Characteristics of Drug Abusers that Discriminate Needle-Sharers

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Tearsheet requests to Dr. Dolan.

Synopsis

To identify variables that discriminate needle-sharing among drug abusers, 224 male drug abusers were studied. They had been admitted to a 30-day inpatient drug treatment program over a 19-month period (September 1983 through March 1985). The variables examined were divided into three categories: demographic (age, race, education), personality (Minnesota Multiphasic Personality Inventory [MMPI] scores and MMPI deviant scores), and drug use patterns (drug of choice, use of single or multiple [mixed] drugs, severity of drug use, and place of use).

Three variables were identified that discriminated needle-sharers from other drug abusers. Compared with other drug abusers, needle-sharers used more multiple drugs, were more likely to use a "shooting gallery," and had more problems related to drug use. No demographic or personality variables discriminated needle-sharers from nonsharers.

The data suggested that needle-sharing is widespread in the drug culture. Needle-sharing was not confined to a particular racial group, educational level, or personality type. These findings can be used to structure education programs about acquired immunodeficiency syndrome (AIDS) for drug abusers. Drug treatment programs appear to provide an important opportunity to educate drug abusers about AIDS and related health issues associated with needle-sharing.

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) is spreading rapidly among intravenous (IV) drug abusers and is being transmitted by the sharing of needles contaminated with blood containing the AIDS virus. Given the lack of a vaccine for AIDS, preventing the spread of the disease must focus on modifying transmitting behaviors through education. The responsiveness of IV drug abusers to education intervention is, however, a controversial issue. A recent discussion of the AIDS epidemic suggested that drug abusers are resistant to educational intervention (*1*). In contrast, a recent investigation (*2*) found an increased demand for new needles among IV drug abusers, suggesting responsiveness to information and a reduction in transmitting behaviors.

Although needle-sharing has been quite common (*3*), it is by no means a universal practice of IV drug abusers. Recent studies found needle-sharing by 66 percent (*4*) and 68 percent (*5*) of IV users in drug treatment programs. Because not all IV drug abusers share needles and there is evidence that IV drug abusers have begun to take the precaution of seeking new needles, it may be possible to identify those persons most at risk for transmitting AIDS among IV drug abusers. Once identified, they could be targeted for intensive educational intervention.

The purpose of our study was to identify variables discriminating drug abusers who share needles. The variables examined were divided into three categories: demographic (age, race, education), personality (Minnesota Multiphasic Personality Inventory [MMPI] scale scores and MMPI deviant scores), and drug use patterns (drug of choice, use of single or multiple [mixed] drugs, severity of drug use, and place of use). Personality data were obtained by use of the MMPI (*6*). MMPI is probably the most commonly used psychological instrument to measure personality.

Table 1. Distribution of 224 males in a drug abuse treatment program, by abuse group, Minneapolis, MN

Group	Number of subjects	Percentage of subjects
Group 1—non-IV drug abusers	31	14
Group 2—IV abusers who did not share needles	62	28
Group 3—selective needle-sharers	101	45
Group 4—nonselective needle-sharers	30	13

Table 2. Variables that discriminate needle-sharing among drug abuse groups, Minneapolis, MN

Group	Mean DAST score [1]	Percentage who use multiple drugs	Percentage who use shooting galleries
Group 1—non-IV drug abusers	9.7	57	10
Group 2—IV abusers who did not share needles	11.1	71	14
Group 3—needle-sharers	14.6	93	28

[1] Drug Abuse Screening Test, a measure of severity of drug use.

MMPI deviant scores are obtained from the MMPI, and they measure abnormal or deviant scores on the test. The Drug Abuse Screening Test (DAST) was used to measure the severity of drug use (*7*).

Methods

Subjects. The subjects were 224 male drug abusers admitted to a 30-day inpatient drug treatment program of the Dallas Veterans Administration Medical Center during a 19-month period (September 1983 through March 1985). They had an average age of 32.2 years (range, 20–40 years; SD, 6.2) and had completed an average 12.2 years of education (range, 4–20 years; SD, 2.2). Forty-seven percent were white, 45 percent were black, and 8 percent were Hispanic. The drugs primarily used by the subjects were heroin (24 percent), amphetamines (23 percent), cocaine (22 percent), heroin and cocaine in combination (11 percent), and pentazocine (8 percent). Their average frequency of drug use was once daily, and drugs were taken intravenously more than 75 percent of the time.

Procedure. All data were obtained during the subjects' first 2 weeks of treatment. Demographic information was collected during the admission-intake procedure. The MMPI and the DAST were included in a standard psychological battery routinely given to all new patients entering the treatment program. Needle-sharing information was obtained from a chemical use questionnaire also in the psychological battery.

After all data were collected, subjects were categorized into four groups. Group 1 consisted of patients who abused drugs, but had never used a needle to inject drugs. This group was included to examine potential differences between non-IV users and IV users. Patients in group 2 were IV users who did not share needles. Group 3 consisted of selective needle-sharers—persons who only shared needles with relatives and close friends. Nonselective sharers—patients who reported sharing needles with casual acquaintances or strangers or both—made up group 4. Distribution of subjects in these groups is shown in table 1. Of the 193 IV drug users, 68 percent (131) shared needles. Among the needle-sharers, 77 percent (101 IV drug users) reported selective sharing and 23 percent (30 users) reported nonselective sharing.

Results

Analysis of the variance was used to determine differences between each group for all the independent variables. This analysis indicated that there were no differences between needle-sharers (groups 3 and 4) on any variable. The two groups were combined into group 3 to represent all needle-sharers.

A step-wise multiple regression analysis was then used to evaluate the discriminative value of the independent variables. Three variables accounted for 26 percent of the variance ($r = .51$). These three variables were severity of drug-related problems, use of "shooting galleries," and use of single or multiple drugs.

Differences between groups for the three discriminative variables (table 2) were examined using analysis of variance. This analysis indicated no significant differences between non-IV users and nonsharers (groups 1 and 2). However, for each of the discriminative variables, group 3 (needle-sharers) was significantly different from both group 1 and group 2. Thus, the three discriminative variables differentiated needle-sharers from IV users who did not share needles and non-IV users.

Differences between not sharing and sharing were examined by combining group 1 and group 2 and comparing the combined groups with group 3

(all sharers). Using a step-wise multiple regression analysis, four variables differentiated sharers from nonsharers. They were (*a*) severity of drug use, (*b*) percentage who used multiple drugs, (*c*) percentage of "shooting gallery" use, and (*d*) drug of choice. These four variables accounted for 28 percent of the variance (r = .53).

The drug of choice variable was examined to determine drug use differences between sharers and nonsharers of needles. There were no significant differences between sharers and nonsharers, although there were some trends (table 3). Needle-sharers were more likely to use heroin or a combination of heroin and cocaine, and nonsharers were more likely to smoke marijuana.

Table 3. Drug of choice and percentage of drug of choice for drug abusers who share needles (group 3) and those who do not (groups 1 and 2)

Drugs	Needle-sharers		Nonsharers	
	Number who use drug	Percentage who use drug	Number who use drug	Percentage who use drug
Speedball (heroin and cocaine)	20	75	5	25
Heroin	40	73	15	27
T's and blues (Talwin and pentazocine)	11	61	7	39
Speed (amphetamine and methamphetamine)	30	58	22	42
Cocaine	26	52	24	48
Opiates (nonheroin)	2	50	2	50
Marijuana	1	10	9	90
Other (LSD, PCP, barbiturates, benzodiazepine, inhalants)	1	10	9	90

Discussion

The study identified three variables that can distinguish drug abusers who share needles from those who do not. Compared with drug abusers who did not share needles and non-IV users, needle-sharers had used more multiple drugs, were more likely to have used a "shooting gallery," and had more problems related to drug misuse (higher DAST scores). No personality or demographic variables were found to discriminate groups. Sharers, nonsharers, and non-IV users did not differ in age, race, education, drug of choice, or any the 24 MMPI scores.

These data suggest that there is a definable subpopulation of drug abusers who share needles. This subpopulation appears to comprise addicts who have relatively severe drug problems. This finding is confirmed by not only their higher scores on the DAST, but also by their preference for using multiple drugs such as a combination of opiates and cocaine. Recent research (*8*) has shown that the use of this combination is related to treatment failure.

Furthermore, these data indicate that needle-sharing is widespread in the drug culture. For example, needle-sharing is not confined to addicts of a particular racial group or educational level. Although there were trends suggesting sharers preferred certain drugs, needle-sharing was reported by more than 50 percent of the subjects in each primary drug group. Also, sharing does not appear to be related to a particular personality profile. Thus, theorizing that all needle-sharers have character disorders and are unresponsive to educational interventions appears to be an invalid assumption. In fact, there were no differences between needle-sharers and nonsharers and between needle-sharers and non-IV users on any of the MMPI deviant scores, indicating no significant differences in psychopathology between these groups.

There were no differences between selective and nonselective needle-sharers on any of the independent variables. The inability to detect differences between these groups may have been the result of the insensitivity of the assessment procedure. The majority of sharers claimed they only shared with relatives or close friends or both, while nonselective sharers claimed they shared with acquaintances, strangers, or both. The definition of "close friend" compared with "acquaintance" seems to vary extensively among patients, confounding the attempt to distinguish types of sharers. Perhaps further refinement of the techniques assessing needle-sharing behavior could reveal some differences in this group. A larger sample of needle-sharers might also reveal differences. Further research is needed to identify differences among needle-sharers.

Importantly, these findings can be used to structure educational interventions for drug abusers. Drug abuse treatment programs are in a unique position to disseminate health risk information, as they are the only approximation to a support system for drug abusers (*9*). Because our data indicate that needle-sharers are drug abusers with severe drug problems, it is likely that many of them will have at least some contact with a drug abuse treatment program. In methadone mainte-

nance programs, patients have been treated several times per week for several years. Educating drug abusers in treatment programs may result in dissemination of this critical information to drug abusers who are not enrolled in treatment programs. These facilities may provide an important opportunity to provide these individuals with a formal educational program concerning AIDS and other related health issues associated with needle-sharing.

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Effects of a Health Promotion Advertising Campaign on Sales of Ready-to-Eat Cereals

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Consumer purchase data used in this study were obtained by FDA from Giant Food, Inc., as part of the evaluation of the Special Diet Alert experimental nutrition labeling program.

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Synopsis

The objective of this study was to determine how the sales of various segments of the high fiber and nonhigh fiber, ready-to-eat (RTE) cereal market were influenced by a health message advertising campaign about the possible benefits of a high fiber, low fat diet for preventing some types of cancer.

The fiber statements in the media campaign were endorsed by the National Cancer Institute (NCI). The campaign was undertaken by the Kellogg Company to promote its line of high fiber cereal products, including Kellogg's All-Bran®. The data base consisted of computerized purchase data from 209 Giant Food, Inc., supermarkets in the Baltimore, MD, and Washington, DC, metropolitan areas. All the RTE cereal products in the stores were classified according to their fiber content and competitive market positions compared with Kellogg high fiber cereals. Estimates of market share for the various classes of RTE cereal products were obtained weekly for each store during a period of 64 weeks, beginning 16 weeks before the start of the campaign.

Shifts in market share between high fiber and nonhigh fiber cereal classifications indicate substantial increases in consumer purchases of Kellogg high fiber cereals, particularly All-Bran, beginning with the start of the Kellogg advertising campaign. Growth in market share of high fiber cereals continued during the entire 48-week evaluation period, with much of the later growth in non-Kellogg high fiber cereals. Growth in sales of high fiber cereals was mainly at the expense of low fiber cereals such as granola-type products. The implications of these results for the competitive and educational effectiveness of commercially sponsored health and diet messages are discussed.