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Concurrent use of alcohol with other drugs and DSM-5 alcohol use disorder comorbid with other drug use disorders: Sociodemographic characteristics, severity, and psychopathology

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ABSTRACT

Background: Little is known about the sociodemographic profiles, the intensity of drinking, the severity of alcohol use disorder (AUD), and psychopathology among individuals with specific patterns of concurrent alcohol and drug use and AUD and other drug use disorders (DUDs) comorbidity.

Methods: Data were from the National Epidemiologic Survey on Alcohol and Related Conditions-III. We examined sociodemographic correlates and psychopathology among individuals with specific patterns of concurrent use of alcohol and drug and AUD-DUD comorbidity relative to alcohol use or AUD only, respectively, using multinomial logistic regression. We also examined whether concurrent alcohol and drug use and AUD-DUD comorbidity increased the intensity of drinking and severity of AUD, respectively.

Results: The majority (62.0%) of past-year drinkers used only alcohol. The 12-month prevalence of AUD only was 53.5%. Individuals with concurrent use of alcohol and drugs and AUD-DUD comorbidity were more likely to be men, younger, never/previously married, with lower education and income (odds ratios (ORs) ≥ 1.2). Concurrent use of alcohol and drugs and AUD- DUD comorbidity groups were more likely to experience psychopathology than the alcohol use only and AUD only groups, respectively (ORs ≥ 1.3). The intensity of drinking was greater among the concurrent use groups relative to the alcohol use only group, while the severity of AUD was greater among AUD-DUD comorbidity groups relative to the AUD only group.

Conclusions: Research on consequences and treatment outcome of concurrent use of alcohol and drugs and AUD-DUD comorbidity is warranted to inform the development of more effective prevention/intervention programs.

1. Introduction

Alcohol use and alcohol use disorder (AUD) represent the most prevalent type of substance abuse and substance use disorder in the US and are associated with a variety of adverse health, economic and social outcomes (Connor et al., 2014; Grant et al., 2015a). Previous studies have shown that among alcohol users, one-third concurrently use other drugs (Staines et al., 2001). Among those with an AUD, the majority of them have comorbid other drug use disorders (DUDs) (Grant et al., 2015a). Interaction of alcohol with other drugs represents one of several clinically important mechanisms in which alcohol may increase the bioavailability of drugs resulting in increased toxicity of each substance (Breslow et al., 2015).

Several national surveillance systems have documented the extent of concurrent use of alcohol with other drugs and AUD-DUD comorbidity. About 30% of all substance abuse emergency department (ED) visits in 2012 involved the use of alcohol in combination with another drug (25%) (Substance Abuse and Mental Health Services Administration, 2014a). At the same time, the Treatment Episode Data Set (Substance Abuse and Mental Health Services Administration, 2014b) showed that substance abuse admissions for primary alcohol abuse with secondary drug abuse represented 17% of all treatment admissions which represented 45% of primary alcohol admissions. Another 17% of admissions related to primary drug abuse with secondary alcohol abuse represented one-third of primary drug abuse admissions.

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Despite the seriousness of concurrent use of alcohol with other drugs, very little research in the general population has focused on this area. Most of the previous research has been conducted among adolescent samples (Moss et al., 2012; Chiauzzi et al., 2013; Conway et al., 2013), college students (Martin et al., 1992) or treatment-seeking populations (Higgins et al., 1994; McCance-Katz et al., 1998; Vanek et al., 1996). Although several studies examined the concurrent use of alcohol and other drugs in national samples (Agrawal and Lynskey, 2009; Grant and Harford, 1990; Hedden et al., 2009; Quek et al., 2013; Midanic et al., 2007; Richter et al., 2002; Subbaraman and Kerr, 2015), these studies used data that are now over a decade old. Further, little is known about the prevalence and correlates of comorbid AUD and other DUDs. Although there is a literature on AUD-DUD comorbidity in the general population (Stinson et al., 2005) and concurrent use of alcohol and other drugs among individuals with AUD (Hedden et al., 2010; Moss et al., 2012, 2015), none of these studies have examined the prevalence and correlates of specific patterns of DUD comorbidity among individuals with AUD.

To address this gap in the literature, this study examines the prevalence, sociodemographic correlates and psychopathology of specific patterns of concurrent use of alcohol with other drugs, as well as specific patterns of Diagnostic and Statistical Manual, Fifth Edition (DSM-5: American Psychiatric Association, 2013) AUD-DUD comorbidity in a nationally representative sample of the US general population. Specific patterns of concurrent use of alcohol and other drugs are also examined in terms of intensity of drinking (light vs. moderate vs. heavy) and specific patterns of AUD-DUD comorbidity are examined in terms of severity of AUD (mild vs. moderate vs. severe).

2. Methods

2.1. Sample

Data were derived from a large representative sample of US non-institutionalized civilian population (n = 36,309), 18 years or older, including residents of selected group quarters; the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III), (Grant et al., 2014). Probability sampling was used to select respondents. Primary sampling units were counties or groups of contiguous counties, secondary sampling units (SSU) comprised groups of Census-defined blocks, and tertiary sampling units were households within SSUs.

Eligible adults within sampled households were randomly selected. Hispanics, Blacks, and Asians were oversampled. The screener- and person-level response rates were 72.0% and 84.0%, respectively, yielding a total response rate of 60.1%, comparable to most current US national surveys (Adams et al., 2013; Substance Abuse and Mental Health Services Administration, 2012). Data were adjusted for oversampling and nonresponse, then weighted to represent the US civilian population based on the 2012 American Community Survey (Bureau of the Census, 2013). All respondents gave informed consent and received $90 for survey participation. Protocol and consent procedures were approved by National Institutes of Health and Westat Institutional Review Boards.

2.2. Concurrent use of alcohol and other drugs

The Alcohol Use Disorder and Associated Disabilities Interview Schedule 5 (AUDADIS- 5) (Grant et al., 2011) was the diagnostic interview. Determining concurrent use of alcohol with other drugs was based on respondent's reporting of any use of alcohol and other drugs in the past 12 months. We formed five mutually exclusive non-overlapping groups: alcohol use only; alcohol + nicotine use only; alcohol + cannabis use only; alcohol + nicotine + cannabis use only; and alcohol + other drug use (that might include other combination of substances such as nicotine or cannabis use in addition to other drug use). Other drugs included sedative/tranquilizers, opioids, cocaine/crack, amphetamines, club drugs, hallucinogens, inhalants/solvents, heroin and any other drugs (e.g., steroids, antidepressants). Intensity of drinking was defined as average daily ethanol intake in the past 12 months: light drinker (< 0.23 ounces); moderate drinker (0.23–1.00 ounces); and heavy drinker (> 1.00 ounces).

Test-retest reliability of alcohol and other drug use were fair to excellent (kappa = 0.59–0.99) in a large general population survey (Grant et al., 1995).

2.3. Comorbid AUD and DUDs

Twelve-month DSM-5 AUD diagnoses required ≥2 of the 11 criteria in the 12 months preceding the interview. Twelve-month DSM-5 diagnoses of cannabis use disorder (CUD), nicotine use disorder (NUD) and other DUDs were constructed similarly. Similar to concurrent use of alcohol with other drugs, five mutually-exclusive non-overlapping groups representing various patterns of AUD-DUD comorbidity were constructed: AUD only; AUD + NUD only; AUD + CUD only; AUD + NUD + CUD only; and AUD + other DUDs (that might include NUD or CUD in addition to other DUDs). DSM-5 AUD severity levels were classified as mild, moderate or severe (2–3, 4–5, or ≥6 AUD diagnostic criteria).

Test-retest reliability of DSM-5 AUD categorical diagnoses (kappa = 0.62) and dimensional criteria scales (intraclass correlation coefficient [ICC] = 0.85) was substantial in a large general population sample (Grant et al., 2015b). The procedural validity of DSM-5 AUD was assessed through blind clinical reappraisal using the clinician-administered, semi-structured Psychiatric Research Interview for Substance and Mental Disorders, DSM-5 Version (PRISM-5) (Hasin et al., 2011). The clinical reappraisal, conducted in a large general population sample (Hasin et al., 2015a), showed good concordance between AUDADIS-5 and PRISM-5 AUD diagnoses and substantial concordance of their dimensional counterparts. Reliability and validity of DSM-5 NUD, CUD and other DUD diagnoses and dimensional criteria scales were fair to excellent in a general population sample (Grant et al., 2015b; Hasin et al., 2016).

2.4. Other psychiatric disorders

The AUDADIS-5 assessed 12-month DSM-5 mood and anxiety disorders: major depressive disorder (MDD); persistent depression (i.e., dysthymia), bipolar I disorder; panic disorder; agoraphobia; social and specific phobias; and generalized anxiety disorder (GAD).

Posttraumatic stress disorder (PTSD), antisocial personality disorder (ASPD), schizotypal personality disorder (SPD) and borderline personality disorder (BPD) were also assessed. PTSD diagnoses followed the DSM-5 definition, but criteria C and D more strictly required ≥3 positive, rather than ≥2 positive criteria, to be met. Reliability and validity of these diagnoses and their associated criteria scales were fair to moderate (Grant et al., 2015b; Hasin et al., 2015a).

2.5. Sociodemographic characteristics

We selected sociodemographic factors implicated in prior research as correlates of concurrent alcohol and drug use and AUD-DUD comorbidity (Compton et al., 2007; Dawson et al., 1995, 2015; Hasin et al., 2007, 2015b). Sociodemographic characteristics included: sex (male or female), age (18–29, 30–44, or ≥45 years), race/ethnicity (White, Black, Hispanic, Native American or Asian/Pacific Islander), marital status (never married; married or living as if married; or widowed/separated/divorced), educational level (less than high school, high school, or some college or more), family income (< 20,000, 20,000–34,999, 35,000–69,999 or > = 70,000), Urbanicity (urban, rural), and region (Northeast, Midwest, South or West).