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Rates of past-year alcohol treatment across two time metrics and differences by alcohol use disorder severity and mental health comorbidities

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ABSTRACT

Introduction: Little is known about how alcohol treatment rates vary across age or years since onset of an alcohol use disorder (AUD). We examined past-year treatment prevalence and associations across these important time metrics.
Method: Data on 22,278 adults ages 18–50 were from the National Epidemiologic Survey on Alcohol and Related Conditions-III (2012–2013). We examined the age-varying prevalence of alcohol treatment and associations of past-year AUD severity, MDD status, and DUD status with treatment. Additionally, for individuals with a lifetime AUD (N = 7089), we examined associations of severity, MDD, and DUD across years since AUD onset.
Results: Individuals with Moderate/Severe past-year AUD had significantly higher treatment rates at nearly all ages, compared to those with Mild or no AUD. For those with Moderate/Severe AUD, treatment rates were highest during late adolescence and middle adulthood and lowest during early adulthood. Mental health comorbidities were positively associated with treatment at certain age ranges in mid-adulthood. Among individuals with a lifetime AUD, those with Moderate/Severe past-year AUD had significantly higher past-year treatment rates across all years since onset. MDD and DUD were both positively associated with treatment at nearly all years since AUD onset.
Conclusions: Alcohol treatment rates varied notably by age and, to a lesser extent, by years since AUD onset. Greater AUD severity was consistently associated with higher rates of treatment, whereas Mild AUD had a much weaker relationship. MDD and DUD showed similar patterns of positive association with treatment. Our results highlight important subgroups where unmet treatment needs are highest.

1. Introduction

Alcohol use disorders (AUDs) are common in the population. Despite effective treatment for alcohol problems (Dawson et al., 2012; Jonas et al., 2012), utilization rates are low, indicating a profound unmet treatment need (Edlund et al., 2012; Hasin et al., 2007). Less than 10% of individuals with an AUD received treatment in the past year (Substance Abuse and Mental Health Services Administration (SAMHSA), 2014), and the lifetime probability of treatment for individuals with alcohol dependence is 54% (Blanco et al., 2015).

Despite our understanding that alcohol treatment is often an ongoing, dynamic process that varies across age and disease progression (Hser et al., 2007), time-varying trends in alcohol treatment are poorly understood. In this study we focus on two time metrics that we hypothesize may predict treatment need and, correspondingly, treatment seeking: age and years since AUD onset.

Temporal variations in alcohol treatment may occur for a number of reasons. First, at a population level, alcohol use varies notably across different ages and life stages, with alcohol use being most common during adolescence and early adulthood and declining throughout mid- to late-adulthood (SAMHSA, 2014). Age-varying trends in alcohol use may contribute to age-varying trends in alcohol treatment. Second, age is often a marker of life stage, reflecting differences in career development, family status, and societal expectations. Individuals often perceive greater consequences of their drinking as their professional, family, and societal responsibilities change, which may result in greater likelihood of treatment seeking. Existing studies of treatment utilization by age have yielded equivocal findings. In a national sample, Cohen et al. (2007) found that older adults had a higher lifetime probability of

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alcohol treatment. In contrast, Wang et al. (2005) found that, among individuals with an AUD, younger individuals had higher odds of past treatment than older individuals. Choi et al. (2014) found that older individuals had the lowest prevalence of past-year alcohol treatment. Additionally, several studies have reported that older individuals have longer delays to first treatment episode (Chapman et al., 2015; Chi et al., 2014; Wang et al., 2005).

Treatment rates may vary across the course of an individual's disorder due to differences in severity and in perceived need for treatment. Alcohol use severity is one of the strongest and most consistent predictors of alcohol treatment utilization (e.g., Evans-Polce et al., 2014; Finney and Moos, 1995; Oleski et al., 2010) with greater severity being associated with a higher likelihood of alcohol treatment utilization. Onset is a central event in the course of an AUD (Hser et al., 2007), and time since onset is strongly associated with first treatment utilization. Treatment prevalence in the first year since onset is quite low: five percent for individuals with alcohol dependence and one percent for those with alcohol abuse (Blanco et al., 2015). Studies have found that individuals with an alcohol disorder typically first receive treatment between six and 18 years after disorder onset (Bruffaerts et al., 2007; Kessler et al., 2001; Keyes et al., 2010; Wang et al., 2005, 2007). Years since onset is typically examined as a predictor of *first* treatment episode; however, past-year treatment utilization trends by years since onset remain poorly understood.

The presence of a comorbid mental health disorder, particularly a drug use disorder (DUD) or major depressive disorder (MDD), are also strongly associated with alcohol treatment utilization (Cohen et al., 2007; Grella et al., 2009; Mojtabai et al., 2002; Kaufman et al., 2014; Ilgen et al., 2011). Mental health comorbidity may increase alcohol treatment utilization by contributing to greater overall disease severity and impaired functioning (Burns et al., 2005; Clark et al., 2009; Landheim et al., 2006). Additionally, individuals with a comorbid mental health problem may be referred to alcohol treatment services through a mental health service provider (Schuler et al., 2015). Studies have shown that lifetime MDD and lifetime DUD are both associated with lifetime alcohol treatment (Cohen et al., 2007; Kaufman et al., 2014). Individuals with either comorbid MDD (Blanco et al., 2015) or DUD (Ilgen et al., 2011) are significantly more likely to initiate alcohol treatment than individuals without these factors. While both alcohol severity and comorbid mental health disorders are strongly related to alcohol treatment utilization, it is not known whether the magnitude of the associations vary across age or years since AUD onset.

In this study, we examine how past-year alcohol treatment rates vary both across age and years since AUD onset, using data from the National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III). These time metrics were selected to elucidate different processes related to treatment utilization: age was selected to examine processes across the life stage, while years since AUD onset was selected to examine processes across the course of the disorder. Additionally, we assess whether AUD severity or comorbidity with either MDD or a DUD varies in its association with treatment utilization with respect to either age or years since AUD onset. We implement time-varying effect modeling (TVEM) to examine past-year treatment rates across ages 18–50 and across 0–30 years since AUD onset. We specifically examine trends in past-year treatment, rather than lifetime utilization or first treatment episode, in recognition that alcohol treatment is often a recurring process. Understanding alcohol treatment trends across both age and years since AUD onset, as well as whether comorbidity status differentially impacts treatment utilization, will help to further characterize which individuals are receiving treatment as well as when treatment need remains unmet.

2. Methods

2.1. Study population and design

This study used data from NESARC-III, a nationally representative study of 36,309 non-institutionalized civilian adults using a multistage, stratified, probability-sampling method (Grant et al., 2014). Trained interviewers conducted face-to-face interviews in 2012–2013 with a screener- and person-level response rate of 72% and 84%, respectively. For analyses examining associations across age, our sample consisted of all individuals ages 18–50 (N = 22,278). For analyses examining associations since lifetime AUD onset, our sample consisted of individuals with a lifetime AUD diagnosis, and was restricted to individuals who did not have missing data on years since AUD onset and for whom years since onset was less than or equal to 30 years (due to sparseness), resulting in a sample size of 7089.

2.2. Measures

Age was assessed by self-report and was coded to the nearest year (M = 34.0, SD = 9.4). Alcohol use disorder was assessed by the Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5), a structured diagnostic interview that provides DSM-5 diagnoses and can be administered by non-clinician interviewers (Grant et al., 2015). Per DSM-5 diagnostic categories, individuals were classified as no AUD if they endorsed 0–1 of the 11 DSM-5 criteria, Mild AUD if they endorsed 2–3, and Moderate/Severe if they endorsed 4 or greater. Age of AUD onset was assessed by the AUDADIS-5, and years since AUD onset was calculated as age at interview minus age at onset of an AUD (M = 10.2, SD = 9.3). Years since onset analyses were truncated at 30 years due to sparseness of responses past 30 years.

Individuals were classified as having received past-year alcohol treatment if they responded affirmatively to the question "Have you ever gone anywhere or seen anyone for a reason that was related in any way to your drinking – a physician, counselor, Alcoholics Anonymous, or any other community agency or professional?" and reported that the treatment was received in the past 12 months (N = 548).

Past-year MDD and past-year DUD status were also assessed using the AUDADIS-5. Ten drug categories were combined to create a measure of any (non-alcohol) DUD versus none: amphetamine, opioid, sedatives, tranquilizers, cocaine, inhalants/solvents, hallucinogens, cannabis, heroin, and other. To determine DUD status, individuals were asked to report on use "either without a doctor's prescription or in greater amounts, more often, or longer than prescribed, or for a reason other than the doctor said you should use them." In our sample, 12.0% (N = 2680) of individuals met criteria for a MDD in the past year, and 5.4% (N = 1207) met criteria for a DUD in the past year.

We included a number of control variables in our analyses: *sex*, *race/ethnicity* (White non-Hispanic, Black non-Hispanic, Asian/Native Hawaiian/Other Pacific Islander non-Hispanic, American Indian/Alaska Native non-Hispanic, Hispanic), *education* (high school diploma or greater vs. less than high school diploma), and *other past-year mental health disorder* (including dysthymia, bipolar disorder, specific phobia disorder, social phobia disorder, panic disorder, agoraphobia, generalized anxiety disorder, post-traumatic stress disorder, anorexia, bulimia nervosa, and binge-eating disorder). See Table 1 for descriptive statistics of the sample.

2.3. Analysis

Analyses were conducted using TVEM, a type of non-parametric spline regression that estimates how regression coefficients vary