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DSM-5 cannabis use disorder in the National Epidemiologic Survey on Alcohol and Related Conditions-III: Gender-specific profiles

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HIGHLIGHTS

- Women demonstrated telescoping from onset of cannabis use to cocaine use disorder.
- Men and women with CUD were highly comorbid and had low quality of life.
- Odds of severe/moderate CUD among Black men/women were greater than White counterparts.
- Odds of CUD among Native American women were greater than White women.

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ABSTRACT

Objective: The objective of this study was to present current information on the prevalence, correlates, comorbidity and quality of life among men and women with cannabis use disorder (CUD).

Methods: In 2012–2013, 36,309 respondents ≥ 18 years old participated in face-to-face interviews in the National Epidemiologic Survey on Alcohol and Related Conditions-III.

Results: Prevalence of 12-month CUD was greater among men (3.5%) than women (1.7%). Women experienced shorter duration from onset of cannabis use to onset of CUD than men (mean = 5.8 years, men; mean = 4.7 - years, women). In both men and women, prevalences of CUD were greater among young adults, Blacks, and those with lower income and greater among Native American women relative to White women. CUD was highly comorbid with other substance use disorders, PTSD, ASPD and borderline and schizotypal PDs for men and women. Quality of life for individuals with CUD was low regardless of gender.

Conclusions: DSM-5 CUD among men and women is highly prevalent, comorbid and characterized by low quality of life. Results highlighted the need for integrated treatment of CUD and comorbid disorders and the urgency of identifying and implementing effective prevention and intervention approaches, especially for those sociodemographic subgroups for which both men and women are at greater risk for the disorder.

1. Introduction

Cannabis use is highly prevalent in the United States (9.5%: Hasin et al., 2016) and worldwide (3.9%: United National Office of Drug Control, 2015). Cannabis use can lead to addiction (Volkow, Baler, Compton, & Weiss, 2014) and has been associated with numerous adverse consequences including cognitive decline (Meir et al., 2012; Renard, Krebs, & Jay, 2016; Shea, McGregor, & Mallet, 2006), impaired driving ability, traffic crashes and fatalities (Brady & Li, 2014; Hartman & Huestis, 2013; Lenne, Dietze, & Triggs, 2010), low educational/occupational attainment (Compton, Gfroerer, Conway, & Finger, 2014; Lynskey & Hall, 2000), emergency room visits (Substance Abuse and Mental Health Services Administration, 2013; Zhu & Wu, 2016), poor quality of life (Lev-Ran et al., 2012), and high rates of comorbidity (Conway, Compton, Stinson, & Grant, 2006; Stinson, Ruan, Pickering, & Grant, 2006).

Cannabis use disorder (CUD) has increased in the U.S. between 2001–2002 and 2012–2013 (Hasin, Saha, et al., 2015). CUD is defined

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as problematic cannabis use leading to clinically significant impairment or distress manifested by impaired control, continued use despite social/medical problems, craving, tolerance and withdrawal (American Psychiatric Association, 2013). Despite its increasing prevalence, no study has examined sex-specific sociodemographic and clinical profiles of individuals with CUD and only two studies have reported gender differences in these correlates (Goldstein, Dawson, Chou, & Grant, 2012; Khan et al., 2013) and these data are over a decade old. The consistent observation that men have greater rates of CUD than women supports the need to examine sex-specific profiles of CUD that may identify factors contributing to the gender-related differential in prevalence of CUD. Without consideration of stratification by gender, vital information influencing the development of CUD among men and women may be missed. Examining profiles among men and women emphasizes the importance of reporting gender similarities as equally important as reporting gender differences to our understanding of the etiology of CUD and the development of gender-specific prevention and intervention programs (McCarthy & Konkle, 2005; Sanchis-Segura & Becker, 2016).

Moreover, current knowledge of differences and similarities between men and women with CUD in the U.S. is based on the Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (DSM-IV) (American Psychiatric Association, 2000). In the DSM-5 (American Psychiatric Association, 2013), CUDs were revised to combine dependence and abuse criteria into a single disorder, drop the legal problems criterion, and add craving, withdrawal and a severity metric (Hasin et al., 2013). Changes in the definition of CUD may alter gender-specific profiles in correlates of CUD found in earlier studies based on DSM-IV. Therefore, new information on gender similarities and differences of DSM-5 CUD is needed.

Earlier studies conducted when CUD was less prevalent (and therefore more deviant) showed a high degree of comorbidity with other common psychiatric disorders (Conway et al., 2006; Stinson et al., 2006). However, increases in the prevalence of CUD may now include more individuals without vulnerability to other psychiatric disorders, suggesting that comorbidity patterns may have changed over the last decade and these changes may have differentially affected men and women (Hasin et al., 2016).

We provide the first nationally representative information on gender-specific profiles in sociodemographic and clinical correlates of DSM-5 CUD using data from 2012 to 2013 National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III) (Grant et al., 2014).

2. Method

2.1. Sample

The NESARC-III was a nationally representative face-to-face survey of the noninstitutionalized civilian population ≥ 18 years residing in households and selected group quarters (Grant et al., 2014; Grant, Goldstein, Saha, et al., 2015). Data collection and interview field methods, detailed elsewhere (Grant et al., 2014), included initial structured home study, in-person training, on-going supervision and random respondent callbacks to verify data. Respondents were selected through multistage probability sampling, including primary sampling units (counties/groups of contiguous counties); secondary sampling units (SSU – groups of Census-defined blocks); and tertiary sampling units (households within SSUs) from which respondents were selected, with Blacks, Asians, and Hispanics oversampled. Data were adjusted for nonresponse and weighted to represent the U.S. population based on the 2012 American Community Survey (Bureau of the Census, 2013). Sample size was 36,309: household response rate was 72%; person-level response rate, 84%, and overall response rate, 60.1%, comparable to other U.S. national surveys (Substance Abuse and Mental Health Services Administration, 2013; Centers for Disease Control and Prevention, 2014). Respondents received $90.00 for participation. Institutional review boards at the National Institutes of Health and Westat approved the study protocol.

2.2. Assessments

The Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5) (Grant, Goldstein, Chou, & Hasin, 2011) was the diagnostic interview. AUDADIS-5 measures DSM-5 alcohol, and drug use disorders, and selected psychiatric disorders. DSM-5 CUD diagnoses required ≥ 2 of 11 criteria within a 12-month period and were classified as mild (2–3 criteria), moderate (4–5 criteria) or severe (≥ 6 criteria).

Test-retest reliabilities of CUD diagnoses (kappa = 0.41, 0.41) and their dimensional criteria scales (intraclass correlation coefficients ([ICC] = 0.70, 0.71) were fair to substantial in a general population sample (Grant, Goldstein, Smith, et al., 2015). Procedural validity was assessed through blind clinician re-appraisal using the semi-structured, clinician-administered Psychiatric Research Interview for Substance and Mental Disorders, DSM-5 version (PRISM-5) (Hasin, Aivadyan, Greenstein, & Grant, 2011). AUDADIS-5/PRISM-5 concordance was moderate for CUD (kappa = 0.60, 0.51) and substantial for its dimensional criteria scales (ICC = 0.79, 0.78) (Hasin, Greenstein, et al., 2015).

2.3. Other psychiatric disorders

Twelve-month DSM-5 alcohol use disorder (AUD), nicotine use disorder (NUD), and other drug use disorder (DUD) diagnoses were derived similarly to CUD diagnoses. Test-retest reliabilities were fair to substantial for these disorders (kappa = 0.40–0.87), and their associated criteria scales (ICC = 0.45–0.84) (Grant, Goldstein, Smith, et al., 2015). AUDADIS-5/PRISM-5 concordance for AUD, NUD and DUD diagnoses and corresponding criteria scales was fair to substantial (kappa = 0.36–0.66; ICCs = 0.68–0.91) (Hasin, Greenstein, et al., 2015).

DSM-5 mood disorders included major depressive disorder (MDD), persistent depression, bipolar I and bipolar II disorders. Anxiety disorders included panic, agoraphobia, social and specific phobias and generalized anxiety disorder (GAD). Posttraumatic stress disorder (PTSD), antisocial personality disorder (ASPD) and schizotypal and borderline personality disorders (PDs) were also assessed. PTSD diagnoses generally followed the DSM-5 definition, but criteria C and D more strictly required ≥ 3 positive, rather than ≥ 2 positive, criteria to be met. The stricter definition of PTSD, rather than the final DSM-5 PTSD definition, was available prior to the fielding of the NESARC-III. Reliability and validity of these diagnoses and criteria scales were fair to moderate (Grant, Grant, Goldstein, Smith, et al., 2015; Hasin, Shmulewitz et al., 2015).

2.4. Quality of life

Quality of life was measured using the 12-item Short Form Health Survey, version 2 (SF-12v2) (Gandek et al., 1998). SF-12v2 scales included mental health (feeling calm/peaceful, feeling downhearted/depressed), social functioning (accomplishing less than you would like, not doing your work/activities as careful as usual), role emotional functioning, physical/emotional problems interfering with social activities, and mental component summary. The mental component summary score was computed using all 12 SF-12v2 questions. Each SF-12v2 norm-based disability score has mean = 50, standard deviation = ± 10, and range = 0–100; lower scores indicate lower quality of life.