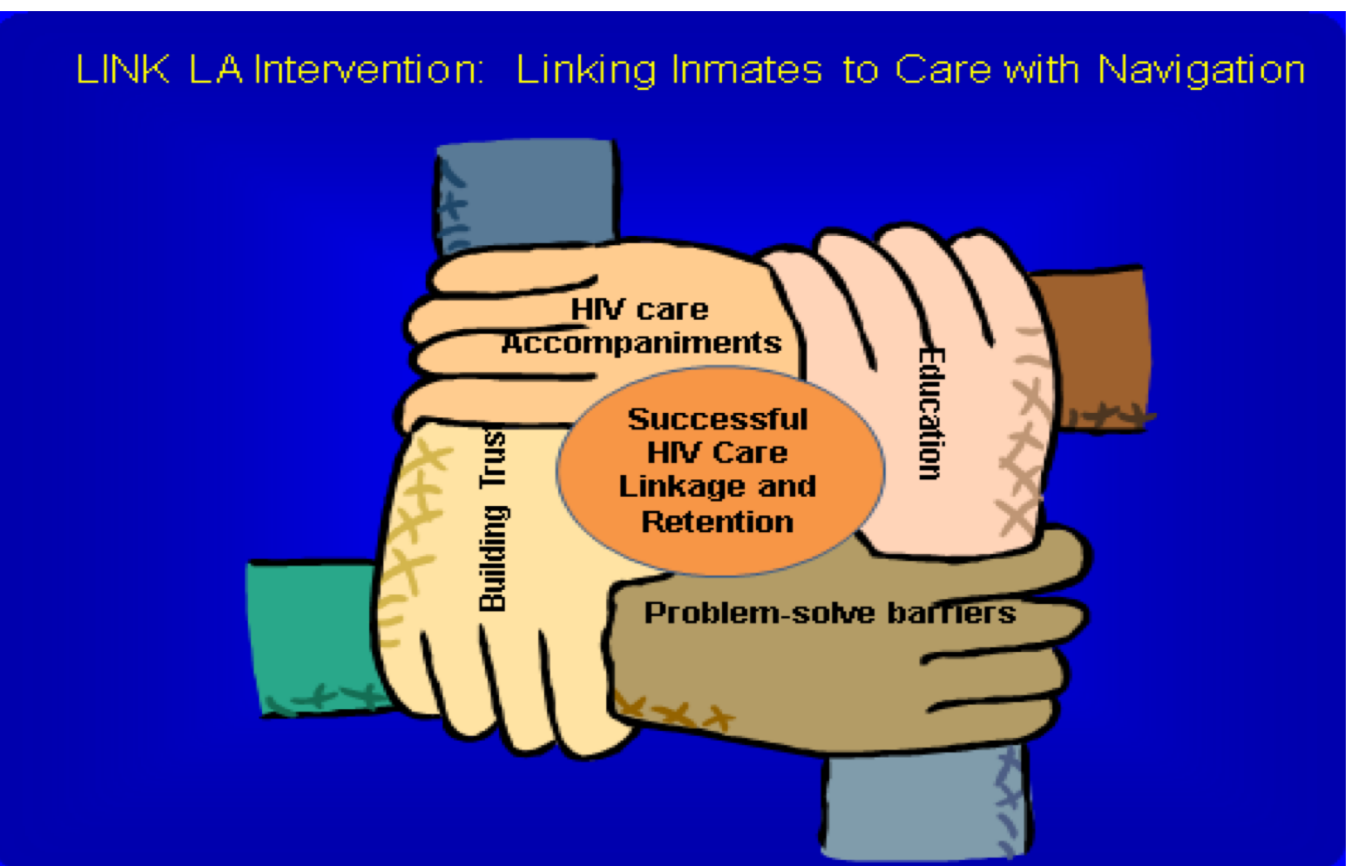
Abbreviations: Trans.; Transgender (M-to-F); MSF, Male-Sex-Female

¹ Hard drugs include heroin, crack, cocaine, methamphetamines, and/or oxycodone or other opiates

² Risk/Gender group is combination of both variables

Summary and Discussion

The majority of the study group reported having some form of substance use within 30 days prior to jail entry with methamphetamines being the predominant hard drug, used mostly by Hispanics and Whites, while cocaine was most frequently used by Blacks. Despite having lower rates of hard drug use overall, Blacks had lower levels of ART adherence and VL suppression. Of note, those reporting low income also had a lower likelihood of achieving viral suppression however, this did not explain the worse outcomes for Blacks. Together these findings suggest the need to better understand and address Blacks' non-financial barriers to obtaining effective treatment for HIV.



Los Angeles County Jail, Twin Towers