HIV DRUG AND SEX RISK BEHAVIORS AMONG AMERICAN INDIAN AND ALASKA NATIVE DRUG USERS: GENDER AND SITE DIFFERENCES

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Abstract: Little research has been conducted on HIV drug and sex risk behaviors of American Indians and Alaska Natives who use illicit drugs. Data from studies conducted with other ethnic groups indicate differences in HIV drug and sex risk behaviors of men and women and between drug users from different regions, cities, communities, and intervention sites. This study examines whether these differences in HIV drug and sex risk behaviors also exist for American Indians and Alaska Natives. Results indicate that risk behaviors of American Indians and Alaska Natives do differ like that of other ethnic groups. In particular American Indian and Alaska Native women reported engaging in significantly greater levels of some drug and many sex risk behaviors than men. Significant differences between intervention sites were also found for intensity of use of various drugs and for some HIV drug risk behaviors.

Little research has been conducted on HIV drug and sex risk behaviors of American Indians and Alaska Natives (AI/ANs) who use illicit drugs. Past data indicates that when compared to other groups mortality attributable to AIDS has been relatively low for AI/ANs. However, more recent data indicates an increase in the number of new cases of HIV infection among AI/ANs (Stevens & Estrada, 2000) as well as high rates of proxy measures of HIV transmission such as alcohol use, drug use, and the occurrence of sexually transmitted diseases (STDs) (Fisher, Cagle, & Wilson, 1993). Given the potential for dramatic increases in HIV infection within this population, culturally sensitive prevention strategies that take into account mediating variables such as gender and community characteristics are urgently needed (Stevens, Estrada, & Estrada, 1998).

Gender Differences in HIV and Sex Risk Behaviors

Past research indicates differences in HIV drug and sex risk behaviors of men and women drug users. With regard to drug related risks, many studies suggest that women who inject drugs may be at higher risk than their male counterparts due to higher injection rates (Stevens & Bogart, 1999; Stevens & Murphy, 1999; Weeks, Grier, Romero-Daza, Puglisi-Vasquez, & Singer, 1998), and greater frequency of injecting drugs with the same needle after their male sex partner has injected (Freeman, Rodriguez, & French, 1994; Su et al., 1996). However, in some studies men's injection rates are higher than women for some ethnic groups (Stevens & Murphy, 1999), while other studies have shown that men more often share injection equipment such as cookers (a spoon or bottle cap to heat drugs) and cottons (to filter drugs) (Weeks et al., 1998). Studies on drug use have also identified gender differences in type of drug used. Wechsberg, Craddock, and Hubbard (1998) noted that men entering treatment reported more alcohol use while women reported more daily use of cocaine. HIV prevention studies have reported similar findings. Weeks, et al., (1998) found that men reported higher levels of alcohol use in the previous 30 days while women were significantly more likely to report having used crack cocaine.

Gender differences in HIV sex risk behaviors of drug users have also been identified in past research. Studies indicate that drug-using women are at higher risk for HIV than are men, as women reported having more sex partners (Stevens, Estrada, & Estrada, 1998; Stevens & Murphy, 1999), more sex partners who are injection drug users (Dwyer et al., 1994; Stevens & Bogart, 1999), and more frequent occurrences of trading sex for money or drugs (Stevens, Estrada, & Estrada, 1997). Sex risk behavior studies of crack cocaine using men and women show that women are at increased risk due to higher levels of many sex risk behaviors (Cohen, Navaline, & Metzger, 1994; McCoy & Inciardi, 1993; Siegal et al., 1992; Weatherby et al., 1992). Some researchers suggest that the higher levels of sexual risk reported by crack cocaine using women—as compared to men and women who use other drugs—may be due to the heightened sexuality that is associated with crack cocaine use as well as the relatively short duration of high resulting in an obsessive tendency to obtain the next dose (Semaan et al., 1998).

Site Specific Differences in HIV Drug and Sex Risk Behaviors

Past research that has examined HIV drug and sex risk differences between regions, cities, urban and rural communities, and between intervention program sites within the same geographical area have found significant differences in drug use and HIV drug and sex risk behaviors. Regional differences in risk behaviors reported by injection drug users and crack cocaine users in North Carolina compared to those in Arizona (both

with low HIV prevalence rates) showed that a higher proportion of women in North Carolina used crack cocaine than those in Arizona. While sex risk behaviors were similar for both regions, risks related to drug injection were higher for women in Arizona (Wechsberg, Dennis, & Stevens, 1996). Results of a study which compared injection drug and crack cocaine using women living in New York City and Miami, Florida (both with high HIV prevalence rates) indicated that while women from both cities reported extensive crack cocaine use, the women in New York more frequently reported injecting drugs. However, higher proportions of women in Miami reported exchanging sex for money or drugs as well as significantly higher rates of STDs (Tortu, McCoy, Beardsley, Deren, & McCoy, 1998). When comparing condom use among women who live in cities with disparate HIV prevalence rates, researchers found differences in the likelihood of using condoms with main sex partners. Wood, Tortu, Rhodes, and Deren (1998) found that injection drug and crack cocaine using women in New York City (a high prevalence city) were twice as likely to have used condoms with their main sex partner in the previous 30 days than injection drug and crack cocaine using women in Long Beach, California (a low prevalence city).

Studies that have examined differences in self-reported HIV risk behaviors of drug users in urban versus rural communities and between drug users who live in different size cities found numerous differences in alcohol use, drug use, initiation into drug use, patterns of drug use, and treatment availability, as well as differences in HIV drug and sex risk behavior (Cattarello, Leukefeld, Woolley, & Parker, 1998; Forney, Inciardi, & Lockwood, 1992; Tortu, McCoy, Beardsley, Deren, & McCoy, 1998). Furthermore, Stevens, Estrada, and Estrada (1998) found several differences in drug use and HIV drug and sex risk behaviors between participants enrolled at two research sites, located approximately 20 miles apart.

A Targeted Approach to HIV Prevention

As noted above, drug use and HIV drug and sex risk behaviors vary depending on a number of factors including the gender of the drug user and the characteristics of the community in which the drug user lives. Research on these variables as well as research that has demonstrated that culture, social norms, access to treatment, local policies, and paraphernalia laws have a significant impact on individuals' HIV risk behavior have led many investigators and service providers to argue that HIV prevention efforts need to move from a generic HIV prevention approach to one that takes into account the numerous socio-contextual factors that impact HIV risk, including gender and community specific characteristics. However, while these past research findings may have implications for AI/AN drug users (i.e., their potential risk for becoming infected with HIV; the development of prevention strategies), the vast majority of research has not examined these factors

specifically as they relate to AI/ANs. In an attempt to fill this knowledge gap, the study reported in this paper examines how HIV drug and sex risk behaviors of AI/ANs living in and near a medium sized city in the southwestern United States differ, depending on the gender of participant and the community in which the participant lives.

Method

This study was funded by the National Institute on Drug Abuse and by the Office of Research on Minority Health. The study took place in the southwestern United States between 1992 and 1997. Participants were recruited through targeted (i.e., street outreach) and snowball (word of mouth) sampling strategies. Potential participants were encouraged to enroll in an HIV research and prevention program which was located at two sites; an urban site located in a medium sized city (1992-1997) and a rural site approximately 10 miles from the outskirts of the same city (1996-1997). Once at the site, the potential participants were asked a few questions about their age, drug use, and drug treatment involvement to ensure that they met the study criteria. Entrance criteria for the study included: (a) being 18 years of age or older, (b) not enrolled in substance abuse treatment within the previous 30 days, and (c) either having injected drugs or having used crack cocaine within the previous 30 days. Those who met entrance criteria were asked to sign the subject consent form and then were given a baseline questionnaire; the Risk Behavior Assessment (RBA) which addressed both HIV drug and sex risk behavior (see Coyle, 1998 for detailed description). After the baseline assessment was administered, participants engaged in an HIV prevention education intervention which included, at minimum, HIV counseling and testing, HIV education, and referrals to social, health, and drug treatment services.

Four focus groups with AI/AN participants were held during 1996-1997. Participants in the groups were divided by gender and site (e.g., male-rural, male-urban, female-rural, female-urban). The purpose of the focus groups was to obtain: a) confirmation of the quantitative data, b) information about the effectiveness of current HIV prevention programs, and c) recommendations for developing culturally competent HIV prevention programs for AI/ANs.

Sample

The sample included AI/AN men and women who were either injection drug users and/or crack cocaine users. Recent drug use was verified by observation of recent needle track marks (for injectors) and/or positive urinalysis results for either heroin, cocaine, or methamphetamine. Of the 257 AI/ANs enrolled in the study, 207 participated at the research site located

in a central part of the city. The remaining 50 participants were enrolled at a rural location approximately 10 miles from the outskirts of the same city.

Results

The first question that this study addressed concerns the characteristics of the AI/ANs who participated in the research study. Specifically, did the AI/ANs who enrolled at the rural site differ from those who enrolled at the urban site with regard to type of drug used, age, gender, education, living arrangements, marital status, employment, criminal justice involvement, or AIDS testing? Results indicated numerous differences in participant characteristics when comparing enrollees from the two sites. Participants from the rural site were significantly more likely to have used both injection drugs *and* crack cocaine (92%) compared to those at the urban site (32.9%). Participants at the rural site were slightly older (36.6 years versus 35.1 years), more often female (30.0% versus 24.2%), significantly less likely to have a GED or further education (26.0% versus 38.4%), more likely to be married or common law married (40.0% versus 25.1%), and more likely to live in their own house or apartment (36.7% versus 33.3%). Only 6.1% of the participants from the rural sites considered themselves homeless which was significantly different from the urban site at which 29.8% considered themselves homeless.

With regard to employment only 6.0% of the participants at the rural site were employed part or fulltime compared to 16.7% at the urban site. The majority of both groups reported earning less than $500.00 per month (78.0% rural versus 79.2% urban). Data collected on criminal justice involvement indicated a significant difference for lifetime arrests with rural participants arrested less frequently (3.2 times versus 8.1 times). Participants at the rural site were also less likely to have ever been arrested (60.0% versus 85.0%), but also reported having spent more months in jail (58.2 months versus 44.2 months). The majority had been tested for AIDS (82.0% of the rural participants versus 59.4% of the urban participants). HIV prevalence was low (2.0% were HIV positive at the rural site versus 0.0% at the urban site). Forty percent of the participants at the rural site thought they had "no chance" of getting AIDS compared to 28.3% at the urban site (see Table 1).

The second question addressed in this study concerns the differences in HIV drug and sex risk behaviors of participants. In particular, differences between men and women and between rural and urban sites were examined. Statistical significance was noted if probability was less than .05. The sample size for this analysis was slightly less. It included 49 participants from the rural site and 198 participants from the urban site. Data from one participant from the rural site and nine participants from the urban site were not included due to missing data on some of the sex and drug risk behavior variables.

Table 1
Sample Characteristics (*n*=257)

Characteristic	**Rural (*n*=50)**	**Urban (*n*=207)**
Target Population*		
Crack (%)	2.0	2.4
IDU (%)	6.0	64.7
Crack and IDU (%)	92.0	32.9
Mean age (years)	36.6	35.1
Gender		
Male (%)	70.0	75.8
Female (%)	30.0	24.2
GED or further education (%)*	26.0	38.4
Married or common law married (%)*	40.0	25.1
Live in own house or apartment (%)	36.7	33.3
Consider self homeless (%)*	6.1	29.8
Employment		
Part time or full time employed (%)	6.0	16.7
Earned < 500$ per month (%)	78.0	79.2
Criminal justice		
Lifetime arrests (mean)*	3.2	8.1
Ever been arrested (%)	60.0	85.0
Months in jail (mean)	58.2	44.2
AIDS		
Previous blood test AIDS (%)	82.0	59.4
Previously told HIV infected (%)	2.0	0.0
Thought they had "no chance" of getting AIDS (%)	40.0	28.3

*Indicates significant differences (p<.05) between the Native American Supplement Study group and the Native American Cooperative Agreement group

With regard to gender differences in drug and sex risk behaviors at the rural site, women were significantly more at risk due to: (a) the number of times they used previously used supplies, (b) the number of times they traded sex for money or drugs, and (c) the number of times they used drugs with sex. Gender differences in reported risk behaviors at the urban site included women being at significantly greater risk due to: (a) the number of times they used previously used supplies, (b) the intensity of their crack cocaine use, (c) the number of times they had sex, (d) the number of sex partners, (e) the number of sex partners who injected drugs, (f) the number of times they had unprotected sex, (g) the proportion of unprotected sex, and (h) the number of times sex was traded for money or drugs (see Table 2).

A second analysis was conducted to look for differences between drug and sex risk behaviors of participants enrolled at the rural site compared to risk behaviors of those enrolled at the urban site. Several significant differences were found. Participants at the rural site were at significantly higher risk due to: (a) the proportion of times they used previously used supplies, (b) the proportion of times they used bleach, (c) intensity of their cocaine use, and (d) intensity of their heroin use. Participants at the urban site were at significantly greater risk due to the intensity of their crack use (see Table 2).

A summary of the HIV drug and sex risk behavior by gender and site is detailed in Table 3. In this table gender differences in risk behaviors were specified for rural and urban sites combined as well as separately for the two sites (i.e., rural versus urban). With the two sites combined, women were significantly more at risk compared to men for two drug related risk behaviors and seven sex related risk behaviors. When looking at only the rural sites, women were at higher risk for one drug and one sex related risk, while men were higher than woman on one sex risk behavior. Data from the urban site shows that women were higher on two drug risks and six sex related risk behaviors. HIV drug risk differences between the two sites as detailed in the summary table (Table 3), show that the participants from the rural site reported higher levels on four drug related risks while those from the urban site were higher on one drug related risk behavior.

Discussion

Several limitations of the study should be noted. First, while drug use was verified by urinalysis and by evidence of needle track marks, other drug and sex risk behaviors were obtained through self-report. Second, the sample size differed for the two sites with the sample size for the urban site almost four times as large as that of the rural site. Non-significant findings in HIV risk behaviors between males and females at the rural site compared

Table 2
HIV Drug and Sex Risk Behavior by Gender and Site

Variable (Past 30 days)	Rural (*n*=49)			Urban (*n*=198)			Site Difference (*n*=247)		
	Male	Female	Sig.	Male	Female	Sig.	Rural	Urban	Sig.
Drug Related Risks									
# of injections	130.8	118.4	ns	95.4	113.2	ns	127.3	99.7	ns
Times used used supplies	16.3	83.6	.003	25.2	42.2	.01	35.5	29.3	ns
Times used used works	9.2	14.7	ns	18.9	20.5	ns	24.0	19.3	ns
Proportion of times used used works	.22	.35	ns	.20	.19	ns	.25	.19	.018
Proportion of time used bleach	.22	.40	ns	.46	.43	ns	.27	.45	.037
Intensity of crack use	.20	.17	ns	.42	1.6	.000	.19	.70	.011
Intensity of cocaine use	4.4	2.1	ns	2.3	2.7	ns	3.6	2.4	.012
Intensity of heroin use	3.1	2.8	ns	2.6	2.4	ns	3.0	2.6	.011
Intensity of speedball use	1.3	1.5	ns	1.0	1.3	ns	1.4	1.1	ns
Sex Related Risks									
# times had sex	11.3	11.6	ns	12.8	29.1	.000	11.4	16.7	ns
# of sex partners	.89	1.1	ns	1.0	5.3	.001	.94	2.0	ns
# of IDU sex partners	.29	.71	ns	.39	2.5	.003	.42	.90	ns
# of times had un-protected sex	9.9	11.7	ns	12.1	25.5	.000	10.4	15.4	ns
Proportion of sex unprotected	.65	.64	ns	.65	.77	.000	.65	.68	ns
Traded sex for money or drugs	.02	2.4	.001	.40	11.0	.000	.71	2.9	ns
Times used drugs with sex	17.97	6.7	.006	12.3	16.6	ns	20.7	24.1	ns

ns indicates $p>.05$

Table 3
Summary of HIV Drug and Sex Risk Behaviors by Gender and Site

Variable (past 30 days)	Gender Differences			Differences
	Rural & Urban (*n*=247)	Rural (*n*=49)	Urban (*n*=198)	Rural & Urban (*n*=247)
Drug Related Risks				
# of injections				
Times used used works				
Times used used supplies	F>M	F>M	F>M	
Intensity of crack use	F>M		F>M	U>R
Intensity of cocaine use				R>U
Intensity of heroin use				R>U
Intensity of speedball use				
Proportion of time used bleach				R>U
Proportion of time using used works				R>U
Sex Related Risks				
# times had sex	F>M		F>M	
# of times had unprotected sex	F>M		F>M	
Proportion of sex unprotected	F>M		F>M	
# of sex partners	F>M		F>M	
# of IDU sex partners	F>M		F>M	
Traded sex for money or drugs	F>M	F>M	F>M	
Times used drugs with sex	F>M	M>F		

to the urban site may in part be due to the rural site's smaller sample size. Third, data collected for the urban site was collected over a five-year period while data for the rural area was collected over a one-year period. While drug use prevalence data indicates little change during these years, differences in self-reported drug use and related behaviors might, in part, be due to the year in which the data was collected. Finally, data was collected regarding the previous 30 days. While unlikely, it may be that some participants were enrolled at the urban site who had been living in the rural area within the previous 30 days (or vice versa) blurring a rigid distinction between the groups.

When looking at the characteristics of the participants who were enrolled at the rural and urban research sites several similarities and differences can be observed. Participants from both sites were relatively old with both groups being in their mid-30s. Economic stability was lacking with less than 20% reporting being employed full or part-time, less than 25% reporting monthly incomes over $500.00, the majority reporting not having an education beyond high school, and only one-third reporting living in their

own house or apartment. Almost 30% of the urban participants considered themselves homeless. It is interesting to note that while age and economic stability were similar for both communities only 6% of the rural participants considered themselves homeless. The vast majority of the rural participants lived with and depended on other people, perhaps because of more traditional values of kinship and the perceived lack of other resources on which people can depend upon in a rural community. Regardless, both groups are economically disadvantaged and would benefit from employment and education opportunities.

Reported drug use differed between rural and urban sites with rural participants more likely to have used both injection drugs and crack cocaine. Focus group data indicated that rural participants were more likely to use whatever drugs were available; noting that their drug of choice was not always available in the rural community. Urban participants reported little trouble in obtaining their drug of choice.

Criminal justice measures also varied between the rural and urban participants. Lifetime arrests and percent-ever-arrested were lower for the rural participants, but the average number of months in jail was higher. These differences could be due to differences in federal and state laws. The rural site is located on a reservation where federal laws have jurisdiction. The urban site is located in the central part of a medium sized city where state and local laws have primary jurisdiction. The differences in criminal justice measures may also be due to the higher level of police officer presence in the urban area leading to more arrests of perhaps lesser offenses. Additionally, the overcrowding of jails and prisons in the county and state system may increase the number of reduced sentences and consequently reduced length of time of incarceration.

Surprisingly, a high percentage of participants at both sites had been previously tested for the AIDS virus. Participants reported availability of testing both at the rural location and at three urban locations. In spite of risk behaviors, both groups evidenced low HIV prevalence rates; lower than other ethnic groups in the same city. Additionally, while risk behaviors were high, many participants felt they had no chance of getting AIDS. From this data, questions arise as to whether HIV testing might increase the participants' perception that they are not at risk for becoming infected with HIV. Data from a previous study (Estrada & Quintero, 1999) suggests that HIV testing may sometimes be viewed inappropriately as a "prevention strategy."

Gender differences in HIV risk behavior of the AI/ANs participating in this study replicate findings from studies on other ethnic groups. Women typically report higher levels of numerous sex-related risks as well as some drug related risks. Given the small sample size at the rural site, power to detect significant differences was small. Effect sizes indicate that given a larger sample, drug and sexual HIV risk of women from the rural community would be significantly higher than their male counterparts. Clearly, women-

centered interventions that help women reduce their risk for HIV infection are needed for women at both sites; including culturally sensitive women-centered interventions for AI/AN women.

Interestingly, differences in HIV drug- and sex-related risks between the rural and urban sites were also found. Intensity of cocaine use and intensity of heroine use were higher for the rural participants while intensity of crack use was higher for the urban participants. This finding, coupled with the focus group data, indicates that participants from the rural area were more willing to use whatever drugs were available. Their drug of choice included cocaine and heroin, but if those drugs were not available participants would use crack cocaine as a means to get high. Conversely, urban participants who reported crack use did so because it was their drug of choice and consequently reported high levels of use. Moreover, rural participants reported significantly higher levels of risk in terms of the proportion of times they used bleach to clean their needles and the proportion of times they used previously used works. This is not surprising given that bleach kits for cleaning injection equipment are available at several outreach sites within the urban community and clean needles are available at a centrally located needle exchange program. Conversely, rural participants had to travel many miles, often by foot, to obtain bleach kits. New needles were unavailable, and there was not a needle exchange program in the rural community. Prevention strategies that focus on reducing drug related HIV risks need to consider the choice and types of drugs used by drug involved members of specific communities as well as drug availability and access. Additionally, the availability of bleach kits, needles, and condoms within the community impacts the individual's level of HIV risk behavior. Knowing drug use trends and the sex and drug risk behaviors of drug involved community members as well as knowing the types of prevention services already available will help service providers develop more effective HIV prevention strategies.

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Authors' Note

This study was supported by grant # U01 DA07470 from the National Institute on Drug Abuse and by the Office of Research Minority Health.