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Perceived barriers for cannabis cessation: Relations to cannabis use problems, withdrawal symptoms, and self-efficacy for quitting

Michael J. Zvolensky[a,b,*], Daniel J. Paulus[a], Lorra Garey[a], Kara Manning[a], Julianna B.D. Hogan[c], Julia D. Buckner[d], Andrew H. Rogers[e], R. Kathryn McHugh[f,g]

[a] University of Houston, Department of Psychology, Houston, TX, United States
[b] The University of Texas MD Anderson Cancer Center, Department of Behavioral Science, Houston, TX, United States
[c] VA HSR & D Center for Innovations in Quality, Effectiveness and Safety, Michael E. DeBakey VA Medical Center, Houston, TX, United States
[d] Louisiana State University, Baton Rouge, LS, United States
[e] The Ohio State University, Columbus, OH, United States
[f] Harvard Medical School, Boston, MA, United States
[g] McLean Hospital, Division of Alcohol and Drug Abuse, Belmont, MA, United States

HIGHLIGHTS

- No work on relations between barriers for cannabis cessation and cannabis use.
- Racially diverse sample of cannabis users from the community recruited.
- Greater perceived barriers for quitting was associated with cannabis outcomes.
- Results indicate perceived barriers may aid in understanding cannabis use processes.

ABSTRACT

Cannabis is the most widely used illicit substance in the United States. Regular cannabis use appears to be a dynamic, chronic process consisting of multiple quit attempts, periods of reduction, periods of abstinence, and periods of continual use. Cannabis-related processes, including withdrawal, problematic consequences of use, and self-efficacy for quitting each contribute to the cycle of use and, in part, are maintained and reinforced by perceived barriers for cannabis cessation. Yet, no work has examined the association between perceived barriers for cannabis cessation and clinically-relevant processes related to cannabis use. To address this gap, the current study recruited a racially diverse sample (N = 145, 63.4% Black or African American) of cannabis users from the community to test the hypothesis that greater perceived barriers for quitting cannabis was related to more cannabis use problems, more cannabis withdrawal symptoms, and lower self-efficacy for quitting cannabis. Structural equation modeling suggested that greater perceived barriers for quitting cannabis was uniquely associated with cannabis use problems (β = 0.50, 95%CI [0.39, 0.65], p < 0.001), greater withdrawal symptoms (β = 0.39, 95%CI [0.30, 0.50], p < 0.001), and lower self-efficacy for quitting (β = −0.17, 95%CI [−0.21, −0.02], p = 0.028). The results of this study indicate perceived barriers for cannabis cessation may help in better understanding an array of clinically significant cannabis use processes. Indeed, the observed pattern of findings add to current theoretical models of substance use that aim to identify unique risk processes that may maintain substance use and provide valuable information that can be used to inform treatment for cannabis users.

Cannabis is the most widely used illicit substance in the United States (Johnston, O'Malley, & Bachman, 2003), with approximately 13.5% of the population (Center for Behavioral Health Statistics and Quality, 2016) using cannabis in the past year (Hasin et al., 2015; Johnston, O'Malley, Bachman, & Schulenberg, 2005). Frequent cannabis use (weekly or daily use) is related to an increased risk of other substance abuse (Blanco et al., 2016), neurocognitive deficits (e.g., Dahlgren, Sagar, Racine, Dreman, & Gruber, 2016; Lisdahl & Price,

* Corresponding author at: The University of Houston, 126 Heyne Building, Houston, TX 77204-5502, United States.
E-mail address: mjzvolen@central.uh.edu (M.J. Zvolensky).

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2012), severe medical disease (e.g., respiratory infection; Bloom, Kaltenborn, Paoletti, Camilli, & Lebowitz, 1987), and other health problems (McDonald, Schleifer, Richards, & de Wit, 2003; Sussman, Stacy, Dent, Simon, & Johnson, 1996). Recent prospective work suggests that cannabis use disorder (CUD) is associated with more financial difficulties (e.g., loss of income, financial strain) than alcohol use disorder, and is related to economic and social problems comparable to those experienced by individuals with alcohol use disorder (Cerda et al., 2016).

Among substance use treatment admissions, cannabis is the third most prevalent drug, behind only alcohol and opioids (Substance Abuse and Mental Health Services Administration, 2016). Unfortunately, individuals attempting to quit cannabis also experience marked difficulty whether they seek professional (formal) treatment or make a quit attempt on their own (Cougle, Hakes, Macatee, Chavarria, & Zvolensky, 2015; Hall & Babor, 2000; Mewton, Slade, & Teesson, 2013). For example, cannabis users seeking treatment report several serious quit attempts (3–7 on average) before achieving abstinence (Budney, Vandrey, Hughes, Thostenson, & Bursac, 2008). In fact, only 54% of CUD outpatients achieve two or more weeks of abstinence (Steinberg et al., 2002) and among those, 71% lapse (any drug use) within six months. Of those who lapse, over 70% eventually relapse (i.e., returned to regular pre-treatment levels of cannabis use; Steinberg et al., 2002). Most persons with CUD attempt to reduce use or quit on their own without professional assistance (Cougle, Hakes, Macatee, Chavarria, & Zvolensky, 2015; Mewton, Slade, & Teesson, 2013; Stinson, Ruan, Pickering, & Grant, 2006). These attempts are characterized by short and rapid transitions between use as usual, reduction, and abstinence (Hughes, Naud, Budney, Fingar, & Callas, 2016). Ultimately, only 8% of cannabis users who attempt to quit on their own achieve 6-month abstinence (Hughes, Naud, Budney, Fingar, & Callas, 2016).

Many regular cannabis users are interested in quitting or reducing cannabis use (Zvolensky et al., In Press), yet there is limited understanding of how perceived barriers for quitting relate to cannabis use and quit behavior. Perceived barriers for quitting refers to individual differences in perceptions of cessation stressors that interfere with one's ability to engage in quitting behavior (Macnee & Talsma, 1995). Although relatively little work has evaluated perceived barriers for cannabis cessation, perceived barriers for cessation for other substances, namely tobacco use, is associated with dependence and use severity (El-Shahawy & Haddad, 2015), maladaptive outcome expectancies (Johnson, Farris, Schmidt, & Zvolensky, 2012; Peasley-Miklus, McLeish, Schmidt, & Zvolensky, 2012), severity of quit problems (Farris, Langdon, DiBello, & Zvolensky, 2015), and affective processes that impede quit success, including dysphoria (Buckner et al., 2015), and negative affect (Gregor, Zvolensky, McLeish, Bernstein, & Morissette, 2008). Critically, perceived barriers for tobacco cessation are associated with such processes as a lower motivation to quit (McKee, O'Malley, Salovey, Krishnan-Sarin, & Mazure, 2005). These data suggest the perception of barriers for cessation may be an important construct for understanding treatment engagement and outcome. Yet, past work has not examined the relation between perceived barriers for cannabis cessation and cannabis use processes. Several processes appear to maintain cannabis use. Data from ecological momentary assessment of ad-lib cannabis use indicates that withdrawal is robustly related to cannabis use (Buckner et al., 2015), even among those undergoing a cannabis cessation attempt (Buckner, Zvolensky, & Ecker, 2013). Further, lower self-efficacy to quit cannabis is related to more cannabis use and use-related problems (Blevins, Banes, Stephens, Walker, & Roffman, 2016) and more cannabis problems are related to poorer cessation outcomes (Swift & Copeland, 2012).

Together, the purpose of the present investigation was to examine the association between perceived barriers for quitting cannabis and an array of clinically relevant cannabis use constructs among a racially diverse, community-recruited sample of cannabis users. Specifically, we tested whether greater perceived barriers for quitting cannabis was related to more cannabis use problems, greater cannabis withdrawal symptoms, and less self-efficacy for quitting cannabis. In all models, we adjusted for factors that could account for the perceived barriers for cannabis cessation-criterion variable relations, including sex, education, race, income, cigarette smoking, and alcohol use.

1. Method

1.1. Procedure

Interested individuals who responded to the study advertisements were telephone screened to determine eligibility. Eligible participants were scheduled for an in-person assessment and were asked not to use cannabis prior to the assessment. Upon arrival at their in-person assessment, participants provided written informed consent and then completed self-report questionnaires. Participants were deemed ineligible if they met any of the following criteria: (a) current suicidal or homicidal ideation, (b) limited mental competency (not oriented to person, place, or time), (c) inability to give informed, voluntary, written consent to participate, (d) current treatment for cannabis use disorder or other substance use problems, (e) recent legal mandate limiting cannabis use, (f) use of cannabis explicitly for a medical disorder, or (g) pregnancy or current breastfeeding. Participants were compensated with a $20 gift card upon completion. The study protocol was approved by the University of Houston Institutional Review Board.

1.2. Participants

Participants included 145 adult cannabis users (31.0% female; M = 38.4 years, SD = 10.3) who were recruited from the Houston, Texas area through newspaper and community flyer advertisements targeting individuals interested in participating in research related to their current cannabis use and their past quit experiences. All participants had made at least one prior quit attempt. On average, participants reported smoking cannabis 4.5 times over the past week (SD = 3.2). Average age of first use was 15.5 years old (SD = 3.6 years). Participants indicated that they have been regular daily cannabis users for an average of 16.9 years (SD = 11.4). Most participants indicated they most commonly consumed cannabis in the form of a joint (55.9%); others reported most common use via a “bowl” (10.3%), bong (6.2%), “one-hitter” (2.1%), or other (25.5%). About half of participants indicated they typically smoke cannabis alone (51.0%), the other half stated a preference of smoking with two to three people (45.5%), and only 2.8% reported smoking cannabis with a group of more than three people.

In terms of other substance use, 72.4% of the sample identified as a current or past tobacco smoker, with an average of 10.4 cigarettes per day (SD = 10.3). The average score on the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De la Fuente, & Grant, 1993) was 7.2 (SD = 7.3). Approximately one third (34.5%) reported hazardous drinking (scores of 8 or greater [7 or greater for females]) per the AUDIT (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001).

A majority of the participants (63.4%) identified as Black or African American, 23.4% identified as White, 0.7% as Native American, and 11.0% as “other”; 1.4% did not specify race. Additionally, 17.2% identified as Hispanic or Latino/a. A majority (65.5%) reported being single, with 11.7% living with a partner, 11.0% divorced, 6.2% married, 3.4% separated, and 2.1% widowed. Regarding education, 9.0% reported less than high school education with 26.2% completing high school, 46.9% with partial college, 11.0% graduating college, and 6.9% completing graduate school. The sample was generally low income with 21.4% reporting less than $5000 of income, 12.4% with $5000 to $9999, 18.6% with $10,000 to $14,999, 14.5% with $15,000 to $24,999, 15.2% with $25,000 to $34,999, 11.7% with $35,000 to