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Current Substance Use Behavior Among Severely Mentally Ill Individuals Diagnosed with HIV and HCV

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Does knowledge of HIV/HCV diagnosis change substance use risk behavior among individuals with severe mental illness?

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Background: HIV and HCV Infection: SMI and the general population

General Population

- HIV: 0.5% (McQuillan & Kruszon-Moran, 2008)
- HCV: 1.6% (Armstrong, et al., 2006)

SMI

- HIV: 1.7-5.0% (Rosenberg, et al., 2001)
- HCV: 19% (Rosenberg, et al., 2001)



Reasons for increased risk

- Estimated rates of dual diagnosis (mental illness and substance use disorder) from 15% in community samples (Clark, et al., 2007) to as high as 50-60% in acute care samples (Dixon, 1999; Levin & Hennessy, 2004)
- IDU rates reported between 17-20% for mental health consumers (Osher, et al., 2003; Strauss, et al., 2006)
- Sexual activity associated with substance use increases risk due to:
 - Sex with multiple partners
 - Sex trading for money, alcohol, or drugs (Meade & Sikkema, 2007)
- Sexual partner selection within high-risk social networks (Wright & Gayman, 2005)
- **THOUGH A SUBSTANTIAL AMOUNT OF THE RISK IN THIS POPULATION STEMS FROM SUBSTANCE USE, PREVENTION RESEARCH HAS FOCUSED PRIMARILY ON REDUCING SEXUAL RISK ALONE**

Barriers to effective intervention

- Inadequate screening
 - Studies report from 45-59% of SMI received an HIV test (Goldberg et al., 2005; Meade & Sikkema, 2005)
 - 41% of SMI reported a previous hepatitis test (Goldberg et al., 2005)
- Lack of knowledge among “positives”
- Lack of studies addressing prevention with positives in SMI population

Purpose/Aims



- To examine differences between SMI who reported HIV/HCV diagnoses and those without knowledge of infection on:
 - Substances used in the previous 30 days
 - Route of administration in the previous 30 days
 - Socio-demographic characteristics

Methods

Design

- Secondary analysis:
“Clinical trial of wellness training” UCSF SON 2001-2004
- Utilizing data collected at enrollment

Sample

- 275 SMI participants
- Recruited from 4 crisis residential programs (CRPs) in San Francisco, CA
- Inclusion/Exclusion criteria
 - 18 years or older
 - Admission to CRP
 - English-speaking
 - No dementia related diagnoses
 - Out of hospital at least 1 of the 4 weeks prior to CRP admission

Data and Analysis

- Data

- Interviews at enrollment

- Demographic data
 - Lehman QoL interview
 - Housing, violent victimization, and social security benefits
 - Addiction Severity Index
 - Data on substance use 30 days prior to enrollment

- Clinical records

- Diagnoses
 - Schizophrenia spectrum (n=89)
 - Mood disorders and other (n=186)

- Analysis

- Bivariate analyses

- Chi-square and t-tests

- Logistic regression

- Likelihood of use of substances and routes of administration – reporters vs. non-reporters

Results: Drugs by administration route

Drug	Oral n(%)	Injection n(%)	Smoking n(%)	Nasal n(%)	Route not recorded n(%)	Total n(%)
Amphetamines/stimulants	1(2.9)	18(52.9)	7(20.6)	5(14.7)	3(8.8)	34(100)
Cocaine/crack	0(0.0)	11(16.9)	45(69.2)	9(13.8)	0(0.0)	65(100)
Alcohol to intoxication	90(100)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	90(100)
Marijuana	0(0.0)	0(0.0)	53(100)	0(0.0)	0(0.0)	53(100)
Heroin	0(0.0)	10(76.9)	1(7.7)	1(7.7)	1(7.7)	13(100)
Methadone	8(88.9)	0(0.0)	0(0.0)	1(11.1)	0(0.0)	9(100)

Lifetime and current IDU among reporters and non-reporters

HIV

	No HIV (N=248)	HIV pos. (N=26)	χ^2	p
	n(%)	n(%)		
IDU 30			4.33	.05
No	224(90.3%)	20(76.9%)		
Yes	24(9.7%)	6(23.1%)		
IDU lifetime			18.99	<.0001
No	193(77.8%)	10(38.5%)		
Yes	55(22.2%)	16(61.5%)		

HCV

	No HCV (N=226)	HCV pos. (N=49)	χ^2	p
	n(%)	n(%)		
IDU 30			4.98	.03
No	205(90.7%)	39(79.6%)		
Yes	21(9.3%)	10(20.4%)		
IDU lifetime			68.98	<.0001
No	190(84.1%)	13(26.5%)		
Yes	36(15.9%)	36(73.5%)		

Variables examined: bivariate analyses

Significant associations

- Use of:
 - Methadone ($p=.01$)
 - Amphetamines/stimulants ($p=.01$)
- Administration routes
 - IDU ($p<.0001$)
- Gender ($p=.04$)
- Race/ethnicity ($p=.01$)
- Age ($p=.04$)

Non-significant

- Use of:
 - Alcohol to intoxication
 - Heroin
 - Cocaine/crack
 - Marijuana
- Administration routes
 - Smoking
 - Nasal
- Diagnosis
- Homelessness
- Violent victimization

Logistic Regression: Substances Used

Independent Variable	Odds Ratio	95% CI	p
Age	1.03	.99-1.07	.11
Race			
White (reference)			.15
AA	.94	.45-1.96	.87
Latino	.62	.18-2.16	.46
Asian	.001	.002-1.65E+09	.64
Other	.28	.10-.77	.01
Alcohol to intoxication last 30	.59	.27-1.27	.18
Heroin last 30	.99	.25-3.99	.99
Cocaine/crack last 30	1.50	.70-3.21	.29
Amphetamines/stimulants last 30	2.60	1.01-6.68	.05
Marijuana use last 30	.54	.22-1.30	.17
Number of drugs over 10	1.67	1.34-2.07	<.0001

Logistic Regression: Administration Route

Independent Variable	Odds Ratio	95% CI	p
Age	1.04	1.00-1.07	.04
Race			
White (reference)			.17
AA	.88	.43-1.78	.71
Latino	.81	.24-2.68	.73
Asian	.001	.000-5.19E+09	.64
Other	.29	.11-.78	.01
IDU last 30 days *	4.18	1.81-9.66	.001
Smoking route (other than crack or nicotine)*	1.13	.49-2.60	.78
Smoking route (crack) last 30*	1.32	.59-2.94	.50
Nasal route last 30*	.99	.30-3.30	.99

Discussion

Among HIV/HCV reporters

- High-risk substance use behaviors persisted and exceeded that of non-HIV/HCV reporters with regard to:
 - Injection route of administration
 - Amphetamine/stimulant use

Among non-HIV/HCV reporters

- High-risk substance use behaviors were *as* common in this group as those with knowledge of HIV/HCV diagnoses:
 - Alcohol use to intoxication
 - Cocaine/crack
 - No significant demographic differences except for age with regard to HCV

Conclusions

- Why no change in behavior if there is knowledge of infection? Possibilities include:
 - Lack of sufficient education / counseling
 - Studies with homeless populations and SMI populations have required lengthy interventions to effect behavior change
 - Available harm reduction programs do not address target behaviors
 - Methamphetamine injection
 - Crack smoking and sharing of implements
 - Research on prevention among SMI
 - Largely focused on sexual risk
 - Lack of studies addressing long-term behavior change

Recommendations for Future Research

Limitations of current study

- No measure of sexual risk
- No serologic confirmation of diagnoses
- Possibility of selection bias

Recommendations

- Provide infectious disease care/primary care in mental health settings (Rosenberg et al., 2004)
- Model prevention interventions after “Healthy Living Program” (Rotherman-Borus et al., 2004)
 - 15 - 90 minute individual counseling sessions
- Educate HIV/HCV infected individuals to avoid initiation or transition to IDU (Bravo et al., 2003)
- Combine any efforts to reduce sexual risk with mitigation of substance related risk as well

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