

assessed at baseline and after 4 weeks of drug treatment. Calorie and carbohydrate intakes differed significantly between drug- and placebo-treated subjects during the smoking withdrawal period ( $p < 0.001$ ). By 48 hours after discontinuing smoking, placebo-treated subjects consumed approximately 300 calories more per day than during the baseline measurement period. This increase, largely from increased consumption of carbohydrate-rich meals and snack foods, was sustained throughout the 4-week follow-up period. d-Fenfluramine-treated subjects also significantly increased consumption of carbohydrate-rich snack foods 48 hours after smoking withdrawal. However, their calorie and nutrient intakes returned to baseline levels after 4 weeks of treatment. The weight of the subjects at 4 weeks reflected their differences in caloric intake: the placebo group *gained*, on average, 3.5 lb (s.d. = 3.2); the d-fenfluramine group *lost*, on average 1.8 lb (s.d. = 5.0) ( $p < 0.001$ ). Findings suggest that 1) increased calorie and carbohydrate intakes after discontinuing smoking contribute meaningfully to weight gain, and 2) drugs that enhance serotonin-mediated neurotransmission may help to prevent overeating and weight gain usually associated with smoking withdrawal.

**WEIGHT CONTROL AND MAINTAINING NONSMOKING: TWO INCOMPATIBLE HEALTH GOALS.** Joanne Duffy, Chrystal Tunstall, Kathy Vila, Carol Duncan and Sharon Hall. San Francisco Veterans Administration Medical Center, San Francisco, CA.

Weight gain after smoking cessation is common. Fear of gaining weight may be a barrier to quitting smoking. We hypothesized that incorporating weight gain prevention strategies into smoking cessation treatment would both prevent weight gain and promote abstinence. To test this hypothesis we developed an innovative intervention based on weight monitoring, individualized diet and exercise plans and behavioral skills and tested it in a controlled trial. We randomized 158 smokers into three treatment groups: innovative intervention, a nonspecific control similar in contact and credibility, and a standard control. All subjects participated in a smoking cessation treatment using aversive smoking techniques and relapse prevention skills in seven sessions over two weeks. The innovative and nonspecific control groups met for five additional sessions over four weeks to receive the weight gain prevention intervention. Smoking status and body weight were recorded before treatment and at weeks 2, 6, 12, 26, and 52 after treatment. A subsample of subjects completed diet and activity records. Abstinence was determined by breath carbon monoxide levels and by urinary and blood cotinine levels. Preliminary analysis indicated that weight changes varied as expected by condition. At the end of the weight gain prevention intervention (week 6), covariate-corrected mean weight changes were: innovative condition,  $-0.05$  lb; nonspecific treatment,  $+1.23$  lb; and standard treatment,  $+1.50$  lb. Preliminary results indicated surprising abstinence rate differences. The weight gain intervention conditions did not differ and showed poorer abstinence rates overall than the standard treatment condition. At week 52, abstinence rates were: active conditions 21%, and standard treatment conditions 35% (LR  $\chi^2$  ( $N = 158$ ) = 7.29,  $p < 0.006$ ). These results suggest that incorporating weight gain prevention strategies into smoking cessation programs may be counter-productive to the desired outcome of maintaining nonsmoking. Analyses of changes in nutrition and activity levels are being completed. Data from these analyses will be presented. We will discuss the implications for smoking cessation treatment and for understanding cessation-induced weight gain.

## SYMPOSIUM

*Substance Abuse and the Media: Individual and Community Perspectives*

Chair: James L. Sorensen, University of California, San Francisco, CA

Discussant: Susan Lachter David, National Institute on Drug Abuse, Baltimore, MD

**THE PRESENTATION OF AIDS AND INTRAVENOUS DRUG USE IN THE MEDIA.** Don C. Des Jarlais. Beth Israel Medical Center, New York, NY.

The AIDS epidemic has been one of the most covered health/science stories in the last decade. Intravenous (IV) drug users are the second largest group of persons to have developed AIDS in the United States and are the predominant source of both heterosexual and perinatal transmission of AIDS in the United States. Because IV drug users have a relatively low level of group organization, reducing the spread of HIV among drug injectors will require prevention programming funded by outside sources, with public funding providing the greatest share. Because relatively few persons in the country personally know someone who injects illicit drugs, support for publicly funded AIDS prevention efforts will be largely determined by ways in which this complex problem is presented in the media. This presentation will review the first eight years of mass media stories on AIDS among IV drug users. It is based on a file of over 1000 relevant media stories, and informal discussions with reporters, editors, press relations officers, and other "experts" in the field. Several themes have repeatedly emerged in media coverage of AIDS among IV drug users: 1) A relative lack of presentation of IV drug users with AIDS. 2) An overrepresentation of AIDS in children of IV drug users. 3) Large fluctuations in the estimated threat of heterosexual transmission from IV drug users. 4) Difficulties in presenting the relationships of ethnic group membership to IV drug use and AIDS. 5) A polarizing focus on "free needles" as an AIDS prevention program. These themes can be seen as the expressions of the need for "newsworthy" stories and the need to fit new stories into previous coverage of both AIDS and illicit drug use. AIDS among IV drug users is one of the better examples of where the role of the media will be critical in controlling a potential public health catastrophe. Additional study, with formalized methodology and research funding, is greatly needed.

**COMMUNICATION OF HEROIN OVERDOSE INFORMATION.** James L. Sorensen and Julie London. University of California, San Francisco, CA; Donald Tusel. Veteran's Administration Medical Center, San Francisco, CA; Rachel Wolfe. University of California, San Francisco, CA; Allyson Washburn. Bayview-Hunter's Point Foundation; Jennifer R. Schell and Roland Dumontet. University of California, San Francisco, CA.

An unusually potent mixture of black tar heroin triggered at least 50 overdoses and 3 deaths in San Francisco one weekend in Fall 1989. To understand how patients learned of the danger, and to inform those who had not heard, we interviewed 120 heroin abusers in three outpatient drug programs during the next two weeks. The subjects were in outpatient heroin detoxification ( $n = 65$ ) and methadone maintenance ( $n = 55$ ), approached consecutively as they came to the clinics for treatment. Seventy-eight percent were men, 43% were ethnic minorities, 82% were unemployed, and their mean age was 39 years. They had been in treatment an average of four times. Of the 120 subjects, only 4% had not yet heard of the overdoses at the time of the interview. Of the 115 who had learned of the problem, 34% learned of it *first*

from television coverage, 32% from friends or "on the street," and 13% from newspapers. Over three-fourths of the subjects reported hearing about the overdoses from multiple sources, e.g., both television and newspaper. We will present interclinic differences, correlates of learning early versus late about the danger, and will discuss the drug users' reaction to the information, which ranged from seeking drug treatment to seeking to buy the potent heroin that was so dangerous. The presentation will include showing some coverage by the television station from which the greatest number of subjects learned of the overdoses. Although some research has indicated that heroin addicts seldom watch television, the media has an important role in alerting the drug users to such public health emergencies.

**PORTRAYAL OF DRUG AND ALCOHOL USE IN SPANISH-LANGUAGE FILMS.** Christopher D. Tori. California School of Professional Psychology, Berkeley/Alameda, CA.

Hispanics, particularly from Mexico, represent the fastest growing minority population in the United States. In many Southwestern regions (e.g., California and Texas) Spanish is as commonly spoken as is English. Thus, a cross-cultural perspective of the portrayal of alcohol and drugs in the mass media can help in understanding the full impact of the media on substance abuse problems in our country. Epidemiological studies have consistently found that heavy drinking is much more common among Hispanic men than the general male population. Hispanic women, on the other hand, reportedly have higher rates of abstinence than white women. Frequently cited factors to account for excessive alcohol use among Hispanic males have included a distorted perception of *machismo* behaviors and a widespread attitude among Hispanics that problem drinking for men is not a psychiatric disorder but merely irresponsible behavior. The present study predicted that these societal factors would be depicted and reinforced in motion pictures made in Mexico and shown throughout the United States. Over a one-year period, the thematic contents of 101 Mexican films presented at a Spanish speaking theater were analyzed using the motivational constructs of Henry A. Murray. The incidence and situations involving alcohol or drugs used were also quantified along with subsequent violent resolutions of conflicts. As expected, heavy alcohol use was highly associated with masculine sexual potency and toughness. Women, on the other hand, were usually abstinent but tolerant of male drunkenness. Alcohol use was frequently used as the first response to emotional distress. Drug use, however, was negatively portrayed and associated with international crime and sexual deviance. The potential for the conditioning of maladaptive acceptance of alcoholism among Hispanic men is discussed.

**POLICY ISSUES IN GOVERNMENT-MEDIA-COMMUNITY PARTNERSHIPS FOR DRUG ABUSE PREVENTION.** Thomas E. Backer. Human Interaction Research Institute.

Recent research in the United States and internationally reveals large differences in the efficacy of various drug abuse prevention campaigns involving use of television and other mass media. Some of the most successful campaigns are organized around partnerships between Federal government agencies, mass media organizations such as television networks, and nonprofit community-based groups. Public policy supporting these partnership-based campaigns has yet to evolve, and their structure is often informal and undocumented. Also, there is infrequent communication and little comparative analysis among campaigns both within the drug abuse area, and between drug abuse and other

health behavior fields. These factors make scientific evaluation and enhancement of future media-based prevention campaigns more difficult. Several recent drug abuse prevention campaigns involving government-media-community partnerships will be analyzed to show how such partnerships evolve, and what critical elements lead to success. Results will be presented from an ongoing research study supported by the Office of Substance Abuse Prevention, which involves a comparative synthesis of "what works and what doesn't" for mass media health behavior campaigns in a number of topical areas (AIDS, drug abuse, smoking cessation, heart disease prevention, etc.). The current phase of the research is examining the role of organizations in these campaigns, using organizational change concepts as the mechanism of analysis. The presentation will conclude with suggestions for shaping public policy about drug abuse prevention campaign design, improving mechanisms for sharing drug abuse research findings through the media, and promoting cross-campaign communication and evaluation research to enhance future campaigns.

#### **PAPER SESSION**

##### *Stimulant Effects and Arousal*

Chair: *David Penetar*, Walter Reed Army Institute of Research, Washington, DC

**PHARMACOLOGICAL SEPARATION OF REM SLEEP ATONIA FROM CATAPLECTIC ATONIA.** J. Gila Lindsley. Sleep-Wake Disorders Center, Hampstead Hospital, Hampstead, NH.

It has long been assumed that the atonia of REM sleep and the atonia of narcolepsy share a common pharmacological substrate, with central muscarinic receptors clearly identified as critical to REM sleep. By extension, this should also be true for cataplexy. The data presented are inconsistent with this assumption. The effect on cataplexy and REM sleep in daytime naps, for a narcoleptic subject, of a nonspecific and an M<sub>1</sub>-specific antimuscarinic agent are detailed. Data are interpreted as demonstrating the atonia of narcoleptic cataplexy to be pharmacologically dissociable from the atonia of REM sleep.

**METHYLPHENIDATE AND PEMOLINE: EFFECTS ON SLEEPINESS AND MOOD DURING SLEEP DEPRIVATION.** Larry Matteson, Tamsin Kelly, Harvey Babkoff and Paul Naitoh. Naval Health Research Center, San Diego, CA.

Thirty-six male subjects (mean age = 20.94) participated in a study to test the effects of methylphenidate (10 mg every 6 hours; 8 doses) or pemoline (37.5 mg every 12 hours; 4 doses) in maintaining performance during 64 hours sleep deprivation. Subjective sleepiness was measured by a Visual Analog Scale (VAS), objective sleepiness by the number of lapses (intertap times longer than 3 sec) on a 10-min tapping task, and mood by Profile of Mood States (POMS). Results indicate that 37.5 mg of pemoline administered every 12 hours significantly reduces both subjective and objective measures of sleepiness in sleep-deprived subjects, primarily during the circadian troughs, but has little effect on self-ratings of mood; while 10 mg of methylphenidate administered every six hours has no significant effect on these measures.

**CAFFEINE AND TIME-OF-DAY EFFECTS ON A FORCE TASK.** L. Stephen Miller, Suzanne Hasseltine, Elizabeth A. Jenkins, Charles P. Stroble, James D. Griffin, Thomas W. Lombardo and Stephen C. Fowler. University of Mississippi, University, MS.