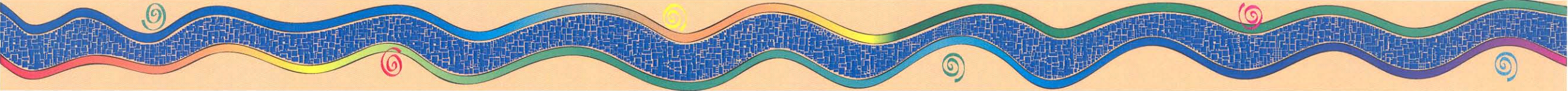


# Alcohol Intoxication and HIV High-Risk Behaviors Among Injection Drug Users (IDUs) in Puerto Rico

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## Background

Puerto Rico ranks second in AIDS incidence (37.0 per 100,000 population) in the U.S., after Washington, DC. The San Juan area has the sixth highest AIDS incidence rate (43.5 per 100,000 population) among large U.S. metropolitan areas (1). Injection drug use is the main AIDS risk category, accounting for 50.8% of all cases (2), and the rate of HIV infection among IDUs in Puerto Rico is among the highest reported in the U.S.

Data from an Island-wide needs assessment of alcohol and drug treatment services for 1997-98, conducted by the Mental Health and Anti-Addiction Services Administration, showed lifetime prevalence rates of 13.2% for alcohol abuse/dependence, as well as 4.3% percent for illicit drug abuse/dependence (3). There is ample evidence that alcohol and illicit drug use are significantly related to poor physical and mental health. Unlike drug use, for which multiple studies have demonstrated an impact on HIV risk behaviors and HIV prevalence, the association between alcohol use and HIV risk behaviors remains unclear. This study seeks to understand the relationship between alcohol use and drug injection and sex risk behaviors among a cohort of Puerto Rican IDUs residing on the Island.

## Methods

A total of 557 IDUs not currently in a treatment program were recruited by outreach workers between 1998-2000 in a suburban area of Puerto Rico. To be eligible, subjects had to have injected drugs during the last 30 days and be 18 years of age or more. Subjects completed in a structured interview to assess injection and sex risk behavior, demographic characteristics, drug use history, health status, and services utilization. HIV testing with pre- and post-counseling was offered. The OriTrak urinalysis TestStik system (Roche Diagnostic Systems, Inc.,

Branchburg, NJ) was utilized to confirm recent use of heroin and cocaine.

### Measures and analyses

Alcohol intoxication was assessed with the following question: "During the last 30 days how many days did you drink alcohol until intoxicated?" Statistical analyses employed included chi-square tests and multiple logistic regressions. The measure of the number of days respondents drank until intoxicated as well as the measures of risk behavior were treated as dichotomous variables in the analyses. All the statistical procedures were conducted with the Statistical Package for the Social Sciences (Version 10.0, SPSS Inc., Chicago IL).

Figure 1. Alcohol Use - Last 30 Days

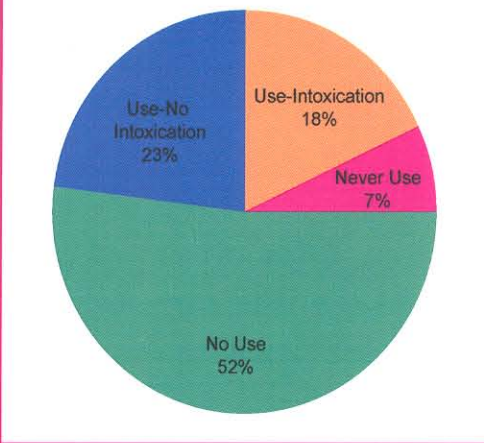


Figure 1 shows alcohol use during the last 30 days. Alcohol intoxication during the last 30 days was reported by 17.8% of participants. Another 22.8% reported using alcohol but not to intoxication level; 52.1% reported no use of alcohol during the last 30 days, and 7.4% reported never using alcohol.

After adjusting for age, education, years of injection, frequency of injection, and HIV status (Table 3), IDUs who reported alcohol intoxication were more likely to share needles (OR = 2.2; 95% CI: 1.1-4.3), share cotton (OR = 2.6; 95% CI: 1.4-4.7), and pool money to buy drugs (OR = 2.5; 95% CI: 1.2-5.3).

Table 3. Results of Injection Behaviors Regressed Against Alcohol Intoxication

	Share Needles			Share Cotton			Pool Money		
	OR	95% CI	p	OR	95% CI	p	OR	95% CI	p
Age: 25-34	1.0	0.5-2.0	.996	1.1	0.6-2.0	.710	1.7	1.0-3.0	.044
35+	0.9	0.5-1.7	.712	1.4	0.8-2.4	.284	1.7	1.0-2.8	.034
High School Education	1.3	0.8-2.1	.376	1.4	0.9-2.2	.139	1.2	0.8-1.7	.447
Injection: 4+ daily	1.2	0.7-2.1	.449	1.7	1.1-2.7	.017	1.6	1.1-2.5	.020
Years of Injection: 4+	1.1	0.6-2.1	.741	1.6	0.9-2.8	.079	1.5	0.9-2.3	.104
HIV positive	1.5	0.7-3.0	.293	0.9	0.5-1.8	.763	1.5	0.8-2.9	.219
Alcohol Intoxication	2.2	1.1-4.3	.027	2.6	1.4-4.7	.002	2.5	1.2-5.3	.017

Table 1. Sample Profile

Characteristics	n	%
<b>Gender</b>		
Male	498	89.4
Female	59	10.6
<b>Age Group</b>		
18-24 Years	195	35.0
25-34 Years	202	36.3
35-60 Years	160	28.7
<b>High School Education</b>		
No	317	56.9
Yes	240	43.1
<b>Self-Considered Homeless</b>		
No	470	84.4
Yes	87	15.6
<b>Injection Drug Combination (last 30 days)</b>		
Heroin Only	62	11.1
Cocaine Only	5	0.9
Heroin & Cocaine (separately)	12	2.2
Heroin & Cocaine (speedball)	475	85.3
<b>HIV Status</b>		
Negative	436	87.4
Positive	63	12.6

Table 1 shows demographics, drug use characteristics, and HIV status of the IDU participants. The majority of the sample (89.4%) was male; 43.1% completed high school; and 15.6% reported self-considered homelessness. A small proportion of IDUs reported injection of heroin or cocaine only (11.1% heroin only; 0.9% cocaine only). The great majority of IDUs in Puerto Rico reported injecting a combination of heroin and cocaine, or "Speedball" (85.3%). The prevalence rate for HIV seropositivity among participants was 12.6%.

Table 2 demonstrates that participants who reported alcohol intoxication were more likely to report four or more years of injection (68.3% vs. 82.8%, p = .023), four or more injections per day (40.0% vs. 54.4%, p = .026), and pooling money to buy drugs (67.5% vs. 83.8%, p = .007), than those who did not report this behavior. Also, those reporting alcohol intoxication were more likely to report sharing needles (12.3% vs. 26.1%, p = .005) and sharing cotton (18.9% vs. 39.1%, p = .000). No significant differences in sexual risk behaviors were found between the two groups. However those reporting alcohol intoxication were more likely to report sexual activity and were more likely to report a casual sex partner (18.3% vs. 42.9%, p = .001) and/or a paid sex partner (7.7% vs. 19.0%, p = .038).

Table 2. Injection and Sex Risk Behaviors by Alcohol Intoxication (last 30 days)

	No Alcohol Intoxication (N = 458)		Alcohol Intoxication (N = 99)		p
	N	%	N	%	
<b>Drug Injection Behaviors</b>					
Number of Injection Years: 4 years or more	302	68.3	48	82.8	0.023
Number of Injections per Day: 4 or more	194	40.0	37	54.4	0.026
Pooling Money To Buy Drugs	328	67.5	57	83.8	0.007
<b>Injection Risk Behaviors</b>					
Share Needles	60	12.3	18	26.1	0.005
Share Cotton	92	18.9	27	39.1	0.000
Share Water	43	8.8	8	11.6	0.501
<b>Sex Behaviors*</b>					
Sexual Activity	235	48.4	42	60.9	0.055
Casual Sex Partner	43	18.3	18	42.9	0.001
Paid Sex Partner	18	7.7	8	19.0	0.038
<b>Sex Risk Behaviors</b>					
Any Unprotected sex	195	82.3	37	88.1	0.502
Unprotected Vaginal Sex	175	73.8	33	78.6	0.570
Unprotected Oral Sex	115	48.5	25	59.5	0.241
Unprotected Anal Sex	32	13.5	9	21.4	0.234
Sex for Money/Drug	22	9.4	8	19.0	0.100

\* Among those sexually active

## Conclusions

This study demonstrates the significant impact of alcohol intoxication and drug use on HIV risk behaviors, suggesting that prevention interventions to reduce HIV risk and HIV prevalence need to assess and address the dual substance abuse problems of IDU and intoxication.

## References

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