

subjects showed superior knowledge about AIDS in the posttest ($p < 0.003$); however, both experimental and comparison subjects showed very low posttest levels of drug use, and condom use did not differ between groups. The small-group education approach has promise as one of several techniques that drug treatment programs can use in AIDS prevention.

BEHAVIORAL RESPONSES TO AIDS EDUCATION EFFORTS AMONG INTRAVENOUS DRUG USERS.

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Study was made of intravenous drug users (IVDUs) in San Francisco regarding their risk for contracting human immunodeficiency virus (HIV). Three cross-sections of subjects were recruited (N=438, N=623, N=568). Both drug treatment program clients and IVDUs not enrolled in treatment programs were sampled. A modified chain referral method was used to recruit IVDUs not enrolled in treatment programs, and volunteers were recruited in two drug detoxification clinics. Cross-sections were compared, and participation in risk behavior is examined over time. Results suggested that community health outreach workers (CHOWs), drug treatment clinics, and close associates were the primary means by which IVDUs gain knowledge about AIDS risk. A positive association between perception of CHOWs as important sources of AIDS information and adherence to safer needle hygiene was found. Significant change in IVDU risk behavior was found, coinciding with the broad dissemination of AIDS risk reduction messages to IVDUs through CHOWs and treatment programs. The study concluded that ongoing, one-to-one contact with IVDUs is instrumental in affecting behavior change, and that IVDUs can and do alter important areas of risk behavior when acceptable means of protection are readily available.

METHADONE TREATMENT AND AIDS RISK REDUCTION AMONG INTRAVENOUS HEROIN USERS.

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Heroin addiction renders individual or collective risk-reduction extremely difficult. A phased pattern of effects occurs, with successive 2-hour periods of euphoria, relative normalcy and approaching withdrawal. Agonizing withdrawal follows unless more heroin is taken. This cycle directly limits the time available to plan risk reduction, creates a need to use available time to plan and implement strategies to obtain drugs, and creates periods of intense need for heroin during which intentions not to share drug injection paraphernalia are often abandoned. Methadone, by contrast, has a much longer half-life of 24 hours. During this time, it blocks the craving for and euphoric effects of heroin. Furthermore, methadone clients are not subject to the physical and emotional disruption that heroin causes, since the usual methadone effects are stable rather than consisting of phases of euphoria and withdrawal. Consequently, methadone clients are able to stabilize their social and economic relationships. Methadone clients typically reduce injection at program admission and gradually thereafter. Most of what they continue to inject is cocaine or other nonopioids. Con-

siderable variation in the decrease in mean drug injection among programs indicates that some reduction in injections is due to psychosocial aspects of treatment. Because of behavior changes, methadone patients are less likely to be infected with HIV than detoxification patients or street users out of treatment. The experiences of the drug users union (Junkiebonden, or JB) in Western Europe show that methadone makes collective organization by intravenous drug users easier. JB has primarily been formed by Dutch methadone clients. Where street users have organized, core leaders have used methadone to reduce the degree to which they are personally dominated by the heroin cycle. Attempts to organize in the Federal Republic of Germany foundered due to the absence of methadone treatment. JB in the Netherlands have become active in innovative efforts to encourage AIDS risk reduction among intravenous drug users (IVDUs). Their efforts have been important, in part, precisely because they come from inside the IVDU culture and, thus, are less likely to be seen as intrusive outsiders. In conclusion, methadone facilitates individual and group risk reduction among IVDUs. This does *not*, however, mean that heroin users outside of methadone treatment are totally incapable of risk reduction. Partial risk reduction has been reported by street heroin users, and we have observed a local JB meeting at which some participants functioned effectively in spite of sustained heroin use before and during the meeting.

YOUNG PSYCHOPHARMACOLOGIST AWARD AND ADDRESS

Drug Effects on the Acquisition and Performance of Response Chains

Warren K. Bickel, University of Vermont College of Medicine, Burlington, VT

Chair: Larry D. Byrd, Yerkes Regional Primate Research Center, Emory University, Atlanta, GA

NEW FELLOW ADDRESS

Physiological and Biochemical Reactivity to Stress and Smoking

Ovide F. Pomerleau, University of Michigan, Ann Arbor, MI

Chair: James E. Smith, Louisiana State University Medical Center, Shreveport, LA

INVITED ADDRESS

Computer Models Instead of Animal Experiments?—The Computer Simulator's View

Earl B. Hunt, University of Washington, Seattle, WA

Chair: Cynthia H. Null, College of William and Mary, Williamsburg, VA

SYMPOSIUM

Marijuana: Recent Research on Smoking Topography and Behavioral Effects

Chair and Discussant: Maxine L. Stitzer, The Johns Hopkins University School of Medicine, Baltimore, MD

MARIJUANA DOSING: EFFECTS OF CIGARETTE POTENCY AND SUBJECT HISTORY. Ronald I. Herning. National Institute on Drug Abuse Addiction Research Cen-