Drug and Alcohol Dependence 161 (2016) 222–229

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

journal homepage: www.elsevier.com/locate/drugalcdep

Full length article

Clinical characteristics of alcohol combined with other substance use disorders in an American Indian community sample

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ARTICLE INFO

Article history:
Received 8 September 2015
Received in revised form 2 February 2016
Accepted 3 February 2016
Available online 8 February 2016

Keywords:
American Indian
Alcohol
Multiple substance use disorder
Clinical course of alcoholism

ABSTRACT

Background: Alcohol and other substance use disorders (SUD) pose major problems of morbidity and mortality in some American Indian communities, but little is known about the clinical characteristics, risk factors, and consequences of combined alcohol and other substance use disorders (multi-substance use disorder, MSUD) in those communities.
Methods: Using the Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA), in a community sample of 876 American Indians, the clinical characteristics of lifetime DSM-5 moderate or severe alcohol use disorder alone (AUD alone) ($n = 146$) and MSUD (defined as alcohol and ≥ 1 other SUD) ($n = 284$) were evaluated and compared to 347 participants with no lifetime SUD (no SUD).
Results: The majority (57%) of participants with a SUD had multi-substance use disorder and 94% of those were with AUD. Stimulants (cocaine and/or amphetamine) and/or cannabis were the most common other SUDs. Participants with AUD alone were more likely to be male and have an earlier age of first alcohol intoxication than those with no SUD. Those with MSUD were more likely to have dropped out of high school, have antisocial personality disorder (ASPD) or conduct disorder (CD), have earlier ages of first alcohol intoxication and first use of cannabis and stimulants, an earlier age of onset of AUD, and more of several AUD symptoms than those with AUD alone, but the same temporal course and time to remission of AUD.
Conclusions: MSUD is prevalent in this sample, is associated with multiple comorbidities and denotes a more severe alcohol syndrome than AUD alone.

1. Introduction

National surveys have demonstrated that a large proportion of people using substances are not just using one drug but are using many different drugs, both licit and illicit, both in combination and sequentially (Clayton, 1986; Compton et al., 2007). Therefore, the study of the epidemiology, clinical correlates, and consequences of multidrug use becomes an important public health issue. In multidrug use patterns, the most frequent appears to be those involving alcohol, and alcohol is typically the first substance used over the developmental trajectory of substance use. Although several national surveys have collected epidemiological data on the prevalence and trajectory of multi-substance use, primarily in youth (Conway et al., 2013; Moss et al., 2014), there have been fewer studies that have focused on multi-substance dependence. Data from the National Comorbidity Survey demonstrate that over 30% of men and women with alcohol dependence also have another drug dependence (Kessler et al., 1997). Moss et al. (2015) have estimated that in the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) data that a similar percentage (25.3%) of those with alcohol dependence used other drugs such as tobacco, cannabis and cocaine, and they had the most severe pattern of alcohol consumption as well as an overrepresentation of other Axis I and Axis II disorders.

There has been less information on how multi-substance use may differentially impact minority communities, particularly in American Indians (Whitesell et al., 2012). American Indians, as a group, have higher rates of alcohol-related morbidity and mortality than many other U.S. ethnic groups (Landen et al., 2014; Indian Health Service, 2009, 2015). The rates of alcohol and other substance use disorders (SUDs) in the small number of tribes studied have been reported to be 2–5 times higher (Ehlers et al., 2004a; Leung et al., 1993; Robin et al., 1998; Spicer et al., 2003) than

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http://dx.doi.org/10.1016/j.drugalcdep.2016.02.006
0376-8716/

the epidemiological rates for the U.S. general population (Compton et al., 2007; Grant et al., 2004, 2015; Hasin et al., 2007; Smith et al., 2006). One possible explanation for the higher rates of morbidity and mortality associated with alcohol use disorders (AUDs) in some American Indian communities is that they may have more multi-substance use disorder (MSUD) than the general population.

Two studies of multi-substance use and use disorder in American Indians and Alaska Natives lend support to this hypothesis. In a community sample of 1086 Navajo participants, Kunitz (2008) found that the use of higher numbers of drugs was associated with higher rates of DSM-3R alcohol dependence and more alcohol dependence symptoms. They also found that earlier lifetime first drink was associated with higher levels of drug use. In another study that evaluated 582 Alaska Natives in an inpatient treatment program, it was found that patients with alcohol plus opiate dependence drank more, and had earlier ages of onset of first intoxication, regular drinking, and alcohol dependence than those with alcohol plus cocaine or cannabis dependence (Malcolm et al., 2006). While these data suggest that MSUD represents a more severe syndrome than has been reported in the general population (Moss et al., 2010), it is not known whether some populations experience different substance use combinations or other comorbidities and thus whether these data will generalize to other community samples of adult or adolescent American Indians. Knowledge concerning the clinical characteristics of MSUDs within a sample is important in that it may allow more tailored intervention, prevention and treatment programs for that community to be developed.

The present report is part of a larger study exploring risk factors for substance dependence in a community sample of American Indians (Ehlers et al., 2004a, 2008c; Gilder et al., 2004, 2006, 2007, 2009). The lifetime prevalence of substance dependence in this Indian sample is high and genetic and environmental risk factors for substance dependence have been identified (Ehlers and Wilhelmsen, 2005, 2007; Ehlers et al., 2004b, 2006, 2007a,b,c, 2008a,b, 2009, 2010a,b, 2011, 2013; Gizer et al., 2011; Wall et al., 2003; Wilhelmsen and Ehlers, 2005). We have also demonstrated in this population that AUDs have an early age of onset, a rapid and severe clinical course, specific patterns of psychiatric comorbidity, and high rates of remission (Ehlers et al., 2008a; Gilder et al., 2004, 2006, 2008).

Using data from this unique sample, we sought to determine the prevalence of single and multiple substance use disorders. We then investigated the clinical correlates of AUDs with and without one or more other substance use disorders, and examined whether they differed in their demographics, age of onset, comorbidity, clinical course, and tendency to remit.

2. Material and methods

2.1. Participants

American Indian participants were recruited from 8 geographically contiguous rural Indian reservations in Southwest California with a total population of about 1835 individuals who were American Indian and 18 years of age or older and therefore eligible for the study. Participants were recruited from tribal halls, health clinics, tribal libraries, and stores on the reservations. Flyers advertising the study were posted in each location with the telephone number of the tribal recruitment coordinator, who visited each location regularly and approached potential participants to offer information about and enrollment in the study. Individuals who elected to participate were encouraged to inform other individuals about the study. Transportation from home to The Scripps Research Institute was provided. The protocol for the study was approved by the Institutional Review Board of the Scripps Research Institute, and the Indian Health Council, a tribal review group overseeing health issues for the reservations where recruitment was undertaken. Written informed consent was obtained from each participant after the study was fully explained.

2.2. Measures

Each participant completed an interview with the Semi-Structured Assessment for the Genetics of Alcoholism (SSAGA; Bucholz et al., 1994) in order to generate demographic variables, lifetime alcohol, cannabis, and stimulant use and use-related symptom variables, and lifetime Diagnostic and Statistical Manual, Fifth Edition (DSM-5; American Psychiatric Association, 2013) use disorder and psychiatric disorder diagnoses. The SSAGA has undergone both reliability and validity testing (Bucholz et al., 1994; Hesselbrock et al., 1999) and has been used in another American Indian sample (Hesselbrock et al., 2000, 2003; Malcolm et al., 2006). All interviews were reviewed and all best final diagnoses (lifetime prevalence) were made by a research psychiatrist/addiction specialist (DAG).

Demographics, substance use information, and symptoms were used to construct variables for the data analyses. A participant's reported Native American Heritage (NAH) was dichotomized as <50% vs. ≥50%. Years of education were total lifetime years of school attained. Current household income was determined as <$20 K vs. ≥$20 K per year, current marital status as married vs. not married, and current employment as employed vs. not employed.

Alcohol, cannabis, and stimulant use variables included: (1) age of first intoxication with alcohol, age of first cannabis use, and age of first stimulant use; (2) symptoms associated with use and their ages of onset; and (3) ages of onset of DSM-5 use disorder(s) and of one year full sustained remission from use disorder(s). Thirty-six lifetime alcohol use variables and their ages of onset were also assessed in order to examine the clinical course of alcoholism as previously described (Ehlers et al., 2004a). All stimulant use variables and symptoms were considered positive if a participant used or reported the symptom for cocaine or methamphetamine or both. A participant with ≥4 use disorder criteria for alcohol, cannabis, stimulant, or another substance (including sedative, opioid, phencyclidine, hallucinogen, ecstasy, or solvents) occurring in the same 12-month period during his/her lifetime was diagnosed with the respective lifetime DSM-5 SUD. These use disorders represent the moderate and severe, but not the mild, levels of DSM-5 SUD. Early versions of the SSAGA did not allow for a diagnosis of nicotine use disorders so nicotine dependence was not included. Three diagnostic categories were constructed as follows: no SUD, AUD without any other SUD (AUD alone), and alcohol with one or more additional SUD (MSUD).

The following psychiatric disorder variables were used in the analyses of comorbidity: antisocial personality disorder or conduct disorder (ASPD/CD), which was considered positive if a participant had a lifetime history of conduct disorder (CD) with onset of ≥3 criteria before the age of 15 years or antisocial personality disorder (ASPD); attention deficit hyperactivity disorder (ADHD), defined as having ADHD inattentive type or ADHD hyperactive type; "any affective disorder", which was considered positive if the participant had a lifetime history of major depressive disorder, bipolar I, bipolar II, or dysthymic disorder; and "any anxiety disorder", which was considered positive if the participant had a lifetime history of panic disorder, agoraphobia, or social phobia. All diagnoses were DSM-5 diagnoses with the exception of DSM-IV dysthymic disorder. Remission from alcohol dependence was defined as having no symptom of AUD for ≥12 months at the time of the interview (one year full remission).