

ALASKA NATIVE DRUG USERS AND SEXUALLY TRANSMITTED DISEASE: RESULTS OF A FIVE-YEAR STUDY

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Abstract: Although Alaska has one of the highest rates of alcohol consumption in the U.S., there are very few reports of other drug use in Alaska. This five-year NIDA-funded study sampled out-of-treatment injection drug users (IDUs) and crack cocaine smokers in Anchorage, Alaska. This paper is a summary of results comparing risk behavior for HIV and sexually transmitted disease infection among Alaska Natives (n=216) to non-Natives (primarily Blacks [n=394] and Whites [n=479]) from this study. IDUs and crack cocaine smokers were recruited using a targeted sampling plan. All subjects tested positive to cocaine metabolites, or morphine, using urinalysis, or had visible track marks. Several analyses of this database have indicated that Alaska Native women are at high risk for gonorrhea infection. They are also at risk for HIV infection due to high rates of behavior related to blood-borne disease transmission. We have also found that White men who have sex with both White and Alaska Native women are significantly less likely to use condoms with the Alaska Native women. HIV preventive education efforts aimed at Alaska Native women need to be implemented on a major scale.

There had been very little published about injection drug use (IDU), crack cocaine smoking, and risk for Human Immunodeficiency Virus (HIV) in Alaska until the first report specifically devoted to this topic in 1991 (Fisher, Wilson, & Brause, 1991). On July 1 of that same year the National Institute on Drug Abuse (NIDA) funded a grant proposal titled "IVDU's Not in Treatment in Alaska" that was written in response to the Request for Applications titled "A Cooperative Agreement for AIDS Community-Based Outreach/Intervention

Research" (CA). This was the first NIDA grant in Alaskan history. The methods and studies reported in this paper were all developed from this grant.

National Data

There are national data available from the Centers for Disease Control and Prevention (1996) that compare different ethnic groups within a category that they label as "Female Adult/Adolescent." They compare both HIV infection and AIDS cases for the risk factor reported as the percentage of sex with an IDU. The cumulative totals through 1995 show Hispanic women to be the highest percentage for AIDS cases, with American Indians and Alaska Natives (AI/ANs) being second highest. For HIV infection AI/ANs are the highest. For the most recent year available, which is calendar year 1995, the AI/AN females are the highest for both AIDS cases and HIV infection from the risk factor of sex with an IDU.

The category of cumulative AIDS cases actually represents females who were infected with HIV some time in the past who have finally reached the stage of having case definition AIDS. It is the data representing these older infections in which the Hispanic women are the highest. The HIV infection cumulative, and the current year, both HIV infection and AIDS cases, represent the newer infections. It is these newer infections in which the AI/AN females are the highest, having surpassed the Hispanic females. Because of these national HIV/AIDS findings for AI/AN women, we decided to do the analyses presented in this paper that examine both the sexual and drug use risk behaviors, and the potential vectors created by the relationships of Alaska Native women.

Method

Data collection began in November 1991 at the Drug Abuse Research Field Station (DARFS). Subjects were recruited within the Municipality of Anchorage (MOA) using a targeted sampling plan strategy (Fisher, 1991; Watters & Biernacki, 1989). In this strategy, three indicators thought to be geographically related to drug use were geocoded to census tracts within the MOA. The indicators were: (a) gonorrhea cases at the MOA Department of Health and Human Services, Sexually Transmitted Disease [STD] clinic; (b) Safer Techniques of Prevention [STOP AIDS] outreach worker contacts; and (c) Community Service Patrol pick-ups, a wagon that travels around the MOA and transports intoxicated individuals to a sleep-off center so that they do not freeze to death in the winter. As a result of this geographic analysis, six census tracts were targeted for sampling by outreach workers and other means of communications with this subculture.

In order to be eligible for the study a subject had to: (a) be eighteen years of age or older; (b) test positive for morphine or cocaine metabolites on a urine test [Roche Diagnostics ONTRAK™], or present visible signs of injection and report recent injection drug use [IDU]; and (c) not have been in treatment in the 30 days prior to intake.

The major data collection instrument was the Risk Behavior Assessment (RBA). This structured interview focuses on high-risk behavior for HIV infection. It has been demonstrated to have very good test-retest reliability (Fisher et al., 1993; Needle et al., 1995) and good concurrent validity of the drug use items (Dowling-Guyer et al., 1994; Weatherby et al., 1994). All subjects were offered confidential testing and counseling for HIV. There were also a variety of supplemental questionnaires and instruments that were used for special studies on subgroups within the main study.

There were two main purposes for the CA. The first was to discover and describe the behavior and other characteristics of drug users within the targeted sampling area. The second was to determine efficacy of either a standard or an enhanced counseling condition and subjects were randomly assigned to one of these. The purpose was to test whether the enhanced counseling was superior to the standard counseling in reducing HIV risk behavior. Subjects were followed-up six months after initial enrollment into the study. At follow-up, subjects were administered the Risk Behavior Follow-Up Assessment (RBFA), tested for presence of drugs in the urine, and offered phlebotomy and HIV testing.

Figure 1 shows the ethnic distribution of the sample compared with the ethnic distribution of the MOA. It is apparent that DARFS oversampled Blacks and Alaska Natives, and undersampled Whites. This allows us to have sufficient statistical power to be able to draw conclusions about Blacks and Alaska Natives. Figure 2 shows educational attainment of the sample compared with the educational attainment of the overall population of the MOA. The DARFS sample has a higher proportion of less than high school and high school graduates, and a lower proportion of some college or college graduates. This may reflect the socioeconomic status of residents of the targeted sampling area. These data are reported more extensively in Fisher et al. (1997).

Results

Chlamydia Study

Chlamydia trachomatis infection is the most common sexually transmitted disease in the United States. Prevention of its spread depends on identification of risk factors in high-risk groups. Orr, Fenaughty, and Fisher (1995) did an analysis in which they identified predictors of self-reported

Figure 1
Ethnic Distribution of Sample Compared with Municipality of Anchorage

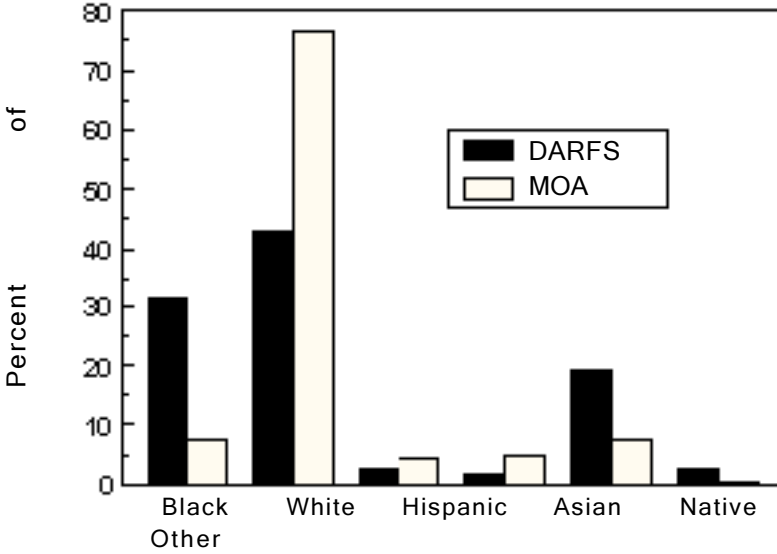
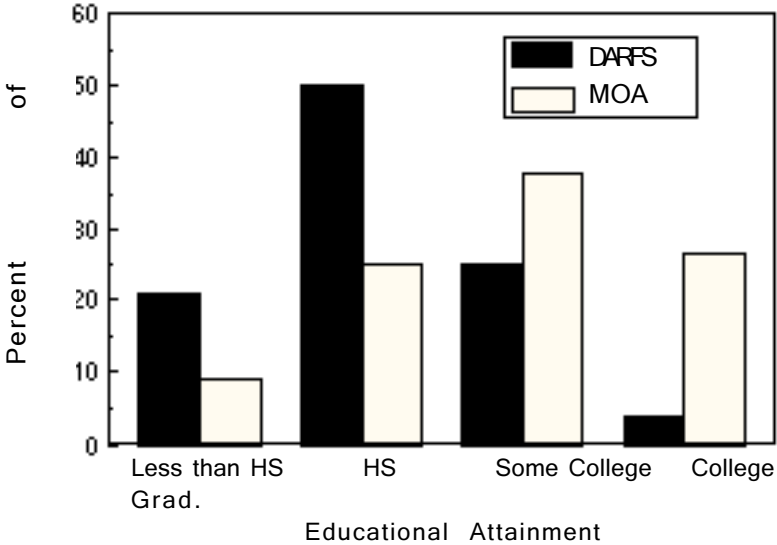


Figure 2
Educational Attainment of Sample Compared with Municipality of Anchorage



Chlamydia trachomatis infection in the Alaskan drug users. They developed separate logistic regression models for male as compared to female drug users.

The risk factors for women were: having an income over \$500 per month, bartering goods in the past month, trading sex for money in the past month, ever having been in drug treatment, and being Alaska Native. Age was a protective factor for women. What is noteworthy is that Alaska Native women were 1.78 times as likely to report ever having had *Chlamydia* as non-Native women. The risk factors for men were: cocaine use, living on the streets, and recent income from illegal activity. The male model did not include ethnicity.

Gonorrhea Studies

Gonorrhea (GC) is historically the most frequently reported communicable disease in the United States. The absence of GC treatment can lead to serious sequelae among women, including tubal infertility or ectopic pregnancy (Zenilman, 1993). The potential for reinfection makes GC fundamentally different from most reportable disease, in which reinfection is either uncommon or impossible (Beller, Middaugh, Gellin, & Ingle, 1992). Beller and colleagues found that persons who had multiple infections accounted for nearly 17% of GC infections during a five-year period. GC rates in Alaska have declined since their peak in the 1970s consistent with changes in the population.

Our group did several analyses of GC data collected with the RBA (Paschane, Cagle, Fenaughty, & Fisher, 1998; Paschane, Fenaughty, Cagle, & Fisher, 1995). GC was the most frequently reported STD than any other disease asked about in the RBA. Separate models for male and female drug users were constructed. The female model showed risk factors of trading sex for money, being Alaska Native, and reporting homelessness. Alaska Native female drug users were 2.58 times more likely to report GC infection than non-Native women in the sample. Alaska Natives were not more likely to be HIV seropositive.

Sex Partner Patterns and Preferences

Earlier work (Fisher, Cagle, & Wilson, 1993) suggested that obtaining information about the sex partners of subjects, especially from Alaska Native female drug users, might help in establishing high risk routes and networks of disease transmission. A special study was conducted in which a subgroup of drug using participants from our larger cohort were asked questions about their most recent sex partners, including their gender and ethnicity (Fisher et al., 1997). The data were analyzed using multi-dimensional unfolding analysis (Coombs, 1964). The data showed a strong preference among male White respondents for female White sex partners (as used here, the

term "preference" means self-reported experience and does not imply preference in the more general sense). Similarly, female White respondents showed a preference for White males. The data representations for male Black respondents showed a preference for female Black sex partners, but also a strong preference for female White sex partners. Similarly, female Black respondents show a preference for male Black partners. Thus, among Blacks and Whites there was a tendency toward having sex with racially similar partners.

In contrast, this pattern did not hold for the Alaska Natives. First, male Native respondents did not show a strong preference for any specific type of sex partner. This is a reflection of their generally low self-report of having sex partners at all. Second, female Native respondents show a strong preference for male White partners. Thus, they are unique in showing a preference across ethnic groups. Even though this fact, by itself, does not seem to be a problem for the Alaska Native women, in this group it may be an indicator of a vector of disease transmission as will be suggested in the remainder of this paper.

Condom Use Studies

Earlier work had shown infrequent use of condoms across ethnic groups in the Anchorage sample, with Blacks showing higher use of condoms than either Whites or Alaska Natives (Fenaughty, Fisher, MacKinnon, Wilson, & Cagle, 1994). Either of the STDs mentioned earlier (*Chlamydia* or GC), as well as HIV infection could be prevented through condom use during sexual intercourse.

Using data from a special study of sex partners among our Anchorage drug user cohort, we decided to investigate whether there was differential condom use depending upon the ethnicity of sex partner. Because we have already demonstrated that White men were especially prone to be preferred as sex partners by both White and Alaska Native women, we did an analysis to test whether White men who had sex with both White women and Alaska Native women were more likely to use condoms with one as compared to the other. Our findings indicate that White men are significantly less likely to use condoms when they have sex with Alaska Native women, than when they have sex with White women (Fenaughty, Fisher, & Cagle, 1998). Speculation for why this may occur has ranged from White men having more power and control over Alaska Native women than they do over White women, to White men believing Alaska Natives are "cleaner" or less likely to be promiscuous compared to White women. However, it is not even clear that this differential behavior should be attributed solely to the men in these pairs; Alaska Native women likely also have a role in the decision not to use condoms with their White male sex partners. Qualitative data are currently being collected to answer these questions.

Further analysis of the data from the RBA to describe the percentage of times condom use occurred when having vaginal sex during the 30 days before interview compared Alaska Native women to the other five sex-race groups. We found that Alaska Native women had a significantly lower percentage using condoms than the other five groups (see Figure 3). None of the groups had a very high percentage with Black men being the highest of approximately 30%. Alaska Native women used condoms approximately 13% of the time.

Other Factors

One of the issues that is of concern with White men being preferred as sex partners by both White and Alaska Native women, is the potential danger of White men as vectors of disease transmission from both drug and sexual risk factors. When we examine the percentage of each sex-race group in the Anchorage CA cohort who are current injectors, we find that White men are more likely to be drug injectors (as compared to cocaine smokers) than any other sex-race group (see Figure 4) followed by White women, Alaska Native women, Alaska Native men, Black men, and finally Black women.

One may argue that just because some White men inject drugs and some Alaska Native women have unprotected sex with some White men, it does not necessarily mean that the particular White men the Alaska Native women are having sex with are the same White men who inject drugs. To test the hypothesis that Alaska Native women are at risk, we collected the information about which of our respondents' sex partners were drug injectors. When the percentage of sex partners who are also drug injectors is presented for each of the six sex-race groups, Alaska Native women have the highest percentage of sex partners who are also drug injectors.

Discussion

The major conclusion to be drawn from the evidence presented is that Alaska Native women are at high risk for disease acquisition and transmission. One cause of this risk is their high percentage of injection drug using sex partners. This seems to be true not only for Alaska Native, but also, American Indian women. The second cause of the risk of disease acquisition is the low percentage of condom use.

Taken together, the findings presented here have important implications for prevention. Clearly, there is an urgent need for prevention programs to increase condom use among Alaska Native drug users, particularly among those with White male partners. Future research—in particular qualitative research—needs to be carried out to determine the reasons behind this pattern of low condom use. Such information will be

Figure 3
Condom Use During Vaginal Sex in Last 30 Days by Sex-Race Subgroups

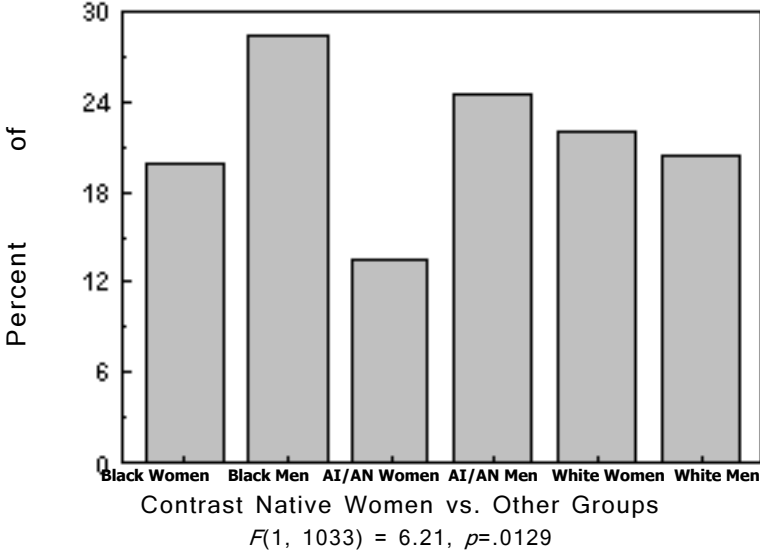
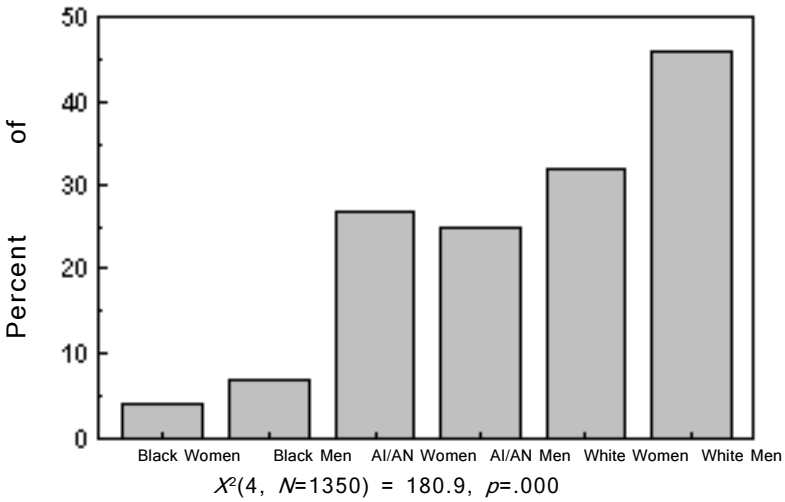


Figure 4
Percent of Sex-Race Subgroups Who Are Injectors



critical in the development of preventive interventions aimed at increasing rates of condom use among Alaska Native women in particular, and all drug users more generally.

In addition, we might consider the value of broadening our focus when trying to understand why Alaska Native women are at increased risk. As condom use requires the man's cooperation, it makes sense that we should examine White male partners' insights regarding their differential use of condoms. Such information would be useful, in combination with data obtained from Alaska Native women, in developing interventions that target high-risk *couples*, rather than a single member of the couple. Previous studies have outlined the problem of women who have gained new assertiveness skills suffering increased rates of physical and sexual abuse from their partner (El-Bassel, Gilbert, Rajah, Frye, Foleno, & Schilling, 1998). Although programs designed around couples will be challenging to develop and implement, they may be necessary to avoid such harmful and unintended repercussions, and may ultimately be more effective than individual-level interventions.

In summary, the findings reported herein suggest several implications for public health activities. First, further research is necessary to understand why condom use is lower among Alaska Native women. Second, experiences that may affect risk taking drug and sex behaviors among Alaska Native women need further investigation. Third, agencies evaluating resource allocations and intervention planning should look for possible barriers that would restrict drug using Alaska Native women from accessing services. Finally, there is an urgent need for the development of culturally appropriate prevention programs to increase condom use and awareness of personal health risk, and to reduce HIV sexual risk behavior among Alaska Native women.

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