Alcohol and substance misuse have a variety of potential ramifications. In this edition of The Interface, we discuss studies that relate to alcohol/substance misuse and medical treatment nonadherence. Despite illness type, population characteristics, or adherence measures, studies are fairly consistent—alcohol and substance misuse reduce patient adherence with medical treatment.

**INTRODUCTION**

Alcohol and substance misuse may result in a number of potential psychological, legal, and health complications, including nonadherence to medical treatment. In this installment of The Interface, we review recent empirical studies on the topic of alcohol/substance misuse and nonadherence with medical treatment. We have elected to review only contemporary studies (i.e., the majority have been published over the past five years) and only those that relate to alcohol/substance usage in relation to medical, not psychiatric, treatment adherence. Following this review, we conclude that alcohol and substance misuse unequivocally contributes to nonadherence with medical treatment regardless of illness type, ethnicity of the population under study, or methodology of the investigation.

**NONADHERENCE IN HUMAN IMMUNODEFICIENCY VIRUS TREATMENT**

In the area of alcohol/substance misuse and treatment nonadherence, studies over the past five years involving human immunodeficiency virus (HIV) are the most numerous. We will first review, by date of publication, studies with US patient samples and then studies from other countries.

**US studies.** In a 2003 study, Tucker and colleagues examined 1,910 individuals with HIV infection to assess their adherence to antiretroviral medication “during the past week.”1 In this sample, nonadherence was associated with participants’ use of cocaine, amphetamines, or sedatives in the past month as well as moderate-to-heavy alcohol intake.

In 2004, Ingersall reported that among 120 individuals on antiviral therapy for HIV infection, recent crack cocaine and heroin use reduced treatment adherence.2 Hinkin and colleagues examined 148 HIV-positive adults and found that current drug abuse/dependence, but not alcohol...
use, was associated with medication nonadherence. In a sample of 273 patients in several HIV clinics in Louisiana, 34.4 percent of participants were nonadherent with medications; in this study population, problematic drinking was associated with nonadherence to treatment. Finally, drinking was associated with nonadherence with medications; in this study population, problematic drinking was associated with nonadherence to treatment. Finally, among 115 HIV-positive patients who were identified as having difficulty adhering to their medication treatment, Murphy and colleagues found that those who had never used drugs (77% adherence), former users (68% adherence) or those who had never used drugs (77% adherence). Finally, in a study by Lazo and colleagues, investigators found that alcohol use was independently associated with medication nonadherence.

Additional studies continue to support the conclusions of the preceding investigators. For example, Braithwaite and colleagues examined veterans who were HIV-positive and found that abstainers from alcohol missed 2.4 percent of medication doses on query days, nonbinge drinkers 3.5 percent of doses, and binge drinkers 11.0 percent of doses. Chander, Lau, and Moore examined 1,711 HIV-infected individuals from an urban setting and reported that “hazardous” alcohol use was independently associated with decreased medication adherence.

In a related study, among HIV-infected drug users, Maru and colleagues found that the use of alcohol predicted reduced medication adherence in women, but not men. In a related study, among HIV-infected drug users, Maru and colleagues found that one of the major causes of medication discontinuation was entry into a drug treatment program. With the exception of one negative finding with regard to alcohol use and one finding of alcohol effects in women but not men, the preceding studies all indicate that alcohol/substance misuse compromises adherence with medication in the treatment of HIV infection.

Non-US studies. Do these nonadherence patterns transcend US study samples? Apparently so! Various French investigators have reported nonadherence to retroviral therapy as a result of alcohol consumption, injecting drugs, and poly-drug usage. These associations are also evident in Spanish as well as Chinese samples; intravenous drug use and heroin use were associated with nonadherence with HIV medications in a sample of 320 Spanish patients and a sample of 308 Chinese patients, respectively.

Braithwaite and colleagues examined veterans who were HIV-positive and found that abstainers from alcohol missed 2.4 percent of medication doses on query days, nonbinge drinkers 3.5 percent of doses, and binge drinkers 11.0 percent of doses.

A sample of 150 HIV-positive individuals, Hinkin and colleagues tracked medication adherence over a six-month period using an electronic monitoring device; compared with drug-negative participants, drug-positive participants demonstrated significantly less adherence with treatment medications. In this study, drug use by participants was associated with a four-fold greater risk of adherence failure. Hicks and colleagues examined 659 HIV-positive patients for adherence patterns and found that current substance users were significantly less likely to be adherent (60% adherence) than former users (68% adherence) or those who had never used drugs (77% adherence). Finally, in a study by Lazo and colleagues, investigators found that current substance users were significantly less likely to be adherent (60% adherence) than former users (68% adherence) or those who had never used drugs (77% adherence). Finally, in a study by Lazo and colleagues, investigators found that current substance users were significantly less likely to be adherent (60% adherence) than former users (68% adherence) or those who had never used drugs (77% adherence).
Consistently data indicate that alcohol and/or substance use impair adherence with medical treatment, whether with medications, appointments, or treatment recommendations. In the aftermath of nonadherence, we suspect that there is a subsequently higher utilization of healthcare services and/or greater mortality as well. CONCLUSIONS While evident to most clinicians, the preceding data reinforce the unequivocal conclusion that alcohol and substance misuse by patients may impair successful medical treatment through nonadherence. This finding is explicit and consistent throughout a variety of studies with different populations, varying methodologies, and various illness states. This conclusion indicates that physicians, both in psychiatry and primary care, need to be highly vigilant about the potential impact on adherence of alcohol and substance usage. Indeed, being aware of the potential risk of nonadherence may enable the physician to undertake additional educational efforts with alcohol/substance-using patients by emphasizing the importance of treatment adherence; scrutinizing ongoing medication usage and disease response; and preparing for supportive confrontation, if indicated, about nonadherence. These clinician efforts, of course, must be undertaken in the spirit of compassion and understanding because, for many, alcohol and drug use is a fatal attraction, particularly with regard to adherence with medical care.

REFERENCES


AUTHOR AFFILIATION: Dr. R. Sansone is a professor in the Departments of Psychiatry and Internal Medicine at Wright State University School of Medicine in Dayton, Ohio, and Director of Psychiatry Education at Kettering Medical Center in Kettering, Ohio; Dr. L. Sansone is a family medicine physician (government service) and Medical Director of the Primary Care Clinic at Wright-Patterson Air Force Base. The views and opinions expressed in this column are those of the authors and do not reflect the official policy or the position of the United States Air Force, Department of Defense, or US government.

ADDRESS CORRESPONDENCE TO: Randy A. Sansone, MD, Sycamore Primary Care Center, 2115 Leiter Road, Miamisburg, OH 45342; Phone: (937) 384-6850; Fax: (937) 384-6938; E-mail: Randy.sansone@khnetwork.org