
Building Skills of Recovering Women Drug Users to Reduce Heterosexual AIDS Transmission

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Synopsis

Although most women infected with HIV are intravenous drug users, some contract the virus through sexual contact with IV drug users. To

reach at-risk women, public health officials must develop a range of prevention strategies. One approach, skills training, holds promise as a means of altering risk-related sexual behavior.

In this study, 91 women methadone patients were pretested and randomly assigned to an information-only control group or a skills-building intervention group. Skills-building intervention consisted of five sessions of small groups in which participants identified their own high risk sexual behaviors, discussed their negative associations with condoms, and practiced skills which involved asking partners to use condoms.

Compared with members of the control group, respondents in the intervention group reported that they initiated discussion of sexual issues with their partners more frequently, felt more comfortable talking with them about safer sex, and reported using and carrying condoms more frequently. The high rates of attendance and program retention by skills-building participants suggest that such groups may be supportive and useful in the design of risk reduction and drug abuse treatment programs.

The modest outcomes of this study underscore the difficulty of altering risk behavior but also serve as a basis for future AIDS prevention studies.

WOMEN OF AFRICAN, Caribbean, and Latin or Hispanic descent are among the fastest growing segments of the United States population infected with the human immunodeficiency virus. Black women account for 52 percent and Hispanic women 21 percent of all women with AIDS (1). The cumulative incidence of AIDS among black women is 14 times higher and among Hispanic women 9 times higher than the rate for white women (2). Correspondingly, black or Hispanic children account for 83 percent of all children who acquired AIDS through perinatal transmission (1).

Although most women infected with HIV are intravenous drug users, some have contracted the virus through sexual contact with IV drug users. Thus, intravenous drug use directly or indirectly accounts for more than 70 percent of reported AIDS cases among women and young children (3). Unfortunately, African American and Latina

women and their children will likely constitute an increasing proportion of persons with HIV disease.

For reasons that are not fully understood, women in the United States and other western nations are far more likely to contract AIDS from men through sexual contact than they are to be the ones who transmit the virus to men (3,4). A substantial proportion of women IV drug users are engaged in prostitution. And many women crack and cocaine users, either active or recovering, are apt to have multiple encounters with high risk sexual partners. By asking a sex partner to use a condom, a woman may jeopardize her economic survival and ability to support her addiction. Condom use remains low for sexually active populations in general (5,6), but black and Hispanic women who attempt to negotiate safer sexual practices with their partners are likely to encounter male resistance anchored in class and culture (7-9).

Need for Testable Interventions

AIDS prevention specialists must develop intervention strategies that are based on relevant socio-behavioral theory and research. For example, drawing on the areas of community organization and social support, prevention activists in New York City and San Francisco have attempted to organize prostitutes and drug users around AIDS issues (10,11). Efforts to reduce risk behavior must also be attempted within conventional settings, including drug treatment facilities, health agencies, and the workplace (12, 13). Many studies indicate that drug use and related risk behavior are reduced through substance abuse treatment, but there is little evidence of change in sexual risk-taking among drug users (2,14,15).

Extant Theory and Research

The paucity of studies on the prevention of heterosexual transmission of AIDS limits understanding of how social, behavioral, and cognitive variables influence the adoption of protective practices. A number of interrelated variables associated with preventive action, however, are applicable to reducing high risk sexual behavior. Under most circumstances, acquiring accurate information about AIDS transmission and behaving accordingly are necessary steps in the chain of events leading to protective action. But information alone is insufficient to change health-related behavior (16-18). Adoption of safer sex practices requires that persons perceive themselves to be at risk for AIDS and then control their own behavior (19). Supporting this notion are studies finding a positive correlation between perceived susceptibility of contracting AIDS and reduction of high risk sexual behavior and drug use (20,21).

Other mediating variables linked to reduction of high risk behavior are people's expectations that preventive behavior will produce a positive outcome and their perception that they are capable of preventive practices (22,23). Recovering alcoholics who relapse are not likely to believe in positive outcomes associated with sobriety (24,25). Similarly, contraceptive behavior is related to beliefs about outcomes associated with unplanned pregnancy, AIDS, or other sexually transmitted diseases (26,27). Perceived self-efficacy is the belief that one will be able to cope, or act with competence, in a given circumstance (19,28,29). Thus, recovering women's protective behavior may depend in part

on their perceived ability to cope with situations that lead to relapse or unprotected intercourse. There are implications about intervention that arise from findings that IV drug users no longer sharing needles are more likely than needle sharers to believe that individuals had control over events (20,14).

Skills-building approaches include a variety of procedures and techniques designed to increase a person's skill repertoire and behavioral competence, either in cognitive or interpersonal domains. Given the promise of skills training across many problem areas and populations and the cognitive and social aspects of addiction and sexuality, skills-building methods merit attention from AIDS prevention strategists. Although researchers have described the negative affect states and social skill deficits of addicts, there are relatively few methodologically sound reports on the efficacy of skills training with recovering drug users (30,31). A skills-building group is the intervention vehicle employed in our study.

Method

Subjects and procedure. Participants were black and Hispanic women who had been enrolled in one of five clinics in a large methadone maintenance program for at least 3 months. Of 100 subjects randomly selected, 85 agreed to participate. An additional 15 subjects were randomly selected, and 91 eventually completed the pretest. Subjects were paid moderate incentives for the pretest and posttest and those attending the intervention sessions received smaller additional sums.

Participants were pretested, and then 48 were randomly assigned to a skills-building (S-B) intervention group and 43 to an information-only control group. The S-B group participated in five small sessions of AIDS education and skills-building; the control group received one session of AIDS Information (AI) routinely provided by the clinic. Posttest data were collected 2 weeks after completion of the intervention. At posttest, 96 percent (46 of 48) of the intervention group were retained, compared to 88 percent (38 of 43) of the control group. Dropouts were not statistically significant from continuing subjects on any of the major demographic or risk variables. Of the S-B participants, 88 percent attended at least four of the five sessions.

Intervention. The AIDS prevention skills intervention consisted of five 2-hour sessions led by experi-

enced women drug counselors who had received 20 hours of training. Five groups of 9-10 participants each were conducted simultaneously. The first two sessions focused on providing information on AIDS transmission and prevention techniques through video, visual presentations, and didactic group exercises designed to enable participants to identify their own high risk sexual behaviors and discuss barriers they encounter in adopting safer sex practices. During the third session, members discussed their negative associations with condoms, practiced rolling condoms onto inanimate models, and played roles in different scenarios that involved asking their partners to use condoms. During final sessions, participants were introduced to assertiveness training, problem solving, and communication skills in modeled scenarios involving safer sex. Participants then practiced these skills, first by role-playing in scripted scenarios, then continuing to build and personalize these skills by role-playing in scenarios reflecting their own life.

Measurement. Structured assessment questions were asked by trained interviewers at pretest and posttest. The questions probed sexual and drug risk behavior and attitudes towards AIDS. They included modified scales that assessed a person's AIDS knowledge and locus of control. In addition, several scenarios, administered at posttest only, were designed to measure social skills and assertiveness in implementing safe sex in different high risk situations.

Sexual behavior. On a 4-point Likert scale, the women reported their sexual behavior over the previous 2 weeks. Questions touched on such high risk behavior as frequency of condom use during sexual intercourse, frequency of carrying condoms, number of sexual partners, frequency of having sex with IV drug users or former IV drug users, attitudes towards condom use, and whether or not the women abstained from intercourse if their sexual partners refused to use condoms.

Drug use. On a 7-point Likert scale, participants reported past and present frequency of drug use, sharing and cleaning of needles, and frequency of visiting "shooting galleries."

Attitudes towards AIDS. Several questions, scored on a 4-point Likert scale, asked about perceived ability to eliminate the risk of exposure to AIDS, perceived susceptibility of contracting the AIDS virus, interest in learning about AIDS, and

beliefs as to whether or not AIDS is a result of luck and other external factors.

AIDS knowledge. A modification of an existing questionnaire (32) included 21 true-false items that assessed a woman's AIDS knowledge. A total score, ranging from 1 to 21, was determined by adding up the number of correct answers.

Assertiveness, problem-solving, social skills scenarios. Four scenarios were developed to measure social skills and assertiveness in implementing safe sex in different high risk situations. Respondents were asked to report what they would do in each situation. Two rating scales were designed to evaluate the responses based on the situations in the scenarios. Judges ranked responses on a 4-point Likert-type scale, measuring the quality of their responses according to four criteria: (a) assertiveness in demanding safer sex from partners, (b) informing partners about the need for safe sex and educating them about AIDS, (c) the ability to anticipate high risk situations by carrying condoms, and (d) applying skills in implementing safe sex. Scenarios were administered at posttest only.

Results

Descriptive. Background variables included demographics, past and current drug use, AIDS deaths, drug use in the social network, and sexual behavior.

Demographics. Of 84 respondents, 30 (35.7 percent) described themselves as black non-Hispanic, and 54 (64.3 percent) described themselves as Hispanic. Of the Hispanic-Latin respondents, 96 percent said they were Puerto Rican; one-fourth of them had been born in Puerto Rico. More than 90 percent of the women were between the ages of 21 and 42. Modal level of education was some high school, with 29 percent of the participating women having graduated. Less than 10 percent were employed full or part-time. Working patients, who tend to have higher rates of abstinence from drug use, were unable to participate in this day time study. Public assistance and food stamps were the major reported sources of income for 84 percent of the women. More than half had never been married, 14 (17 percent) were married, and 23 percent were either separated, divorced, or widowed. A quarter of the subjects reported that they were living with a significant other. Most (63 percent) had one or more children living at home. Length of

Table 1. Comparison between intervention and control groups (pretest) of methadone-maintained women in the Bronx, October 1988

Demographics and drug use	Intervention		Control	
	Number	Percent	Number	Percent
Marital status:				
Single	20	43.5	10	26.3
Married	8	17.4	6	15.8
Separated, divorced, widowed	10	21.7	9	23.7
With partners	8	17.4	13	34.2
Current job status:				
Employed	4	8.7	4	10.5
Unemployed	42	91.3	34	89.5
Heroin currently:				
No	39	84.9	32	84.2
Yes	7	15.2	6	15.8
Cocaine currently:				
No	26	56.5	22	57.9
Yes	20	43.5	16	42.1
Crack currently:				
No	35	76.1	37	97.4
Yes	11	23.9	1	2.6
Speedball currently:				
No	44	95.7	35	92.1
Yes	2	4.3	3	7.9
Shooting up currently:				
No	13	28.3	9	23.7
Yes	33	71.3	2	976.3

time in present treatment varied from 6 months to 10 or more years. None of the respondents was enrolled in any other kind of treatment or support group.

Past and current drug use. Respondents typically began using heroin before adulthood (mean age was 19.4 years), with an average lifetime use of 8.6 years. Proportions of the sample reporting past use of other drugs were as follows: 61 percent cocaine, 32.1 percent crack, 45.2 percent downers, 16.7 percent uppers, 48.8 percent speedballs (cocaine and heroin), 25 percent hallucinogens, 38.1 percent opiates, 81 percent alcohol, and 75 percent marijuana. Four-fifths of the women reported use of two or more of these substances.

More than two-thirds (69 percent) of the subjects admitted that they were using drugs other than alcohol while in treatment. A total of 13 (15.5 percent) reported using heroin recently. Of these, 46 percent used it on a daily basis during the last 3 months. Other drugs being used included cocaine, used by 36 women, of whom 22 were using it on a daily basis; crack, 12, of whom 75 percent admitted to using it on a daily basis; downers, 20, opiates, 10, marijuana, 15, and speedballs, 5.

More than half of the total sample reported current use of alcohol (54.8 percent), with 19.3 percent stating that they consumed alcohol "enough to get high" or "enough to get drunk" in the last 3 months.

Intravenous drugs were used in the past by 86 percent of women with an average duration of use of more than 9 years. Thirty percent reported use in the last 3 months, of whom 58 percent admitted daily use. Past needle sharing was acknowledged by 60 percent; recent needle sharing was admitted by 9 percent. Only two respondents admitted to visiting "shooting galleries" in recent months.

AIDS deaths and drugs in social network. Of the total sample, 59 reported that they had a friend or a family member who died from AIDS. Among this group, the mean number of such losses was five deaths. More than half of the participants indicated that members of their immediate family used drugs in the past, and 42.9 percent reported current use of drugs among their family members.

Sexual behavior. Mode and median number of sexual partners during the last 2 weeks was one. A third of the sample claimed to have had only one sexual partner in the past 9 years. Of those in long-term monogamous relationships, 17 percent believed that their partners had not had sex with others during that period, and 20 percent stated they were unsure. The bulk (83 percent) of participants reported having had sex with active IV drug users. Among those who said they had not had sex with an active IV drug user, 40 percent reported having had sexual contact with a former IV drug user.

Intervention and control groups were compared at pretest with respect to demographic, socioeconomic, and sexual characteristics, and drug use. Analyses revealed no significant difference between the groups in terms of their age, marital status, employment status, length of time in treatment, sexual behavior, or drug use. However, significantly more women in the skills-building group than in the control group reported current crack use (table 1).

Outcomes. Principal outcomes of interest included sexual behavior, drug use, attitudes toward drugs, AIDS knowledge, and interpersonal skills.

Sexual behavior. Significant differences were found between the intervention and control groups in relation to several sexual outcome measures.

Table 2. Comparisons (posttest) of sexual behavior between groups of methadone-maintained women in the Bronx, October 1988

Risk indicator	Intervention	Control	T value	DF ¹	P value
Frequency of using condoms during sexual intercourse	2.60	1.80	3.33	81	0.001
Frequency of taking condoms from the clinics	2.60	1.90	2.89	81	0.005
Frequency of carrying condoms	3.00	2.60	1.96	81	0.054
Feeling comfortable talking about sex with sexual partners	1.50	1.00	2.20	72	0.030
Number of sexual partners	0.74	0.73	0.09	81	0.950

¹ DF = degrees of freedom.

Table 3. Comparisons (posttest) of attitudes toward AIDS between groups of methadone-maintained women in the Bronx, October 1988

Attitudes	Intervention	Control	T value	DF ¹	P value
I am worried about my child getting AIDS	1.7	1.2	3.70	81	0.000
I am interested in learning about AIDS	3.3	3.1	2.31	82	0.020
AIDS can be prevented	3.1	2.7	1.76	82	0.080
Luck plays the biggest role in getting AIDS	3.0	3.7	2.32	82	0.020
I can eliminate the risk of first time or repeated exposure to the AIDS virus	2.7	2.4	1.78	82	0.070

¹ DF = degrees of freedom.

Compared with those in the control group, respondents in the intervention group reported that they initiated discussion more frequently and felt more comfortable talking about safer sex with their partners. Intervention participants also reported using condoms during sexual intercourse, carrying condoms, and taking condoms from clinics more frequently than controls. There were no significant differences between groups with respect to number of sexual partners (table 2).

The intervention group appeared to develop more favorable attitudes towards using condoms. In addition, 64 percent of the intervention group members reported that they had changed their sexual behavior at posttest, compared with 36 percent of the control group ($X^2 = 4.2$, $df = 1$, $P < .03$).

Drug use. No differences were found between intervention and control groups in relation to drug use.

Attitudes towards AIDS. Compared with control group members, S-B participants perceived themselves as more able to reduce their exposure to AIDS, were more interested in learning about AIDS prevention, and were less likely to attribute AIDS to luck or other external factors. In addition, the S-B group members perceived their children and future children as more vulnerable to contracting AIDS (table 3). Ninety percent of the interven-

tion group believed that women with AIDS should stop having children, compared with 78 percent of the control group. In addition, 90 percent of the S-B subjects stated that they would be willing to inform their sexual partners if they tested positive for AIDS, compared with 73 percent in the control group.

AIDS knowledge. Respondents in both groups demonstrated a high level of AIDS knowledge at pretest. Posttest scores of the S-B group ($\bar{X} = 17.2$) and control group ($\bar{X} = 16.7$) were comparable ($t(82) = .43$, $P < .66$). A fifth of the S-B group answered 20 out of 21 items correctly, whereas none of the control group reached this level.

Social skills. Significant differences between groups were found in none of the four scenarios in the assertiveness-problem solving-social skills battery. However, the S-B group members scored higher in their ability to implement safe sex than the control group in each scenario.

Consumer satisfaction. Eighty percent of the S-B participants reported that the group sessions helped them to learn more about safer sex techniques.

Discussion

The modest outcomes of this intervention study underscore the difficulty of altering risk behavior, the need for specific behavior-change objectives,

and the desirability of focussed measurement.

Consistent with other surveys of recovering IV drug users (15), the women in our study had relatively few sexual partners. Self-reported data indicate that recovering women can make changes in their sexual behavior, specifically condom use. Attitudinal findings suggest that targeted interventions can effectively utilize anxiety levels about susceptibility to AIDS, and at the same time, empower individuals to assume greater control in reducing their risks of AIDS. The lack of posttest differences between groups on drug use indicates that the intervention, which focused on sexual risk-taking, did not generalize to other AIDS-related practices.

Findings from the written scenarios were not encouraging, and raise questions about the extent to which reported behavior and attitudes correspond with actual skills and behavior. Still, given that all four scenarios favored the skills-building group, it is reasonable to suggest that a more sensitive measure might have captured the women's abilities to negotiate safer sex with their partners. Although potentially a better indicator of actual behavior than standard self-report items, the written scenarios demanded a degree of verbal proficiency not required of all participants in the group sessions and interpretation by coders, which added substantial uncontrolled variance to the measurement scheme.

Despite these limitations, pilot findings suggest that skills-building groups may be a useful way to facilitate changes in sexual behavior among women at multiple risks for contracting AIDS. Data from this study add to the substantial evidence indicating that drug users are well informed about AIDS transmission and imply that information-based interventions alone are of limited utility. Findings on current drug use also point to the need for additional approaches to be used in conjunction with methadone treatment. The serendipitous findings on high rates of group attendance and program retention of the skills-building participants suggest that such groups could have protective effects that could enhance the retention rates of methadone maintenance programs.

Recruitment and intervention protocols raise several questions about the validity and generalizability of the study. Incentives undoubtedly enhanced recruitment and reduced attrition. Although the total sums provided for measurement and group attendance represented less than 3 percent of the cost of 1 month of methadone maintenance, clinics are unlikely to dispense their own financial re-

sources to patients. Novelty or Hawthorne effects must also be considered as possible confounds. The use of regular counseling staff members, although not patients' assigned counselors, in carrying out skills-building sessions protected against such biases to some extent. At the same time, there is reason to believe that the intervention could be made more efficacious in the future. Subsequent studies will employ more extensive and uniform counselor preparation and will provide more opportunities for patients to practice cognitive and interpersonal skills.

The measurement scheme is the most serious weakness of this study. Sexual behavior and drug use are private behaviors, and subject to the vagaries of self-report. Consensus suggests that drug users are generally truthful about their use patterns (35, 36), but the accuracy of accounts of their sexual behavior, particularly in the AIDS crisis, is open to speculation. The skills-building intervention itself likely introduces some social desirability response bias. Future AIDS prevention studies should rely less on self-reported outcomes and include performance batteries that approximate in vivo conditions. Field studies should include followup measurement for at least 1 year after intervention.

Findings also give credence to the call of Kazdin and Bass for more attention to issues of statistical power in designing outcome studies (33). By one standard (34), studies should be able to detect effects with a probability of .80. Given the difficulties of altering and measuring human behavior, it is reasonable to anticipate effect sizes no larger than .30, defined here as a hypothesized difference between conditions expressed in terms of standard deviation units. Under these assumptions, and a one-tailed alpha of $P = < .05$, a study would require 138 subjects per group, or three times the size of the present pilot sample. It is reasonable to conduct smaller studies, however, before launching large field experiments, given the limitations of present understanding of how to effect behavior change among intravenous drug users and their sexual partners. Perhaps one way of bridging the gap between uncontrolled pilot work and large scale trials would be to relax the conventional alpha level of $< .05$, substituting a standard of $< .10$ for early studies with limited sample sizes.

The modest outcomes and methodological flaws in this study underscore the difficulty of altering risk behavior of IV drug users and the challenge of conducting intervention research in community settings. For certain, a range of interventions are

needed to reduce HIV transmission among drug-using women and other high-risk populations. It seems likely that subsequent intervention trials can boost the potential effectiveness of skills-building approaches to AIDS prevention, as prevention specialists develop and test more powerful group interventions. Perhaps this early effort will provide a useful reference point for more refined studies of approaches to reducing AIDS risks among high risk populations.

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Promoting Heart Health for Southeast Asians: a Database for Planning Interventions

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Synopsis

This paper is a report of baseline data that the authors collected on the prevalence of hypertension

in a sample of 397 Southeast Asian immigrants residing in central Ohio and the implications of those data for the design of ethnically approved and scientifically valid interventions. The context for the collection of these data over a 9-month period in 1989 is described. Baseline demographic characteristics including distributions by ethnicity, sex, age, and length of stay in the United States, as well as family heart health history, hypertension level, and heart health awareness of these subjects are presented. For example, 85 percent of the immigrants did not know what could be done to prevent heart disease. Implications for the design of ethnically approved and scientifically valid prevention strategies are discussed.

Based on these data, the authors realized that multiple health education strategies tailored to what they were learning about Southeast Asians would be needed. Through Southeast Asian leaders, they were led to using wall calendars, with words specific to each Southeast Asian language, that had a monthly heart health slogan as one avenue to reach Southeast Asians.

Another strategy was to develop videotapes featuring cultural content but including heart health "commercials." The authors concluded that, although scientific validity of risk reduction interventions are important, customizing these strategies to ethnically specific modes of interaction are equally important.

IN THE DECADE ending in 1980, Asian Americans and Pacific Islanders, defined by the U.S. Census as a set of U.S. population subgroups whose origins were in "the Far East, Southeast Asia or the Pacific Islands," increased from 1,500,000 to 3,700,000 or an increase of 142 percent (1). This percentage increase far exceeds the increases seen in other ethnic groups; for example, for whites the increase was 6.4 percent; for blacks, 17.8 percent; and for Hispanics, 60.8 percent (2). Furthermore, from 1980 to 1985, Asian Americans and Pacific Islanders grew to an estimated 5,100,000 (3), and

by 1990, these numbers will probably exceed 6,500,000 (4).

Among the diverse ethnic groups included in the Asian American and Pacific Islander category, the Chinese remain the most numerous; however, the Southeast Asians, also known as Indochinese (that is, Cambodians, Laotians, and Vietnamese), now number more than 1 million and are currently the third largest Asian-origin population in this country, surpassing Cuban Americans as the largest refugee group in the United States (5). The most prominent reason for the extraordinary increase of