Drug and Alcohol Dependence 187 (2018) 79–87

Contents lists available at ScienceDirect

Drug and Alcohol Dependence

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

Full length article

Prevalence, patterns, and correlates of multiple substance use disorders among adult primary care patients

William S. John[a,*], He Zhu[a], Paolo Mannelli[a], Robert P. Schwartz[b], Geetha A. Subramaniam[c], Li-Tzy Wu[a,d,e,f]

[a] Department of Psychiatry and Behavioral Sciences, Duke University Medical Center, 40 Duke Medicine Circle, Durham, NC, 27710, USA
[b] Friends Research Institute, Inc., 1040 Park Ave #103, Baltimore, MD, 21201, USA
[c] National Institute on Drug Abuse, 6001 Executive Blvd #5128, Rockville, MD, 20852, USA
[d] Department of Medicine, Division of General Internal Medicine, Duke University Medical Center, 40 Duke Medicine Circle, Durham, NC, 27710, USA
[e] Duke Clinical Research Institute, Duke University Medical Center, 2400 Pratt Street, Durham, NC, 27705, USA
[f] Center for Child and Family Policy, Sanford School of Public Policy, Duke University, 302 Towerview Road, Durham, NC, 27708, USA

ARTICLE INFO

Keywords:
Substance use disorder
Cannabis use disorder
Opioid use disorder
Primary care
Polysubstance
Comorbidity
Latent class analysis

ABSTRACT

Background: Addressing multiple substance use disorders (SUDs) in primary care-based screening and intervention may improve SUD treatment access, engagement, and outcomes. To inform such efforts, research is needed on the prevalence and patterns of multiple SUDs among primary care patients.

Methods: Data were analyzed from a sample of 2000 adult (aged ≥ 18) primary care patients recruited for a multisite National Drug Abuse Treatment Clinical Trials Network (CTN) study (CTN-0059). Past-year DSM-5 SUDs (tobacco, alcohol, and drug) were assessed by the modified Composite International Diagnostic Interview. Prevalence and correlates of multiple versus single SUDs were examined. Latent class analysis (LCA) was used to explore patterns of multiple SUDs.

Results: Multiple SUDs were found among the majority of participants with SUD for alcohol, cannabis, prescription opioids, cocaine, and heroin. Participants who were male, ages 26–34, less educated, and unemployed had increased odds of multiple SUDs compared to one SUD. Having multiple SUDs was associated with greater severity of tobacco or alcohol use disorder. LCA of the sample identified three classes: class 1 (83.7%) exhibited low prevalence of all SUDs; class 2 (12.0%) had high-moderate prevalence of SUDs for tobacco, alcohol, and cannabis; class 3 (4.3%) showed high prevalence of SUD for tobacco, opioids, and cocaine. LCA-defined classes were distinguished by sex, age, race, education, and employment status.

Conclusions: Findings suggest that primary care physicians should be aware of multiple SUDs when planning treatment, especially among adults who are male, younger, less educated, or unemployed. Interventions that target multiple SUDs warrant future investigation.

1. Introduction

The gap between the need for and receipt of treatment for substance use disorder (SUD) in the U.S. remains large. The National Survey on Drug Use and Health (NSDUH) estimated that 20.1 million Americans in 2016 had a SUD (alcohol or illicit/nonmedical drugs) in the past-year; however, only 10.6% of those with SUD received treatment (SAMHSA and CBHSQ, 2017). One strategy for increasing treatment access to this underserved population includes the integration of SUD services into primary care settings (Ducharme et al., 2016). To this end, data are needed to inform the specific treatment needs among primary care patients with SUDs in order to guide the development of more targeted and effective screening, assessment, and intervention approaches.

One factor to be taken into consideration when screening for and assessing SUD in primary care is that many individuals may meet criteria for multiple SUDs. For instance, the 2012–2013 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) indicated that the majority of adults with past-year DSM-5 SUDs had at least one other co-occurring SUD, ranging from 56.8% for adults with prescription opioid use disorder to 97.5% for adults with hallucinogen use disorder (McCabe et al., 2017). This NESARC analysis also found

* Corresponding author at: Duke University Department of Psychiatry and Behavioral Sciences, Division of Social and Community Psychiatry, 40 Duke Medicine Circle, Durham, NC, 27710, USA.
E-mail address: william.john@duke.edu (W.S. John).

https://doi.org/10.1016/j.drugalcdep.2018.01.035
Received 25 November 2017; Received in revised form 26 January 2018; Accepted 27 January 2018
Available online 27 March 2018
0376-8716/

that males, younger adults, African-Americans, and those with concurrent psychiatric disorders had increased odds of having multiple past-year SUDs compared to those with a single SUD. Moreover, studies have found that persons with multiple SUDs have increased odds of overdose, suicide, sexual risk behaviors, infectious disease, and worse treatment outcome (Connor et al., 2014; Petry, 2001). Taken together, individuals with multiple SUDs likely constitute a more severe subset of patients with added barriers to accessing and engaging in SUD treatment services. A better understanding of the prevalence, patterns, and correlates of multiple past-year SUDs among primary care patients may help to more accurately triage patients into risk categories and facilitate linkage to proper care.

The prevalence and correlates of multiple past-year SUDs in patients seen in primary care remain understudied compared to the general population. However, research is needed because findings among samples from the general population may not necessarily translate to primary care samples. For instance, many studies report a higher prevalence of SUDs in primary care compared to national surveys, perhaps due to SUD-related health problems requiring treatment or other distinct correlates (Pilowsky and Wu, 2012). Additionally, prevalence and correlates of multiple SUD data in primary care using DSM-5 dimensional criteria are needed (APA, 2013), which includes modifications from the previously used DSM-4 (APP, 2000), in order to inform future research and provide the most clinically relevant information. For instance, it is unknown whether having multiple SUDs is associated with greater severity (i.e., number of DSM-5 criteria) of substance-specific use disorders, which may have implications for guiding clinical assessment and care.

To further our knowledge on multiple SUDs in primary care, we conducted a secondary data analysis of a multisite clinical trial sponsored by the National Institute on Drug Abuse's National Drug Abuse Treatment Clinical Trials Network (NIDA CTN): The Tobacco, Alcohol, Prescription medications, and other Substance [TAPS] Tool study (McNeely et al., 2016). The TAPS Tool study assessed the performance of a novel brief substance screening and assessment tool among a diverse sample of patients from five primary care practices. Our objectives were to use this study sample to 1) examine the prevalence of multiple SUDs, stratified by substance, and demographic correlates of multiple SUDs, 2) to examine the patterns of single and multiple SUDs by SUD severity level, and 3) to use latent class analysis (LCA) to explore patterns of multiple SUDs by identifying heterogeneous subgroups of patients with SUDs (e.g., Wu et al., 2009a,b, 2011). Analyses were conducted in the total sample as well as among participants who reported substance use in the past 12 months in order to inform screening, brief intervention, and referral to treatment (SBIRT) efforts. Overall, this information may inform early identification or assessment of multiple SUDs among primary care patients, which may lead to more effective treatment strategies among primary care patients screening positive for substance use or SUD.

2. Methods

2.1. Study sample

Methods for the TAPS Tool Study have been published in detail previously (Wu et al., 2016a,b). Briefly, a total of 2000 adult patients were recruited from August 2014 to April 2015 at five primary care clinics for the NIDA CTN TAPS Tool Study (CTN-0059). Eligibility criteria included being an adult aged 18 years or older, having the ability to provide informed consent, and being able to comprehend spoken English. The primary care clinics from which participants were recruited included a Federal Qualified Health Center in Baltimore, MD (n = 589), a public hospital-based clinic in New York, NY (n = 534), a university-based health center in Richmond, VA (n = 211), and two non-academic community-based primary care practices in Kannapolis, NC (n = 287 and 379). Sites were selected on the basis of geographical diversity and to include both academic and non-academic settings.

All study sites conducted recruitment procedures consistently (Wu et al., 2016a,b). Participants were recruited from the waiting area of clinics where research assistants invited them to participate in an anonymous screening for a health study. If interested, participants were brought to a private room and were assessed for eligibility and verbal consent was obtained. Eligible participants completed the TAPS tool (via self-administration and interviewer-administration) and standard reference measures of substance use and substance use-related problems were administered by trained research assistants. Participants were compensated $20 for the completion of all survey assessments. Of 14,171 individuals approached, 12% declined screening, and 88% were assessed for eligibility; 52% were excluded due to ineligibility (not a clinic patient [n = 2884]; language [n = 2142]; previously enrolled [n = 1042], age < 18 [n = 278], or other reason [n = 172]). A total of 2057 adults (35% of eligible adults) were enrolled in the study; 2000 participants completed the study (Wu et al., 2016a,b).

2.2. Study variables

The Composite International Diagnostic Interview (CIDI), Second Edition, Substance Abuse Module has been widely used to assess SUDs (Compton et al., 1996; Cottler, 2000). Using the modified World Mental Health CIDI (WMH-CIDI), the existing CIDI items were mapped onto past-year DSM-5 SUD classifications by omitting the item on legal problems and including the CIDI item on craving (McNeely et al., 2016; Wu et al., 2016a,b). DSM-5 criteria for SUD in the past 12 months was assessed separately for each substance including tobacco, alcohol, cannabis, cocaine/crack, methamphetamine, heroin, prescription opioid, stimulant, sedative, hallucinogen, inhalant, and other nonspecific drug use disorders. Furthermore, all substance-specific criteria for SUD were assessed (i.e., no skip pattern was used when assessing substance-specific criteria). Because the WMH-CIDI does not include many of the DSM-5 tobacco use disorder criteria, the latter was assessed using the language from the drug section. Based on the DSM-5 (APA, 2013), SUD was defined as meeting ≥2 DSM criteria for a given substance, mild SUD was defined as meeting 2–3 criteria, and moderate/severe SUD was defined as meeting ≥4 criteria. Demographic data were also collected via self-report and included age, sex, race, ethnicity, education, marital status, and employment status.

2.3. Data analysis

We first examined the demographic distribution of the sample. Next, we examined the prevalence of single and multiple past-year SUDs in the total sample and among past-year substance users. A single SUD was defined as meeting DSM-5 criteria for a given substance but no other substance. Having multiple SUDs was defined as meeting DSM-5 criteria for SUD of 2 or more substances. The prevalence of single and multiple SUDs was also examined among past-year users of specific substances. Unadjusted and adjusted multinomial logistic regression models were used to estimate the demographic correlates of having only one past-year SUD, 2 past-year SUDs, and 3+ past-year SUDs, all of which were mutually exclusive categories. Logistic regression was also used to examine the association of multiple SUDs with the SUD severity (i.e., number of criteria met). Demographic variables and study site were included as control variables in the adjusted logistic regression models.

LCA was applied to six dichotomous past-year SUD variablesfor tobacco, alcohol, cannabis, cocaine/crack, prescription opioids/heroin, and other drugs (i.e., sedatives, methamphetamine, prescription stimulants/amphetamines, hallucinogens, inhalants, other nonspecific drugs) to empirically determine subgroups of participants with multiple SUDs in the total sample and among those reporting past-year substance use. Model fit was evaluated between 1 and 4 latent classes using information from the likelihood-ratio (G^2) test, Akaike's Information