DRUG PREPARATION RISK BEHAVIORS AMONG PUERTO RICAN IDUs IN NEW YORK CITY AND PUERTO RICO

Colón HM[1], Robles RR[1], Deren S[2], Finlinson HA[1], Andía J[2], Kang SY[2], Oliver-Vélez D[2]

1. Center for Addiction Studies, School of Medicine, Universidad Central del Caribe, Bayamón, Puerto Rico
2. National Development and Research Institutes, Inc., New York, New York

INTRODUCTION:

In the process of preparing drug solutions, injection drug users (IDUs) engage in a number of behaviors that can result in exposure to the human immunodeficiency virus (HIV) and other blood-borne pathogens. As intermediate steps in the process of drug preparation, these risk behaviors can take place even when IDUs are not injecting with the same syringe (i.e., needle sharing). These behaviors include the common use of drug preparation materials (water and drug mixing containers and cotton filters) and the use of a single syringe to mix, divide and distribute injectable drugs (also referred as "backloading" and "frontloading"). Notwithstanding the accumulated evidence about the role of drug preparation behaviors in the transmission of HIV and other blood-borne pathogens, the factors that lead IDUs to practice these behaviors and the types of preventive interventions that might be effective in modifying them have remained understudied (Koester et al., 1999; Clatts, 1999). This presentation describes the drug preparation (DP) risk behaviors practiced by Puerto Rican IDUs in East Harlem, New York City and Bayamón, Puerto Rico.

RESULTS:

Table 1 and Figures 1 and 2:

DP behaviors were twice as likely to be practiced than needle sharing in both cities, and IDUs in BAY were twice more likely to practice DP behaviors than IDUs in EH.

Among IDUs practising DP behaviors, all DP behaviors were practiced more frequently than needle sharing. IDUs in BAY reported higher summed frequencies of DP behaviors than IDUs in EH, although none of the mean frequencies of the specific behaviors were found to be significantly different. IDUs in BAY also reported significantly higher numbers of persons with which the behaviors had been practiced than IDUs in EH.

Table 1. Drug preparation and drug injection risky behaviors among Puerto Rican IDUs in East Harlem (n = 555) and Bayamón (n = 308)

	Percent Practicing			Mean Times Practiced AmongThose That Practiced It					Mean Number of Persons With Whom Practiced				
	EH	BAY		EH		BAY			EH		BAY		
	%	%	p	Mean	SE	Mean	SE	p	Mean	SE	Mean	SE	p
Drug preparation behaviors													
Any DP behavior	33.2	72.7	<0.01	52.5	8.5	83.7	10.9	0.03					
Sharing rinse water	13.0	35.7	<0.01	32.9	9.5	38.6	7.4	0.64	3.4	0.4	10.7	2.8	0.01
Drawing from common cooker	29.4	58.8	<0.01	32.7	4.2	28.6	4.2	0.49	3.2	0.3	8.6	0.8	<0.01
Transferring from one syringe to another	5.4	50.6	<0.01	24.3	10.3	31.2	5.5	0.61	3.1	0.5	8.8	1.5	<0.01
Squirting drug back into cooker	11.5	56.2	<0.01	19.4	5.4	25.8	3.6	0.34	3.8	0.7	9.4	0.8	<0.01
Drug injection behaviors													
Shared use of syringe	10.5	35.7	<0.01	29.2	9.3	10.4	2.2	0.05	11.0	2.8	7.7	1.8	0.31

Figure 1. Percent practicing DP and injection risk behaviors by study site

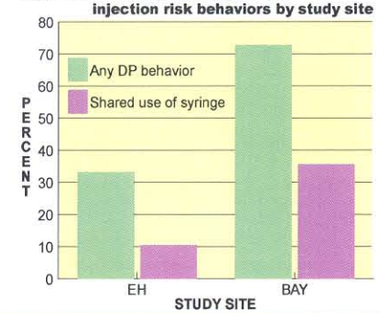
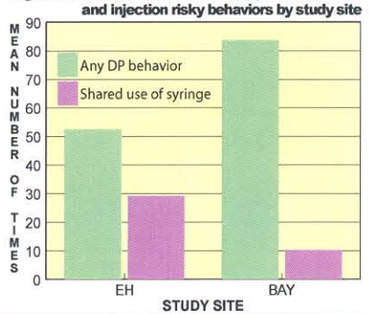


Figure 2. Mean number of times practiced DP and injection risky behaviors by study site



METHODS:

Data for this study were collected as part of the ongoing Alliance for Research in El Barrio and Bayamón (ARIBBA) project. The ARIBBA project combines qualitative and quantitative methods to elucidate the intraindividual, cultural and environmental factors that influence risk behaviors among Puerto Rican IDUs in Puerto Rico and New York City. The catchment areas of ARIBBA comprise the East Harlem area of New York City (EH), and the urban section of Bayamón in the San Juan metropolitan area of Puerto Rico (BAY). Ethnographic mapping procedures were conducted to locate the drug copping areas, and other hang out locations of drug users in both catchment areas (Oliver-Vélez, in press). Monthly plans of random visits to these sectors were developed and on the pre-determined sector and time, outreach workers approached a drug user, determined eligibility, and invited him/her to participate.

The study sample for this study comprised the 863 participants that reported drug injection in the 30 days previous to the sudy interview: 555 in EH, and 308 in BAY. Frequency information about four drug preparation risk behaviors was ascertained: 1) Rinsing syringes and preparing drug with water in a container that had been previously used by another IDU, and rinsing and preparing with water in a container that was then used by another IDU; 2) Drawing drug solution from a cooker after somebody else, and drawing before somebody else; 3) Another IDU transferring drug from their syringe into the respondent's syringe, and the respondent transferring drug from his/her syringe into the syringe of another IDU; And 4) drawing from a cooker after somebody had squirted drug solution back into the cooker, and squirting drug back into the cooker before somebody else drew from it. One injection risk behavior was measured: Injecting before or after somebody else with the same syringe.

Table 2. Results of logistic regression of any drug preparation behavior (n = 861)

Factors (last 30 days)	OR	95% CI	p
BAY study site	0.9	0.4,1.7	0.68
Female gender	0.8	0.5,1.2	0.27
25 to 34 years old[a]	1.2	0.6,2.6	0.58
35 to 44 years old[a]	0.9	0.4,2.0	0.84
45 years old or more[a]	1.0	0.5,2.4	0.93
High-school education or more	0.8	0.6,1.2	0.28
Currently in methadone maintenance	0.9	0.6,1.4	0.74
Injected cocaine	1.5	1.0,2.2	0.03
Injected heroin	1.2	0.8,1.9	0.37
Injected speedball	1.5	1.0,2.4	0.04
Times injected	1.0	0.9,1.1	0.85
Pooled money to buy drugs	6.1	4.3,8.7	<0.01
Injected in a shooting gallery	5.7	2.8,11.6	<0.01
Experienced clogging of syringes	1.5	1.1,2.1	0.04

[a] Age 18 to 24 = reference category.

Table 2

In multivariate logistic regression and after controlling for study city, age, gender and education, the practice of any DP behavior was significantly associated with cocaine and speedball injection (OR = 1.5 in both cases), pooling money to buy drugs (OR = 6.1), injecting in a shooting gallery (OR = 5.6), and the clogging of syringes (OR = 1.5).

CONCLUSIONS:

The results of this study show that during the preparation and division of injectable drugs, IDUs practice other risky behaviors more frequently than the practice of the shared use of syringes (i.e., needle sharing). The results also show that Puerto Rican IDUs in Puerto Rico are at higher risk of exposure to blood-borne pathogens through drug preparation behaviors than Puerto Rican IDUs in New York. HIV has been detected in rinse water, cookers, cottons, and syringes collected in shooting galleries (Shah et al., 1996) and the practice of back-frontloading has been found to be associated to HIV and HCV infection (Vlahov et al., 1995; Stark et al., 1996; Jose et al., 1993). However, there is a paucity of research about the determinants of drug preparation behaviors and the factors that could facilitate their change (Koester et al., 1999; Clatts, 1999).

Preventive interventions to reduce DP behaviors are urgently needed to help IDUs reduce their risks of infection with blood borne pathogens. Some researchers have suggested that the failure to observe reduced HIV and HCV seroconversion rates among participants of NEPs might be due to the continued practice of drug preparation risk behaviors (Hagan et al., 1999). Other researchers have further argued that as the practice of the shared use of syringes decreases (especially with increased access to legal sterile syringes), drug preparation risk behaviors may become a main route of transmission of blood borne pathogens among IDUs (Grund et al., 1991).

In this study, multiperson purchasing of drugs (i.e., pooling money to buy drugs) and injecting in shooting galleries were found to be strongly associated with drug preparation risk behaviors. Syringe clogging was also found to be associated with drug preparation risk behaviors. These results suggest that behavioral interventions to reduce risk of transmission of blood borne pathogens need to move beyond the psychological determinants of behavior and address the situational contexts in which IDUs inject drugs. The results also suggest that the situational factors that need to be addressed include, but should not be limited to problems of access and availability of new syringes, the target factor addressed by NEPs.

REFERENCES:

Clatts, M. (1999, April). Integrating ethnography and virology in the study of transmission of blood-borne pathogens among IDUs. Paper presented at the annual meeting of the Society for Applied Anthropology, Tucson, Arizona.

Grund, J.P., Kaplan, C.D., Adriaans, N.F., and Blanken, P. (1991). Drug sharing and HIV transmission risks: The practice of frontloading in the Dutch injecting drug user population. Journal of Psychoactive Drugs, 23(1), 1-10.

Hagan, H., McGoughm, J.P., Thiede, H., Weiss, N.S., Hopkins, S., and Alexander, E.R. (1999). Syringe exchange and risk of infection with Hepatitis B and C viruses. American Journal of Epidemiology, 149, 203-213.

Jose, B., Friedman, S.R., Neaigus, A., Curtis, R., Grund, J.P., Goldstein, M.F., Ward, T.P., and Des Jarlais, D.C. (1993). Syringe-mediated drug-sharing (backloading): A new risk factor for HIV among injecting drug users. AIDS, 7, 1653-1660.

Koester, S., Clement-Johnson, A., and Sosa, C. (1999, April). Ethnography as praxis: The evolution of a socially focused intervention model. Paper presented at the annual meeting of the Society for Applied Anthropology, Tucson, Arizona.

Shah, S.M., Shapshak, P., Rivers, J.E., Stewart, R.V., Weatherby, N.L., Xin, K.Q., Page, J.B., Chitwood, D.D., Mash, D.C., Vlahov, D., and McCoy, C.B. (1996). Detection of HIV-1 DNA in needle/syringes, paraphernalia, and washes from shooting galleries in Miami: A preliminary laboratory report. Journal of Acquired Immune Deficiency Syndromes & Human Retrovirology, 11(3), 301-6.

Stark, K., Muller, R., Bienzle, U., and Guggenmoos-Holzmann, I. (1996). Frontloading: A risk factor for HIV and hepatitis C virus infection among injecting drug users in Berlin. AIDS, 10(3), 311-7.

Vlahov, D., Khabbaz, R.F., Cohn, S., Galai, N., Taylor, E., and Kaplan, J.E. (1995). Incidence and risk factors for human T-lymphotropic virus Type II seroconversion among injecting drug users in Baltimore, Maryland, USA. Journal of Acquired Immunodeficiency Syndrome, 9, 89-96.

ACKNOWLEDGMENT:

This research was funded by the National Institute on Drug Abuse, Grant # R01 DA10425.

Center for Addiction Studies
School of Medicine
Universidad Central del Caribe
BOX 60327, Bayamón, PR 00960-6032
Tel: 787-288-0200, Fax: 787-785-5220
e-mail: hcolon@compuserve.com

American Public Health Association Annual Meeting, Boston, MA - November, 2000