Title: *THE EFFICACY OF NETWORK-BASED HIV/AIDS RISK REDUCTION PROGRAMS IN MIDSIZED TOWNS IN THE UNITED STATES* , By: Trotter, Robert T., Bowen, Anne M.,
Journal of Drug Issues, 00220426, Summer96, Vol. 26, Issue 3
Database: *Academic Search Premier*

THE EFFICACY OF NETWORK-BASED HIV/AIDS RISK REDUCTION PROGRAMS IN MIDSIZED TOWNS IN THE UNITED STATES

Combining current psychosocial theories with social network outreach and prevention paradigms is an effective mechanism for reducing both drug-related and sexual risks for HIV transmission in active drug users in midsized towns in the United States. Five hundred and seventy-nine individuals were recruited in two towns, one of 50,000 and one of 10,000 population. Three approaches to intervention were tested. These approaches included: (I) an intensive outreach program using indigenous outreach workers providing reinforcement of an HIV risk reduction program, and (2) a low intensity outreach program combined with a more intensive office-based HIV risk reduction program. Both conditions were compared with the National Institute on Drug Abuse (NIDA) recommended standard intervention. Each of the enhanced interventions produced a reduction in HIV-related risk taking reported by the participants. The intensive outreach combined with office intervention and the intensive office intervention without outreach reinforcement each produced significant reductions in sexual risk taking in active drug users, beyond the reductions reported for the NIDA standard program. The enhanced risk reduction programs produced differential impacts for males and females, respectively, between the two high and low intensity outreach models.

Introduction

As of December 1994, nearly 442,000 people were diagnosed with AIDS in the United States (CDC 1994). Drug users, particularly intravenous drug users (IDUs) and crack smokers represent the second highest risk level for infection of HIV (CDC 1994), as many not-in-treatment drug users continue to engage in high risk behaviors (Decker and Rosenfeld 1992). Heterosexual transmission from drug users (especially crack cocaine smokers) to non-drug users has been identified increasingly as a major area of concern for containing the HIV epidemic (Mathias 1993).

Community outreach targeting HIV prevention in active (not-in-treatment) drug users began in the early 1980s. These risk reduction efforts occurred primarily in urban areas and generally included a street outreach component to locate drug users and provide interventions either on the street or in project offices. A review of some of the earliest HIV/AIDS prevention projects directed to drug users (specifically IDUs) indicates that most projects were concerned exclusively with information dissemination (Schuster 1988). Researchers conducting such studies agree that although knowledge regarding HIV/AIDS is necessary, it is not sufficient for behavior change to occur among this population (McAuliffe 1988; Nyanjom et al. 1988; Des Jarlais et al. 1990). Observational studies are indicating that IDUs are willing to modify their HIV-risking behavior when risk reduction messages are made culturally relevant (Friedman et al. 1986, 1990), delivered and reinforced by a credible source (Stephens et al. 1993), and when demonstrations of technical and interpersonal skills are provided (Rhodes et al. 1992).

In 1987, the National AIDS Demonstration Research NADR program was initiated to target community-based HIV prevention efforts to not-in-treatment IDUs and their sexual partners (Brown and Beschner 1993; Stephens et al. 1993). After 3 years of operation (by mid-1991), 41 programs participating in the NADR project had interviewed approximately 60,000 drug users and sexual partners who were at risk of contracting HIV/AIDS (Simpson et al. 1994). NADR-sponsored projects were encouraged to develop and evaluate their own unique intervention strategies and research designs. For example, a handful of sites chose to target outreach interventions to drug injecting "networks" in designated neighborhoods, rather than assign individuals to intervention. In the majority of cases, however, projects randomly assigned clients to one of two interventions: either a "standard" or an "enhanced" intervention. The standard intervention was typically shorter and involved fewer training opportunities, whereas the enhanced version provided a number of additions to the standard services and often emphasized demonstrations or "skills training" practice in needle cleaning and condom use (Simpson et al. 1994).

Findings from the NADR studies have consistently demonstrated that major risk reductions have occurred among IDUs in drug use and related needle risk behaviors from intake to 6-month follow-up. Specifically, a recent study of 13,475 IDUs from a subset of 28 NADR sites showed a significant reduction in the self-reported frequency of injection and non-injection drug use and large decreases in the rate of sharing injection equipment during the 6-month assessment interval (Stephens et al. 1993). In contrast, NADR and other projects (e.g., Neaigus et al. 1990) met with far less success in changing sexual behaviors among IDUs. Although a few of these studies have witnessed reductions in the number of reported IDU sexual partners and increases in the use of condoms among clients in their projects, the magnitude of these changes has been considerably lower than for drug-related risks. This outcome emphasizes the need for additional strategies to impact changes in sexual behaviors.

Some NADR sites have compared the outcomes of clients assigned to standard versus enhanced interventions. For the most part, not-in-treatment IDUs in the locally entranced interventions have demonstrated more risk reduction than their counterparts in the standard intervention--although often not significantly better (Stephens et al. 1993). For example, in 11 NADR sites, IDUs assigned to an enhanced intervention were more likely than those in a standard intervention to report reduced or continued low frequency of drug injection, but the difference was statistically significant in only one case. Evaluations of other enhanced models of AIDS education for drug users reported to date have also yielded mixed results.

The present study, part of the NIDA cooperative agreement program[1] (an intellectual successor to NADR), was designed to improve on the NADR findings by more thoroughly and systematically examining the conditions that created the reduction in drug-related risks for active drug users, and to find ways to improve the record on sexually related HIV risks. The project approached this objective by evaluating the comparative efficacy of three different intervention strategies compared to a standard intervention intended to reduce sexual and drug risks for not-in-treatment drug users. The primary research questions addressed in this paper are: (1) Do not-in-treatment drug users who have participated in the outreach or office-based interventions reduce high-risk sexual and drug-using behaviors above and beyond what is expected from the standard intervention alone? and (2) Do we see differences in behavior change by gender or type of drug user (IDU versus non-IDU) for each intervention group?

Methods

Subjects

All participants in the project were 18 years of age or older, were either IDUs or crack smokers, and had not been in formal drug treatment for at least 30 days. Prior to data collection, informed consent was obtained and drug use status was established using evidence of fresh needle tracks and/or urine screens (ONTRAK Rapid Assay for Drug Use, Roche Diagnostics, Nutley, N.J.). For the present study, 141 male and 84 female (225) not-in-treatment drug users participated in the interventions and were assessed at intake and 6-month follow-up. The ethnic breakdown of this group was 42% Hispanic, 22% African American, 20% anglo, and 17% native American.

Outreach and Sampling

The interventions were directed at active drug users in midsized towns and were based on a network model for outreach recruitment. Ethnographic data collected for the project (***Trotter*** et al. 1995) determined that most of the active drug users spent a significant amount of their time in relatively well bounded social networks that provided social support, drug use peers, drug acquisition strategies, and a set of individuals where common drug use occurred. Because recruitment in small towns must take advantage of these networks for effective recruitment, the outreach process as a whole was designed to combine a targeted sampling plan (Waters and Biernacki 1989) with a locally appropriate network recruitment design (***Trotter*** et al. 1995).

The sampling and outreach began with a targeted sampling plan designed to ensure that the demographic characteristics of the individuals recruited were consistent with the demographic characteristics of drug users in the local community, based on available monitoring and treatment data (arrests, treatment, emergency room, etc.). Using this plan, two (one male and one female) indigenous outreach workers (individuals who were long time community residents who were formerly part of the drug networks) began contacting individuals who were bridges into representative drug-use networks. The outreach workers and their contacts identified all network members and attempted to recruit all members into the intervention program. Through the course of the project, 50 different networks were recruited, plus a number of isolates or members of networks where only one individual could be recruited. The total number of individuals recruited into the project (579) represents approximately 1% of the total population of the area, and an estimated 50% of the active drug users[2] interviewed at intake. This chain referral or snowball recruitment system is consistent with current social network recruitment and analytical procedures, as well.

For our project, half of the recruited networks were assigned to the NIDA standard intervention (NIDA 1992), whereas the other networks were provided with one of two enhanced interventions. Assignment was randomized by network, rather than by individuals, to eliminate problems of information sharing or contamination that could have occurred if the standard and enhanced interventions had both been applied to members of a single social network. This paper reports the impact of the intervention on individuals; however, randomization by network also has the advantage of providing better results for eventual analysis of the impact of the intervention on the network units and the community as a whole.

Interventions

The standard intervention was designated as one in which individuals received a recruitment (non-intervention oriented) outreach contact and follow-up, accompanied by the NIDA standard intervention. The other interventions included: (1) an enhanced (intervention style) outreach combined with the NIDA standard intervention, (2) an enhanced outreach combined with additional office-based intervention (network intervention and some individual intervention), and (3) a recruitment style outreach with an enhanced office intervention consisting of an individual and a network (group) intervention session.

Each of the participants in the project received the NIDA standard intervention to provide an ethical baseline risk reduction condition that could be compared with the locally developed intervention strategies. The NIDA intervention presents a standardized set of information to active drug users, based on current information about HIV transmission. Outreach-based recruitment of subjects is a consistent element in the NIDA intervention process. Once recruited, the information is presented to participants at project sites, in conjunction with voluntary HIV testing and counseling. The primary component of the intervention is information about the AIDS virus, HIV transmission dynamics, latency period information, prevention techniques, and the consequences of infection. This information is presented in the form of one-to-one counseling aided by charts and demonstrations. The standard intervention includes demonstrations of the proper use of condoms and bleaching of injection equipment (including practice holding the bleach for a minimum of 60 seconds in two draws). The participants are provided with condom and bleach kits for their personal use, and are provided motivational and supportive statements by the office intervention staff. The standard intervention is conducted in two sessions, approximately 2 weeks apart (to provide time for the return of HIV test results). The two sessions are virtually identical in content, with the exception of the HIV test results and the counseling associated with those results. This provides reinforcement of the risk reduction messages embedded in the sessions and a booster session on the basic information.

The initial enhanced intervention created for the project was designated the active outreach intervention (AOI) program. This intervention took advantage of the ability of the outreach to provide field-based intervention messages, in addition to the messages that were provided by the office-based intervention staff. This intervention was provided to the first 89 individuals recruited into the program. At the end of that phase, a revised intervention was provided to the next 379 individuals recruited into the program.[3] For the AOI, the outreach workers were trained to provide active education and intervention information in the field, in addition to the NIDA standard information and HIV testing in the program office. This phase of the project included at least one office-based network intervention in which the entire network (or as much of it as possible) was brought into the office at the same time for data collection and an intervention. We conducted a mini-focus group with these individuals and discussed HIV transmission risks that were a threat to the group as a whole. The group was asked to identify its norms and to use those norms to come up with agreed-upon group rules for protecting the group from HIV infection.

Subsequently, it was decided to modify the outreach approach from being predominantly an intervention tool to being predominantly a recruitment tool, by eliminating the active intervention activities being conducted by the outreach workers. This led to the second intervention model created by the project, our office-based intervention (OBI). This intervention used a more passive outreach recruitment model combined with the NIDA standard sessions and two additional problem identification and problem solving sessions

conducted in the project offices (Bowen et al. 1992). The first office-based session was conducted as an individual counseling session. Each individual was asked to identify at least one HIV risk in their life and conduct a problem-solving session to reduce or eliminate the risk. This approach was then coupled with motivational counseling to enhance the probability of individual behavioral change identified by the interventionist and the participant. The second office-based session was a continuation of the full network session created during the AOI intervention, where the identified network members were brought together to conduct HIV risk-related problem solving and norm identification for the group, and to provide motivation for the group to take action to protect itself, as well as individual members. Table 1 identifies the major common and unique elements of each intervention strategy.

Risk Measures

The primary measures of risk behavior for this population were collected using the instrument developed for the cooperative agreement project, the risk behavior assessment (RBA) (NIDA 1991). The RBA is a comprehensive assessment of drug use, sexual behavior, and the relationship of drug use and sexual behaviors that may place the subject at risk for contracting HIV. The questions are posed in the open-response format (Catania et al. 1990). It is administered during Session 1 and again at 6-month follow-up (risk behavior follow-up assessment; RBFA).

Dependent Measures

Because the NIDA standard intervention is an educational intervention that provides comprehensive information on both sex and drug risks, it was decided to create two composite measures to measure change in the overall set of behaviors that were targeted in the NIDA standard intervention. Reported sexual and drug-using behaviors were weighted according to a theoretical estimate of their riskiness. This approach allowed us to assume that the composite measure would reflect behavior change by a participant who reduced one risk significantly, as well as one who changed a number of risks a small amount, depending on the broad impact of the intervention. Additionally, it was assumed that the weighted risk score would reflect reduction in very risky behaviors (e.g., unprotected anal sex) more than a similar reduction in a less risky behavior (e.g., unprotected oral sex).

The sexual risk variable for the last 30 days was computed using the following formula:

Composite sex risk = (frequency unprotected oral sex) + (2*frequency unprotected vaginal sex) + (3*frequency unprotected anal sex) + (frequency gave sex for money or drugs) + (frequency gave money for drugs or sex)

Drug risk for the last 30 days was computed in the following manner:

Composite drug risk = (frequency used crack) + (frequency injected drugs) + (2*frequency unbleached used needle use) + (.5 * frequency shared cotton, cookers, and/or rinse water).

Computation of Changes in Risk

Behavior changes across sex and drug risks were calculated separately for each group of participants. All participants who were assigned to and completed only the NIDA standard intervention were considered to have received the minimum or baseline intervention. Their changes in risk behavior represented the baseline change that could be expected of all

clients. Therefore any additional change beyond this level should be due to added components of the enhanced interventions. A regression equation was developed using the NIDA standard group's pre-intervention scores to predict post-intervention scores. This equation was used to calculate predicted risk scores for the participants in the remaining intervention groups, representing their change score if they had received only the standard intervention. Differences between the participants' predicted baseline sex or drug risk and the obtained sex or drug risk were then compared using a student's ***T***-test. These differences reflected the effect of the additional intervention component.

Results

Table 2 depicts the demographic characteristics of subjects in each intervention group who completed a 6-month follow-up assessment. Subjects included in these analyses did not differ significantly from those lost to 6-month follow-up in terms of demographic characteristics or reported sexual and drug-risk behaviors. They also did not differ significantly across the four intervention groups, with two exceptions. This project recruited an overall younger group of active drug users, compared with the other NIDA cooperative agreement projects, a condition that is typical of the general demographics of the towns where recruitment occurred. As a consequence, the project was requested to recruit more individuals in the upper age categories, to provide comparative data with other sites. This resulted in a change in the age profile of the participants for those recruited after the first 100 participants. Ethnic composition was also significantly different between intervention groups. This may be attributed to the network recruitment procedure, where the sequential recruitment of ethnically homogeneous groups has the potential for changing this profile through time.

Tables 3a through 3c present a comparison of the risk profiles for each of the intervention groups. After an extensive search of the literature, we were unable to find directly comparable data on the levels of drug use in midsized towns. The profiles of drug use identified in table 3a can be taken as a base for comparison with other locations. The overall figures have remained stable throughout project data collection stages. The ratio of male to female active drug users (approximately 70% male to 30% female) has held since the beginning of the project, and does not appear to be due to recruitment bias. The general levels of injection drug use (less than 50% injecting an average of once per day), polydrug use (approximately 90% of those interviewed), and the level of use by crack smokers (non-injection drug use) have similarly remained stable across groups and through time. These levels may change by region of the country, but until there is comparable data from other sites, the stability of the data suggests that these figures are comparable to towns of similar sizes and circumstances. The data in tables 2b and 2c reflect the general conservatism of midsized towns, where anonymity is difficult to achieve. The data at intake for the entire project indicated that this group is predominantly heterosexual, rarely engages in sex for money activities, has a relatively low rate of anal intercourse, and a rate of oral intercourse that includes less than one third of the population. These data are supported by ethnographic data collected for the project (***Trotter*** et al. 1995). There were no significant differences between the intervention groups in terms of the critical variables being used to form our composite risk measures.

Table 4 depicts the obtained versus predicted follow-up sex risk scores for men and women in the three intervention groups (compared with the standard NIDA intervention). The addition of an outreach component significantly reduced the men's sex risk from the recruitment and standard intervention alone, whereas this had no additive effect for women. Specifically, for men the mean difference between the predicted and obtained scores for the outreach standard was 11.09 and the addition of two extra sessions increased the mean difference to 17.13. The outreach component did not change the women's risk scores

significantly. On the other hand, the addition of two office-based intervention sessions resulted in a significant improvement in the women's sex risks with a mean difference of 15.34, where there was no additive effect on the men's sex risk. (Note: A non-parametric test [Wilcoxin-matched pairs] confirmed these results.)

Table 5 depicts the obtained versus predicted follow-up drug risk scores for IDUs and non-IDUs in the three intervention groups (as compared to the NIDA standard). Using paired *t*-tests, no significant differences were found between the obtained versus predicted scores, suggesting that NIDA standard intervention was as effective as the three enhanced interventions in reducing drug-related HIV transmission risks. However, because standard deviations were quite large, we also employed a nonparametric test to assess the differences between the predicted and obtained risk scores. Using a Wilcoxin-matched pairs test ($p < .05$), the office enhanced intervention was found to be a significant improvement over the standard NIDA intervention for both IDUs and non IDUs.

Discussion

Despite the limitations of this study (e.g., small sample sizes), the interventions tested in this phase of the project all led to some level of reduction in risk-taking behavior among active (not-in-treatment) drug users in mid-sized towns. The composite risk measures constructed for this paper appear to be a good measure of the impact of three different types of interventions aimed at broad or multiplex types of HIV risk reductions.

The blending of psychosocial and network paradigms (in the enhanced intervention strategy) showed a significant improvement to the NIDA standard intervention, especially in the area of sexually related risk behavior. This finding contrasts with what others have reported. Specifically, a recent review of the NADR studies found that the enhanced interventions were more successful than the standard interventions in reducing drug and needle risks but not as successful in changing sexual risks among IDUs (Stephens et al. 1993). Intervention strategies that were particularly useful in reducing injection frequency included: bleach demonstrations, a practice session on bleach use, role playing on negotiation, assertiveness and interaction skills building, and various group-based sessions. Less risk reduction was reported for sexual risks, although three components had a significant impact (condom distribution, video presentations, and participation in a few of the types of group sessions).

The enhanced interventions developed as part of this project employed many of these same techniques. We believe that our network-based group interventions may have also had a significant impact. Recent studies have suggested that social norms and expectations may be important in influencing sexual risk reduction among not-in-treatment drug users (Abdul-Quader et al. 1990; Magura et al. 1990). In addition, Neaigus et al. (1990) have found that organizing drug users has been influential in reducing risk. In the Netherlands, IDUs have organized user groups that have initiated needle exchange programs, distributed information, and worked with local user groups to reduce the risk of HIV transmission.

It is both interesting and important that the interventions had a differential effect with regard to sexual behaviors for male and female drug users. It would appear that males are more strongly convinced to reduce their sexual risks when they are approached by outreach workers who can reinforce (and increase the motivation for) risk reduction within the street or drug-use environment. Although some of the intervention in the active outreach approach was conducted in the office, the outreach activities appear to have appropriately reinforced those conditions for males in very important ways. On the other hand, females did not receive an additional benefit from contextually based intervention activities. The females responded with the most significant risk reduction when the intervention was administered in the context of the office-based enhanced intervention. Anecdotal information suggests that

the office acted as a protective environment, where the women could discuss and concentrate on risk-reduction issues without pressures from both males and females in their home environment. In contrast, men did not significantly benefit from the protective conditions offered in the enhanced office environment. This suggests that a mixed strategy is necessary for HIV risk reduction for active drug users. Utilizing a single strategy is not effective for one or the other of the constituent groups.

We are currently testing specifically targeted interventions (either a drug or a sexual risk reduction intervention, but not both) with a final cohort of active drug users. This will allow us to compare a more targeted risk reduction process (using the combination of individual and network approaches) with the generic or broad-based interventions in the first cohorts, which attempted to try to reduce all of the potential risks at once. Studies are also currently being conducted to assess what factors may have contributed to clients staying in the project versus those lost to follow-up. A host of factors including: number of intervention sessions received, contact with outreach and other project staff, behavioral risk characteristics, social and environmental factors (type of network, composition of network, normative beliefs of network, etc.), and psychosocial variables (HIV/AIDS knowledge, self-efficacy to change, perceived risk, and motivation and cognitive readiness for change) will all be analyzed in relation to attrition of subjects. Many of these same measures will be used to attempt to characterize clients who reported behavioral change versus those who did not. As noted by Simpson et al. (1994), "further progress in the study of AIDS intervention efforts, is contingent on obtaining more comprehensive assessments of client functioning and cognitive attributions, the process of service delivery, pertinent environmental and social barriers to change, and the interactions among these domains" (p. 90).

Acknowledgments

This project was funded by the Flagstaff Multicultural AIDS Prevention Project, National Institute on Drug Abuse (NIDA) grant U01-DA07295. The authors would like to thank the staff of the Multicultural AIDS Prevention Project for help in collecting and entering data for this paper.

Notes

1. The HIV/AIDS intervention program described in this paper represents I of 25 independent projects that is part of a national HIV/AIDS monitoring and intervention cooperative agreement project funded by the National Institute on Drug Abuse. As with the national AIDS demonstration research (NADR) interventions described previously, NIDA-sponsored projects were free to develop their own enhanced interventions, but each was asked to follow a specific protocol for the standard NIDA intervention.

2. The estimate is based on two converging lines of evidence. First, our ethnographers and outreach workers were able to identify a number of highly closed networks that could not be recruited into the project, but were known in the community. Second, the most frequently cited estimate of active drug users in the literature is approximately 2% of the total population.

3. A third phase, which had not been completed and, therefore, cannot be reported in this article, was provided to the final xxx individuals recruited into the project. This final efficacy study will allow us to determine the relative impact of more highly targeted intervention messages, as opposed to the generic messages used in the original interventions. We are attempting to more specifically intervene with either sexual or with drug risks, depending on the greatest risk to the participant, rather than approximately equal attention to both types of

risk.

Table 1. Comparison of Activities for Each Intervention

Legend for Chart:

A - Activities
B - Active outreach intervention (AOI)
C - Office based intervention (OBI)
D - NIDA standard intervention

A	B	C	D
Network recruitment	Yes	Yes	Yes
HIV basics	Yes	Yes	Yes
Condom demo	Yes	Yes	Yes
Bleach demo	Yes	Yes	Yes
Voluntary HIV testing	Yes	Yes	Yes
Individual problem ID	No	Yes	No
Network problem ID	Yes	Yes	No
Outreach intervention	Yes	No	No
Motivational counseling	No	Yes	No

Table 2. Demographics

Legend for Chart:

A - No heading
B - Standard; NIDA (N=89) %[a]
C - Standard; Outreach (N=29) %[a]
D - Enhanced; Outreach (N=27) %[a]
E - Enhanced; Office (N=133) %[a]
F - Enhanced; x^2

A	B	C	D	E	F
Gender					
Male	64.0	65.5	59.3	66.2	.50
Female	36.0	34.5	40.7	33.8	--
Age					
18-24	37.5	48.3	11.1	30.3	25.97[a]
25-34	47.7	24.1	59.3	45.5	--
35-44	10.2	24.1	29.6	18.9	--
> 45	4.5	3.4	0	5.3	--
Ethnicity					
African-American	13.5	7.1	23.1	32.1	26.44[b]
Anglo	22.5	21.4	19.2	26.7	--
Hispanic	--	39.3	60.7	46.2	31.3
Native American	24.7	10.7	11.5	9.9	--

Note. a Column percent, 1 p < .05, 2 p< .01, and 3 p< .001

Table 3a. Drug Risk Characteristics By Intervention Type Prior to Intervention

Legend for Chart

A - Standard: NIDA, (N=43) %[a]
B - Standard: Outreach, (N=6) %[a]
C - Enhanced: Outreach, (N=12) %[a]
D - Enhanced: Office %[a]
E - (n=45) x^2

	A	B	C	D	E
Intravenous drug users					
Times used non-IV drugs in the last 30 days[b]					
No drug use	2.3	0.0	9.1	2.2	15.93
1-10 times	9.3	16.7	27.2	17.8	--
11-30 times	20.9	66.7	18.2	20.0	
31-60 times	34.9	0.0	9.1	26.6	
61-90 times	11.6	0.0	18.2	6.7	
> 90 times	20.9	16.7	18.2	26.7	
Number of injections in the last 30 days					
No injections	0.0	0.0	0.0	0.0	18.58
1-10 times	43.3	25.0	41.7	48.9	--
11-30 times	29.5	25.0	33.3	31.1	--
31-60 times	15.9	0.0	8.3	8.9	--
61-90 times	6.8	0.0	0.0	2.2	
> 90 times	4.5	50.0	16.7	8.9	
Number of dirty works in last 30 days					
None	63.3	50.0	50.0	60.5	4.98
1-10 times	30.0	25.0	50.0	26.3	--
> 10 times	6.7	25.0	0.0	13.2	--
Number of cotton, cookers, and rinse water shared in last 30 days					
None	61.4	62.5	58.3	51.1	1.58
1-10 times	25.0	25.0	33.3	31.1	--
> 10 times	13.6	12.5	8.3	17.8	
Non-intravenous drug users					
	(N=45)	(N=21)	(N=11		(N=39)

Times used non-IV drugs in last 30 days					
1-10 times	13.3	9.5	18.2	15.4	14.53
11-30 times	26.7	14.3	45.5	20.5	--
31-60 times	33.3	19.0	27.3	35.9	
61-90 times	15.6	19.0	0.0	7.7	
> 90 times	11.1	38.1	9.1	20.5	

a Column percent, 1 $p < .05$, 2 $p < .01$, and 3 $p < .001$

b Different times used alcohol, marijuana, crack, cocaine, heroin, heroin and cocaine mixed together, non-prescription methadone, other opiates, and amphetamines, without injecting in the last 30 days.

Table 3b. Sex Risk Characteristics for Males by Intervention Type Prior to Intervention

Legend for Chart

A - Standard: NIDA, (N=57) %[a]
B - Standard: Outreach %[a]
C - Enhanced: Outreach, (N=19) %[a]
D - Enhanced: Office, (n=12) %[a]
E - (N=53) x^2

	A	B	C	D	E
Unprotected oral sex					
None	63.2	52.6	83.3	64.2	4.55
1-10 times	29.8	31.6	16.7	24.5	--
11-30 times	7.0	15.8	0.0	11.3	--
Unprotected vaginal sex					
None	35.1	47.4	33.3	32.1	5.14
1-10 times	35.1	36.8	33.3	30.2	--
11-30 times	28.1	15.8	25.0	34.0	--
>/= 31 times	1.8	0.0	8.3	3.8	--
Unprotected anal sex					
None	100.0	94.7	100.0	96.2	3.09
1-10 times	0.0	5.3	0.0	3.8	--
Trading sex for money					
None	100.0	100.0	100.0	100.0	
1-10 Times	0.0	0.0	0.0	0.0	
Trading money for sex					
None	96.2	100.0	100.0	98.0	1.25
1-10 times	3.8	0.0	0.0	2.0	--

a Column percent, 1 p < .05, 2 p < .01, and 3 p < .001.

Table 3c. Sex Risk Characteristics for Females by Intervention Type Prior to Intervention

Legend for Chart:

A - Standard: NIDA, (N=32) %[a]
B - Standard: Outreach, (N=10) %[a]
C - Enhanced: Outreach, (N=11) %[a]
D - Enhanced: Office (N=31) %[a]
E - x^2

	A	B	C	D	E
Unprotected oral sex					
None	68.8	60.0	54.5	67.7	10.27
1-10 times	28.1	30.0	36.4	22.6	--
11-30 times	3.1	0.0	9.1	9.7	--
> 31 times	10.0	0.0	0.0	0.0	
Unprotected vaginal sex					
None	31.3	30.0	0.0	22.6	15.25
1-10 times	34.4	20.0	45.5	41.9	--
11-30 times	28.1	20.0	36.4	35.5	
>31 times	6.3	30.0	18.2	0.0	
Unprotected anal sex					
None	96.9	90.9	90.9	96.8	1.41
1-10 times	3.1	10.0	9.1	3.2	--
Trading sex for money					
None	100.0	90.0	100.0	100.0	7.19
1-10 times	6.3	10.0	0.0	0.0	--
Trading money for sex					
None	100.0	100.0	100.0	100.0	
1-10 times	0.0	0.0	0.0	0.0	

a Column percent, 1 p < .05, 2 p < .01, and 3 p < .001.

Table 4. Mean (SD) Sexual Risk Scores at a 6-month Follow-up Across Intervention Types and By Gender

Legend for Chart:

A - Obtained: N
B - Obtained: Risk
C - Predicted: Risk[a,b]

D - Predicted *T*-value

	A	B	C	D
Outreach standard				
Males	18	10.00(20.68)	21.09(12.02)	-2.95[1]
Females	10	31.50(29.83)	53.48(54.11)	-1.28
Outreach enhanced				
Males	12	8.33(13.90)	25.46(18.80)	-4.94[3]
Females	11	30.45(50.30)	37.63(28.25)	-.63
Office enhanced				
Males	51	26.73(39.96)	26.87(21.71)	-.03
Females	30	14.47(16.97)	29.81(16.59)	-4.00[3]

Note: 1 p< .05, 2 p< .01, and 3 p< .001

a Males: Predicted composite sex risk = 12.53 +(.56* baseline sex risk).

b Females: Predicted composite sex risk = 15.03 +(.55* baseline sex risk).

Table 5. Mean (SD) Drug Risk Scores at 6-month Follow-up Across Interventions and By Type of Drug User

Legend for Chart:

A - N
B - Obtained: risk
C - Predicted: risk[a,b]
D - *t*-value
E - z

	A	B D	C E
Outreach standard			
	6	34.33(40.74) -1.21	54.36(21.66) -.94
non-IDU	20	44.95(56.98) -1.06	59.08(23.68) -1.27
Outreach enhanced			
	11	54.73(41.24) -1.22	66.96(28.63) -1.42
non-IDU	11	38.36(54.83) -.26	42.87(23.86) -1.60

Office enhanced			
IDU	40	57.91(67.21) -1.32[c]	72.63(40.70) -1.88[1]
non-IDU	36	42.72(53.27) -.94[c]	56.97(39.52) -2.03[1]

Note. 1 p< .05, 2 p< .01, and 3 p< .001

a IDUs: Predicted composite drug risk=34.77+(.36*baseline drug risk).

b NonIDUs: Predicted composite sex risk=27.03 +(.44*baseline drug risk).

c Wilcoxin-matched pairs test found these to be significant at p < .05.

References

Abdul-Quader, A.S., S. Tross, S.R. Friedman, A.C. Konzi, and D.C. Des Jarlais

1990 Street-recruited intravenous drug users and sexual risk reduction in New York City. AIDS 4:1075-1079.

Booth, R., and W.W. Wiebel

1992 Effectiveness of reducing needle-related risks for HIV through indigenous outreach to injection drug users. American Journal on Addictions, 1(4):277-287.

Bowen, A., L.J. Price, J. Wheeler, R.T. ***Trotter***, J.M. Potter, H. Sparks, and G.S. Gotto

1992 Enhanced intervention manual. Flagstaff multicultural AIDS prevention project. Community Research Branch, National Institute on Drug Abuse.

Brown, B.S., and G.M. Beschner

1993 Handbook on risk of AIDS: Injection drug users and sexual partners. Wetport, Conn.:Greenwood Publishing.

Catania, J.A., D.R. Gibson, D.D. Chitwood, and ***T***.J. Coates

1990 Methodological problems in AIDS behavioral research: Influences on measurement error and participation bias in studies of sexual behavior. Psychological Bulletin 108:339-362.

Centers for Disease Control (CDC)

1994 HIV/AIDS surveillance report. National Center for Prevention Services, Division of HIV/AIDS prevention.

Decker, S., and R. Rosenfeld

1992 Intravenous drug use and the AIDS epidemic: Findings from a 20-city sample of arrestees. Crime and Delinquency 38:492-509.

Des Jarlais, D.C., S.R. Friedman, and C. Casriel

1990 Target groups for preventing AIDS among intravenous drug users: The "hard" data studies. Journal of Consulting and Clinical Psychology 58:5056.

Friedman, S.R., D.C. Des Jarlais, and J.L. Sotheran

1986 AIDS health education for intravenous drug users. Health Education Quarterly 13:383-393.

Friedman, S.R., D.C. Des Jarlais, and C.E. Sterk

1990 AIDS and the social relations of intravenous drug users. The Milbank Quarterly 68 (Suppl. 1):85-110.

Magura, S., J.L. Shapiro, Q. Siddiqi, and D.S. Lipton

1990 Variables influencing condom use among intravenous drug users. American Journal of Public Health 80:82-84.

Mathias, R.

1993 Sex-for-crack phenomenon poses risk for spread of AIDS in heterosexuals. NIDA Notes May/June, 8-11.

McAuliffe, W.E.

1988 An evaluation of using ex-addict outreach workers to educator intravenous drug users about AIDS. Paper presented at meeting of American Public Health Association, Boston, Mass.:November 15.

National Institute on Drug Abuse (NIDA)

1991 Risk behavior assessment questionnaire (RBA), final version. Community Research Branch, National Institute on Drug Abuse, Bethesda, Md.

National Institute on Drug Abuse (NIDA)

1992 Standardized intervention manual for injection drug users: Intervention manual. Community Research Branch, Bethesda, Md.

Neaigus, A., M. Sufian, A.R. Friedman, D.S. Goldsmith, B. Stepherson, P. Mota, J. Pascal, and D.C. Jarlais

1990 Effects of outreach intervention on risk reduction among intravenous drug users. AIDS Education and Prevention 2(4):253-271.

Nyanjom, D., W. Greaves, R. Delapenha, S. Barnes, F. Boyes, and W.R. Frederick

1988 Sexual behavior change among HIV-seropositive individuals. AIDS and Public Policy Journal 3:71-73.

Rhodes, F., G.L. Humfleet, M.M. Mowrey, and N.H. Corby

1992 AIDS intervention program for injection drug users: Intervention manual. Long Beach:AIDS Research and Education Project, Psychology Department, California Rate University.

Schuster, C.R.

1988 Intravenous drug users and AIDS prevention. Public Health Reports 103:261-266.

Simpson, D.D., L.M. Camacho, K.N. Vogtsberger, M.L. Williams, R.C. Stephens, A. Jones, and D.D. Watson

1994 Reducing AIDS risks through community outreach interventions for drug injectors. Psychology of Addictive Behavior 8(2):86- .

Stephens, R.C., D.D. Simpson, S.L. Coyle, and C.B. McCoy

1993 Comparative effectiveness of NADR interventions. In Handbook on AIDS, IV drug users and sexual behavior in the United States: Trends, issues, and intervention strategies, eds. B.S. Brown and G.M. Beschner. Westport, Conn.:Greenwood Publishing.

Trotter, R.T., II, A.M. Bowen, and J.P. Potter

1995 Network models for HIV outreach and prevention programs. In Social Networks, Drug Abuse, and HIV Transmission, eds. R.H. Needle, S.L. Coyle, S.G. Genser, and R.T. ***Trotter***, II. NIDA Research Monograph 151. Washington D.C.:National Institutes of Health.

Waters, J., and P. Biernacki

1989 Targeted sampling: Options for the study of hidden populations. Social Problems 36(4):416-430.

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Source: Journal of Drug Issues, Summer96, Vol. 26 Issue 3, p591, 15p
Item: 9611040211