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Marijuana Use among Young Adults: Who Quits and Why?

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Abstract

Objective: In this study, we examined: (1) differences among never, current, and former young adult marijuana users; and (2) reasons for use and cessation.

Methods: We conducted interviews with 57 young adults (including 46 marijuana users) enrolled in a longitudinal study of 3418 young adults and a survey in this cohort (N = 2866). Participants reporting former but not current use on the survey (N = 607) completed the Reasons for Marijuana Cessation section.

Results: Interview data indicated reasons for initiating (or not initiating) use, continued use, and quitting. The Reasons for Marijuana Cessation scale included 2 factors: (1) Instrumentality and 2) Social/Legal reasons.

Conclusions: These findings might inform theoretical frameworks upon which marijuana cessation occurs and direct future intervention studies.

Keywords

substance use; marijuana use; marijuana cessation; qualitative research; marijuana use assessment

Marijuana is the most commonly used federally illicit drug in the United States,¹ and national survey data show an increasing prevalence of marijuana use.^{1,2} This trend in increased marijuana use has coincided with increased decriminalization and legalization of marijuana use. Since 2012, at least 8 states and the District of Columbia have legalized recreational marijuana use for adults (≥ 21 years old).³ In addition, some 27 states have

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Human Subjects Approval Statement

Project DECOY was approved by the Institutional Review Boards of Emory University and ICF International, as well as those of all participating universities and colleges.

Conflict of Interest Declaration

The authors declare no conflicts of interest.

medical marijuana use and/or decriminalization laws.⁴ Thus, marijuana legalization is expected to increase.

The health effects of marijuana are widely debated.^{5–11} Chronic use in adults is associated with cognitive impairment, chronic bronchitis, respiratory irritation, and addiction, as well as earlier onset of psychotic disorders (eg, schizophrenia) in individuals who are prone to psychosis.^{6,7} In young marijuana users, certain marijuana use trajectories can affect academic preparedness^{12,13} as well as health outcomes in later life.^{14–16} Moreover, some personality characteristics (eg, anti-social behavior, novelty-seeking) may make certain users more prone to negative health outcomes after periods of extended use.^{17–20} Adult marijuana users have been shown to have a significantly higher prevalence of tobacco use than nonusers.^{21–25} Dual and concurrent use may increase the risks of nicotine dependence²⁶ and marijuana dependence.^{24,26}

A particularly high-risk group for marijuana use is young adults (aged 18 to 24), with an estimated 6.8 million or 19.6% of this age group reporting current marijuana use.²⁷ Research examining marijuana use in college students has documented differing trajectories of marijuana use, including infrequent or occasional users, those who decrease their use during college, and those who increase their use throughout the college years.^{28,29} Young adults' self-reported reasons for marijuana use are varied,^{30,31} including experimentation, relaxation, boredom, conformity, as a coping mechanism, and for the high, the latter 2 reasons being associated with marijuana use later in life and related poor health outcomes.^{30,31} Many young adults perceive few harmful health effects associated with marijuana,^{32,33} a belief that both influences³³ and is influenced by³⁴ increasing social acceptability.

Despite what is known about reasons for marijuana use in young adults, less is known about who quits using and why. Prior research³⁵ documenting distinct trajectories of marijuana use found that low self-control, more externalizing behavior, greater sensation-seeking, and more internalizing behavior were associated with being quitters or decreasers versus non-users or occasional users. In addition, low self-control, more externalizing behavior, and greater sensation-seeking were associated with being a chronic user as opposed to being a quitter or decreaser. Those more likely to quit using also include those who only use marijuana when socializing (as opposed to those who use it to influence their mood or psychological state),^{36,37} while marijuana users also using tobacco are less likely to quit using marijuana.^{25,38} Another major influence is social roles. One study examining marijuana use trajectories during young adulthood found that those who got married and had children were more likely to quit or decrease marijuana use relative to chronic users.³⁹ Other research has indicated that women who become pregnant or wish to start a family are more likely to cease the use of marijuana.^{37,40} Documented reasons that adults quit using marijuana include avoidance of the undesirable image it projects and limited social acceptability.^{41–43} In addition to these reasons, older adults also tend to be more motivated by health concerns.^{41,44}

Unfortunately, few measures have been developed to assess reasons for quitting marijuana. The Marijuana Quit Questionnaire is a previously developed 176-item questionnaire that has documented that self-image, self-control, health concerns, interpersonal relationship

concerns, legal concerns, social acceptability concerns, and self-efficacy are important dimensions for cessation.⁴⁴ However, this tool is cumbersome and was developed for the broader range of adult marijuana users.

Given the differing culture currently surrounding marijuana use in different generations, targeted exploration regarding who in the young adult population is likely to quit using marijuana and why young adult marijuana users may choose to quit marijuana is needed. These data are critical, as individuals' reasons for using and wanting to stop using marijuana should inform interventions. The current study draws from the existing literature regarding motives for marijuana cessation⁴⁴ as well as Social Cognitive Theory,^{45,46} which has been broadly applied to substance use literature. In particular, we considered outcome expectancies of marijuana use and cessation, given that this is a central component of Social Cognitive Theory.^{45,46} We used a sequential exploratory mixed-methods design to: (1) examine differences among never, current, and former marijuana users in terms of sociodemographic, other substance use, and mental health, as well as their reasons for initiating (or not initiating) marijuana use, continued use, and/or cessation; and (2) develop a scale assessing reasons for marijuana use cessation among young adult marijuana users.

METHODS

The parent study, Project DECOY (**D**ocumenting **E**xperiences with **C**igarettes and **O**ther Tobacco in **Y**oung Adults) is a 2-year, 6-wave longitudinal cohort study that involves 3418 racially/ethnically diverse students (ages 18 to 25) from 7 colleges and universities in Georgia, where medicinal marijuana use was legalized in 2015. Schools are located in both rural and urban settings and include 2 public universities/colleges, 2 private universities, 2 community/technical colleges, and one historically black university. Data collection began in fall 2014 and consisted of self-report assessments via an online survey every 4 months for 2 years (during fall, spring, and summer).

Detailed information on sampling and recruitment are described elsewhere⁴⁷ and briefly summarized here. The registrar's office from each campus provided e-mail addresses for English-speaking students ages 18–25. We randomly selected 3000 email addresses from each of the 3 largest campuses and emailed a census of students at the 4 campuses with fewer than 3000 students. Response rates at the campuses ranged from 12.0% to 59.4%. The overall response rate of 22.9% ($N = 3574/15,607$), albeit low, was obtained over a short time frame (24 hours at the private schools to 7 days at the technical colleges) and met the sampling quota targets.⁴⁷ Our intent was to enroll participants who were engaged in email and were potentially more likely to be retained in the subsequent waves of the study. The sociodemographic characteristics of the baseline sample were largely reflective of the student bodies of the campuses included in this study; however, the sample was disproportionately female.⁴⁷ Current analyses draw from 2 data sources, described below (see also Figure 1).

Study 1: Qualitative Interviews

Participants.—In May 2015, we recruited via email, users of various tobacco products (cigarettes, little cigar/cigarillos [LCCs], smokeless tobacco, e-cigarettes, hookah) identified

at Wave 2 of Project DECOY to participate in semi-structured interviews. We purposively recruited current and lifetime marijuana users within this sampling frame. Of the 99 participants recruited, 80 (80.8%) consented, and 60 (60.6%) participated in this portion of the study. Three refused questions regarding their marijuana use and were excluded from the current analyses. A total of 46 (76.7%) of the 57 reported having experience using marijuana. Specifically, 26 (43.3%) were current marijuana co-users, and an additional 20 were former (lifetime but not current) marijuana users.

Qualitative semi-structured interviews.—Telephone-based interviews that lasted about 30 minutes were facilitated by 3 female Master of Public Health (MPH) graduate students trained in qualitative data collection. Participants provided verbal consent at the start and were compensated with a \$40 Amazon gift card. The interviews were audio-recorded for subsequent coding. Current analyses focused on marijuana use topics, specifically responses to questions explicitly asking participants to report their reasons for: (1) initiating or not initiating marijuana use; (2) continuing to use marijuana; and (3) quitting or potentially quitting using marijuana in the future.

Data analysis.—To address our first aim, in part, qualitative data were analyzed using MAXQDA 12 (Berlin, Germany: <http://www.maxqda.com/>). Two members of the authorship team (trained MPH-level study personnel) independently reviewed all transcripts, which they then used to generate preliminary codes using deductive and inductive coding methods. Primary (ie, major topics) and secondary codes (ie, recurrent themes within primary topics) were established. Then, each transcript was fully and independently analyzed by 2 additional MPH graduate students and coded using the preliminary codebook. All new codes that arose during coding were added to the codebook and applied to all ads. Codes were compared, and consensus for coding was reached (Kappa = 93.3%). Final codes were used to identify themes, and relevant and representative quotes were chosen. Descriptive statistics were conducted to characterize the interview sample using SPSS 23.0.

Study 2: Examining Difference in Use Status and Scale Development

Participants.—Scale development involved data from the Wave 3 survey, which was conducted in August 2015 (after the semi-structured interviews) (retention rate = 83.9%, N = 2866/3418). The sample included 1759 (61.4%) never, 500 (17.4%) current, and 607 (21.2%) former marijuana users.

Measures.—Data collected at Wave 3 included a range of psychosocial and substance use variables. Below we outline our primary measure of focus – the newly developed Reasons for Marijuana Use Cessation Scale – and the correlates of interest.

To assess marijuana use, participants were first asked to report the number of days they used marijuana in the past 4 months (to cover the duration of time between each wave of assessment).

We also measured participants' reasons for marijuana use cessation. After reviewing the literature^{25,36–38,40–44} and the present qualitative findings, a panel of experts that included the current author and other colleagues developed a list of 15 potential reasons for marijuana

cessation. Participants reporting lifetime, but not past 4-month use of marijuana were instructed: “You indicated that you have used marijuana at least once in your lifetime but have not used marijuana in the past 4 months. Below are some reasons for why you might have quit using marijuana. Please indicate how true each of these reasons are for you using the scale below” (response options of 0 = not at all true to 6 = extremely true).

For social factors, we asked if a parent currently used marijuana³² and about the number of participants’ 5 closest friends who are marijuana users.³² These items were operationalized as dichotomous variables (eg, at least one friend used versus none).

We also asked about perceptions of marijuana – specifically addictiveness, harmfulness of use, and social acceptability – on a Likert scale of 1 = not at all to 7 = extremely.³²

For other substance use, participants were asked to report the number of days they used each of the following products in the past 4 months (to cover the duration of time between each wave of assessment): cigarettes, LCCs, smokeless tobacco, e-cigarettes, hookah, and alcohol.⁴⁸ Those who reported any use in the past 4 months were then asked to report the number of days they used the respective product in the past 30 days. Given the difference in distributions of use, alcohol use was used as a continuous variable, while tobacco use was dichotomized as current (past 30-day) users versus nonusers.

We assessed depressive symptoms using the Patient Health Questionnaire – 9-item (PHQ-9).⁴⁹ We developed a continuous variable resulting from a sum of the items. Cronbach’s alpha for the current study was 0.86.

Data analysis.—To address our first study aim quantitatively, in part, first, we examined differences in socio-demographics, other substance use, and psychosocial factors among never, current, and former marijuana users using analysis of variance (ANOVA) and chi-square tests. Then, we used multinomial logistic regression examining significant correlates of being a never, current, or former marijuana user, using former marijuana users as the referent category. To address our second aim, we conducted an exploratory factor analysis of the Reasons for Marijuana Cessation items using Promax rotation. We used eigenvalues of greater than one as the criterion for number of factors. Then, we examined the content and internal consistency of the factors. Finally, we conducted bivariate analyses examining subscale scores in relation to these correlates of interest to examine convergent and discriminant validity. Analyses were conducted with SPSS 23.0, and alpha was set at .05.

RESULTS

Study 1: Qualitative Interviews

Participant characteristics.—Table 1 presents data regarding participant characteristics for the qualitative interviews. Table 2 summarizes major qualitative themes and subthemes, as well as representative sample quotes for each theme.

Factors influencing marijuana use initiation.—Regarding factors impacting marijuana use initiation, participants expressed various reasons for trying marijuana or

initiating use. Several decided to try marijuana out of boredom or curiosity, while others were persuaded by social influences, particularly friends or siblings. Relatedly, alcohol use and availability of marijuana through one's social network also influenced initiation. A few reported trying marijuana while in a period of rebellion against their parents. Others reported trying it for the first time as part of gaining a sense of independence from their parents after leaving home and starting college.

Reasons for marijuana use.—One major theme regarding reasons for marijuana use was the use of marijuana to achieve a desired psychological effect. Stress relief and relaxation were most commonly reported, followed by assisting with focus or concentration. Many also reported using marijuana to socialize with others, usually with friends, and to facilitate relaxation and bonding.

Perceptions of marijuana.—Regarding the *physical health effects* of marijuana, most participants believed that there were no negative effects or scientific evidence indicating negative health risks. Additionally, many believed that marijuana was a natural substance, therefore lacking negative health consequences. Several indicated that they believed there might be positive health effects of using marijuana, citing marijuana's medicinal or therapeutic properties. A few also reported that overdosing on marijuana is not a danger, thus indicating its safety. Only a few participants noted negative concerns about marijuana specific to inhaling marijuana smoke. In terms of the *psychological effects*, several indicated concern about the effects that marijuana use has on brain functioning and personality. However, several also indicated a lack of concern about the effects of marijuana use on behavior relative to other types of drugs. Regarding *addictiveness*, a few believed that marijuana was highly addictive, but most discounted marijuana's addictive properties. Some suggested that marijuana could be mentally addictive or habitual, but they did not perceive it to be physically addictive (ie, no withdrawal or cravings).

Reasons/potential reasons for cessation of marijuana use.—Participants were asked why they chose to quit using marijuana or, if they had not quit, why they might plan to quit in the future. The most commonly noted reasons for cessation of marijuana use included use-related health concerns and social pressures to quit, particularly from parents. The illegality of marijuana was discussed as a significant reason for cessation by several participants. Maturation and life transitions also were reported as reasons to quit using marijuana by many people. Many people discussed transitioning to new social groups, graduating from college, focusing on their careers, or building families as reasons to quit. Several participants indicated no intent to quit using marijuana.

Study 2: Examining Difference in Use Status and Scale Development

Correlates of never, current, and former marijuana use.—The sample was an average age of 20.53 (SD = 1.93), 35.6% male, 63.6% white, 22.5% black, and 7.6% Hispanic (Table 3). It included 11.8% cigarette users, 9.6% LCC users, 3.4% smokeless tobacco users, 10.2% e-cigarette users, and 11.7% hookah users. Average number of days of alcohol use was 3.83 (SD = 5.62).

In bivariate analyses, differences in marijuana use status were found among the never, current, and former users in age ($p < .001$), race ($p = .002$), type of school attended ($p < .001$), and use of each tobacco product ($p < .001$), and level of alcohol use ($p < .001$; Table 3). In the multinomial logistic regression examining differences in never, current, and former users (not shown in table), correlates of being a former versus never marijuana user included being older ($OR = 1.14$, $p < .001$), currently using cigarettes ($OR = 1.92$, $p < .001$), LCCs ($OR = 1.83$, $p = .001$), e-cigarettes ($OR = 1.49$, $p = .027$), or hookah ($OR = 1.63$, $p = .002$), and higher levels of alcohol use ($OR = 1.08$, $p < .001$). Correlates of being a former versus current marijuana user included being older ($OR = 1.20$, $p < .001$), not currently using cigarettes ($OR = 0.63$, $p = .009$) or LCCs ($OR = .70$, $p = .048$), and lower levels of alcohol use ($OR = 0.95$, $p < .001$; Nagelkerke $R^2 = .212$).

Factor analysis: reasons for cessation.—The sample of former marijuana users was an average age of 21.05 ($SD = 1.98$), 33.4% male, 64.4% white, 24.2% black, and 7.6% Hispanic (Table 3). Factor analysis identified 2 factors (Table 4): (1) Instrumentality, indicating the undesirable effects of marijuana use (eg, the buzz, the smell); and (2) Social/Legal reasons, indicating concerns about image, social influences, and legal ramifications of marijuana use. Two items were deleted (*I think it is weird or socially unacceptable; I just don't think about it*), as these items did not fit with the previously described factors or assess specific reasons for cessation. The 2 factors largely mirrored the reasons most prominent in the qualitative interviews and accounted for 61.2% of the variance (component 1: 51.9%, 2: 9.3%). Cronbach's alphas for each subscale were .93 and .75, respectively. The correlation between the 2 subscales was .67 ($p < .001$).

Convergent and discriminant validity.—Table 5 provides data regarding convergent and discriminant validity. Scores on the Instrumentality subscale were positively associated with perceived addictiveness ($p = .002$) and harmfulness ($p < .001$) of marijuana and negatively associated with social acceptability of marijuana use ($p = .045$) and use of cigarettes ($p = .007$), LCCs ($p < .001$), and hookah ($p = .011$). Scores on the Social/Legal sub-scale were positively associated with perceived addictiveness ($p = .020$) and harmfulness ($p < .001$) of marijuana and negatively associated with friend use of marijuana ($p < .001$), social acceptability of marijuana use ($p = .001$), and use of LCCs ($p = .007$), smokeless tobacco ($p = .015$), e-cigarettes ($p = .013$), and hookah ($p = .032$).

DISCUSSION

The current study is one of the few studies that used a qualitative approach to examine reasons for marijuana initiation, use, and cessation and is among the first aimed at quantitatively assessing a range of reasons for cessation, specifically among young adults. Our qualitative findings informed our scale development efforts, and the new measure largely reflects the literature that informed our conceptual framework,^{50–60} as well as the constructs and associations involved in the Social Cognitive Theory.^{45,46} The resulting scale may be useful for understanding how and why young adults quit (or want to quit) using marijuana. Assessing and understanding these reasons is critical in addressing this emerging public health issue, particularly among young adults.

In terms of identifying correlates of being a former marijuana user, we found that former users were older than both never and current users, which may reflect a trajectory wherein an increased number of young adults will have used or experimented with marijuana over the course of their young adulthood, but many will either only experiment or transition out of use.^{28,29,27} In addition, former users were more likely than never users to use cigarettes, LCCs, e-cigarettes, or hookah and to more frequently use alcohol. On the other hand, former users were less likely than current users to be currently using cigarettes or LCCs and used alcohol less frequently. These findings suggest that current marijuana users demonstrate the highest substance use risk, which is intuitive given that use of different substances commonly clusters, particularly in young adults.^{56,58,61}

Our qualitative findings indicated a range of reasons for initiating marijuana use (eg, curiosity, boredom, social influence), but most who continued using did so to achieve the psychological effects (eg, relaxation) and due to social influence or in social settings. Reasons to quit using marijuana included the legal implications, social pressures to quit, and life transitions, which were reasons reflected in both the qualitative and quantitative findings. Many of these phenomena (excluding the legal implications) have been documented previously, not just among marijuana users,⁶² but also tobacco users,^{63,64} indicating that many of these factors may operate similarly across these substances. Quitting marijuana due to legal implications may be reflective of our study's geographic location; recreational marijuana use is currently still illegal in the state of Georgia. This reason may need further comparative study with young adults in other states with differing policy contexts.

Legal implications also were reflected both in the qualitative results and in the factor analysis of the developed scale, paired with social reasons as one factor. Within this factor, the lack of marijuana use within participants' friend groups and marijuana use not coming up in social situations correspond with the literature indicating that users who only do so in social situations are more likely to quit using before those who use it for the effect.^{36,37} Relatedly, the other factor indicated in our developed scale regarded instrumentality (eg, disliking the taste, feeling it is unhealthy). Participants who quit using marijuana for these reasons may have felt that the negative effects of use outweighed the achieved high or other desired effects; these reasons could be utilized in cessation interventions or education campaigns as reasons to quit.

The current study has implications for research and practice. Further research is needed to improve understanding of the reasons for initiation, use, and cessation in young adults to design theory-based interventions that prevent or mitigate the risks associated with marijuana use. In particular, it is important to note the different use patterns over time in relation to different reasons for using and quitting marijuana to inform interventions.^{18,65–68} Overall, the high prevalence of marijuana use in young adults² calls for increased attention to potential reasons for cessation to develop successful interventions and public health campaigns to reduce the harms of marijuana use in young people.

Limitations

Despite this study's contributions to the literature, several important limitations must be noted. First, findings from the samples involved in these analyses are not intended to be generalizable, but rather to inform future generalizable studies.⁶⁹ Future studies will need to assess reasons for cessation in a broad scope of populations of various demographics. Second, our scale items may not reflect all potential reasons for marijuana cessation; however, the items developed and included here were drawn from the literature related to reasons for marijuana cessation and from our qualitative findings. These analyses are also limited by the self-report nature of the assessments. For the qualitative phase of the study, the results are indicative of the opinions of participants who were willing and able to discuss these topics with the researchers. Finally, the cross-sectional design does not allow us to draw causal attributions or determine intra-individual trajectories of marijuana use over time.

IMPLICATIONS FOR HEALTH BEHAVIOR OR POLICY

Our findings can be used to inform future research aimed at further expanding on or replicating the validity of this tool for assessing reasons for marijuana cessation. Furthermore, these mixed-methods findings might inform theoretical frameworks regarding socio-contextual factors associated with cessation among young adult marijuana users. Given the changing cultural and political climate surrounding marijuana use, practitioners and policymakers should use these findings and other thorough, comprehensive research about marijuana use to inform health education campaigns and interventions about the dangers of marijuana use.

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References

1. Center for Behavioral Health Statistics and Quality. Behavioral Health Trends in the United States: Results from the 2013 National Survey on Drug Use and Health (Summary of National Findings, NSDUH Series H-48, HHS Publication No. (SMA) 14-4863). Rockville, MD: Substance Abuse and Mental Health Services Administration; 2014.
2. Center for Behavioral Health Statistics and Quality. Behavioral Health Trends in the United States: Results from the 2012 National Survey on Drug Use and Health (Summary of National Findings, NSDUH Series H-46, HHS Publication No. (SMA) 13-4795). Rockville, MD: Substance Abuse and Mental Health Services Administration; 2013.
3. Underhill W Ballot measures: citizen legislators were the stars of election 2016. 2016 Available at: <http://www.ncsl.org/bookstore/state-legislatures-magazine/with-many-ballot-measures-citizens-were-the-stars-of-election-2016.aspx>. Accessed April 15, 2018.
4. National Conference of State Legislatures. State medical marijuana laws. 2016 Available at: <http://www.ncsl.org/research/health/state-medical-marijuana-laws.aspx>. Accessed April 15, 2018.
5. Hall W, Degenhardt L. The adverse health effects of chronic cannabis use. *Drug Test Anal.* 2014;6(1-2):39-45. [PubMed: 23836598]

6. Volkow ND, Baler RD, Compton WM, Weiss SRB. Adverse health effects of marijuana use. *N Engl J Med*. 2014;370(23):2219–2227. [PubMed: 24897085]
7. Collins C Adverse health effects of marijuana use. *N Engl J Med*. 2014;371(9):879.
8. Thompson GR, Tuscano JM. Adverse health effects of marijuana use. *N Engl J Med*. 2014;371(9):878–879.
9. Volkow ND, Compton WM, Weiss SRB. Adverse health effects of marijuana use. *N Engl J Med*. 2014;371(9):879.
10. Wolff V, Rouyer O, Geny B. Adverse health effects of marijuana use. *N Engl J Med*. 2014;371(9):878.
11. Hall W What has research over the past two decades revealed about the adverse health effects of recreational cannabis use? *Addiction*. 2015;110(1):19–35.
12. Suerken CK, Reboussin BA, Egan KL, et al. Marijuana use trajectories and academic outcomes among college students. *Drug Alcohol Depend*. 2016;162:137–145. [PubMed: 27020322]
13. D'Amico EJ, Tucker JS, Miles JNV, et al. Alcohol and marijuana use trajectories in a diverse longitudinal sample of adolescents: examining use patterns from age 11 to 17 years. *Addiction*. 2016;111(10):1825–1835. [PubMed: 27130360]
14. Brook JS, Zhang C, Brook DW. Developmental trajectories of marijuana use from adolescence to adulthood: personal predictors. *Arch Pediatr Adolesc Med*. 2011;165(1):55–60. [PubMed: 21199981]
15. Caldeira KM, O'Grady KE, Vincent KB, Arria AM. Marijuana use trajectories during the post-college transition: health outcomes in young adulthood. *Drug Alcohol Depend*. 2012;125(3):267–275. [PubMed: 22464050]
16. Arria AM, Caldeira KM, Bugbee BA, et al. Marijuana use trajectories during college predict health outcomes nine years post-matriculation. *Drug Alcohol Depend*. 2016;159:158–165. [PubMed: 26778758]
17. van den Bree MBM, Pickworth WB. Risk factors predicting changes in marijuana involvement in teenagers. *Arch Gen Psychiatry*. 2005;62(3):311–319. [PubMed: 15753244]
18. Brook JS, Zhang C, Brook DW. Antisocial behavior at age 37: developmental trajectories of marijuana use extending from adolescence to adulthood. *Am J Addict*. 2011;20(6):509–515. [PubMed: 21999495]
19. Passarotti AM, Crane NA, Hedeker D, Mermelstein RJ. Longitudinal trajectories of marijuana use from adolescence to young adulthood. *Addict Behav*. 2015;45:301–308. [PubMed: 25792233]
20. Brook JS, Zhang C, Leukefeld CG, Brook DW. Marijuana use from adolescence to adulthood: developmental trajectories and their outcomes. *Soc Psychiatry Psychiatr Epidemiol*. 2016;51(10):1405–1415. [PubMed: 27168181]
21. Richter KP, Kaur H, Resnicow K, et al. Cigarette smoking among marijuana users in the United States. *Subst Abus*. 2004;25(2):35–43.
22. Ramo DE, Liu H, Prochaska JJ. Tobacco and marijuana use among adolescents and young adults: a systematic review of their co-use. *Clin Psychol Rev*. 2012;32(2):105–121. [PubMed: 22245559]
23. Agrawal A, Budney AJ, Lynskey MT. The co-occurring use and misuse of cannabis and tobacco: a review. *Addiction*. 2012;107(7):1221–1233. [PubMed: 22300456]
24. Peters EN, Budney AJ, Carroll KM. Clinical correlates of co-occurring cannabis and tobacco use: a systematic review. *Addiction*. 2012;107(8):1404–1417. [PubMed: 22340422]
25. Schauer GL, Berg CJ, Kegler MC, et al. Assessing the overlap between tobacco and marijuana: Trends in patterns of co-use of tobacco and marijuana in adults from 2003–2012. *Addict Behav*. 2015;49:26–32. [PubMed: 26036666]
26. Ream GL, Benoit E, Johnson BD, Dunlap E. Smoking tobacco along with marijuana increases symptoms of cannabis dependence. *Drug Alcohol Depend*. 2008;95(3):199–208. [PubMed: 18339491]
27. Center for Behavioral Health Statistics and Quality. Behavioral Health Trends in the United States: Results from the 2014 National Survey on Drug Use and Health (Summary of National Findings, NSDUH Series H-50, HHS Publication No. (SMA) 13–4795). Rockville, MD: Substance Abuse and Mental Health Services Administration; 2015.

28. Derefinko KJ, Charnigo RJ, Peters JR, et al. Substance use trajectories from early adolescence through the transition to college. *J Stud Alcohol Drugs*. 2016;77(6):924–935. [PubMed: 27797694]
29. Suerken CK, Reboussin BA, Egan KL, et al. Marijuana use trajectories and academic outcomes among college students. *Drug Alcohol Depend*. 2016;162:137–145. [PubMed: 27020322]
30. Lee CM, Neighbors C, Woods BA. Marijuana motives: young adults' reasons for using marijuana. *Addict Behav*. 2007;32(7):1384–1394. [PubMed: 17097817]
31. Patrick ME, Bray BC, Berglund PA. Reasons for marijuana use among young adults and long-term associations with marijuana use and problems. *J Stud Alcohol Drugs*. 2016;77(6):881–888. [PubMed: 27797689]
32. Berg CJ, Stratton E, Schauer GL, et al. Perceived harm, addictiveness, and social acceptability of tobacco products and marijuana among young adults: marijuana, hookah, and electronic cigarettes win. *Subst Use Misuse*. 2015;50(1):79–89. [PubMed: 25268294]
33. Cohn AM, Johnson AL, Rose SW, et al. Support for marijuana legalization and predictors of intentions to use marijuana more often in response to legalization among U.S. young adults. *Subst Use Misuse*. 2017;52(2):203–213. [PubMed: 27976988]
34. Hasin DS, Wall M, Keyes KM, et al. Medical marijuana laws and adolescent marijuana use in the USA from 1991 to 2014: results from annual, repeated cross-sectional surveys. *Lancet Psychiatry*. 2015;2(7):601–608. [PubMed: 26303557]
35. Brook JS, Zhang C, Brook DW. Developmental trajectories of marijuana use from adolescence to adulthood: personal predictors. *Arch Pediatr Adolesc Med*. 2011;165(1):55–60. [PubMed: 21199981]
36. Kandel DB, Raveis VH. Cessation of illicit drug use in young adulthood. *Arch Gen Psychiatry*. 1989;46(2):109–116. [PubMed: 2913970]
37. Chen K, Kandel DB. Predictors of cessation of marijuana use: an event history analysis. *Drug Alcohol Depend*. 1998;50(2):109–121. [PubMed: 9649962]
38. Schauer GL, Berg CJ, Kegler MC, et al. Differences in tobacco product use among past month adult marijuana users and nonusers: findings from the 2003–2012 National Survey on Drug Use and Health. *Nicotine Tob Res*. 2016;18(3):281–288. [PubMed: 26009578]
39. Schulenberg JE, Merline AC, Johnston LD, et al. Trajectories of marijuana use during the transition to adulthood: the big picture based on national panel data. *J Drug Issues*. 2005;35(2):255–279. [PubMed: 16534532]
40. De Genna NM, Cornelius MD, Goldschmidt L, Day NL. Maternal age and trajectories of cannabis use. *Drug Alcohol Depend*. 2015;156:199–206. [PubMed: 26429727]
41. Copersino ML, Boyd SJ, Tashkin DP, et al. Quitting among non-treatment-seeking marijuana users: reasons and changes in other substance use. *Am J Addict*. 2006;15(4):297–302. [PubMed: 16867925]
42. Chauchard E, Septfons A, Chabrol H. Motivations for cannabis cessation, coping and adaptation strategies, and perceived benefits: impact on cannabis use relapse and abstinence. *Encephale*. 2013;39(6):385–392. [PubMed: 23928064]
43. Cooper K, Chatters R, Kaltenthaler E, Wong R. Psychological and psychosocial interventions for cannabis cessation in adults: a systematic review short report. *Health Technol Assess*. 2015;19(56):1–130.
44. Chauchard E, Levin KH, Copersino ML, et al. Motivations to quit cannabis use in an adult non-treatment sample: are they related to relapse? *Addict Behav*. 2013;38(9):2422–2427. [PubMed: 23685328]
45. Bandura A Health promotion from the perspective of social cognitive theory. *Psychol Health*. 1998;13:623–649.
46. Bandura A Health promotion by social cognitive means. *Health Educ Behav*. 2004;31(2):143–164. [PubMed: 15090118]
47. Berg CJ, Haardörfer R, Lewis M, et al. DECOY: Documenting experiences with cigarettes and other tobacco in young adults. *Am J Health Behav*. 2016;40(3):310–321. [PubMed: 27103410]
48. US Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System, 2014. Atlanta, GA; 2014 Available at: <https://www.cdc.gov/brfss/index.html>. Accessed April 15, 2018.

49. Kroenke K, Spitzer RL, Williams JBW. The Patient Health Questionnaire-2: validity of a two-item depression screener. *Med Care*. 2003;41(11):1284–1292. [PubMed: 14583691]
50. Piko BF, Wills TA, Walker C. Motives for smoking and drinking: country and gender differences in samples of Hungarian and US high school students. *Addict Behav*. 2007;32:2087–2098. [PubMed: 17317024]
51. Wills TA, Sandy JM, Shinar O. Cloninger's constructs related to substance use level and problems in late adolescence: a mediational model based on self-control and coping motives. *Exp Clin Psychopharmacol*. 1999;7(2):122–134. [PubMed: 10340152]
52. Simons J, Correia CJ, Carey KB. A comparison of motives for marijuana and alcohol use among experienced users. *Addict Behav*. 2000;25(1):153–160. [PubMed: 10708331]
53. Schauer GL, Hall C, Berg CJ, et al. Differences in the relationship of marijuana and tobacco by frequency of use: a qualitative study with young adults. *Psychol Addict Behav*. 2016;30(3):406–414. [PubMed: 27099958]
54. Ramo DE, Liu H, Prochaska JJ. Validity and reliability of the nicotine and marijuana interaction expectancy (NAMIE) questionnaire. *Drug Alcohol Depend*. 2013;131(1–2):166–170. [PubMed: 23339969]
55. Schauer GL, Berg CJ, Kegler MC, et al. Assessing the overlap between tobacco and marijuana: trends in patterns of co-use of tobacco and marijuana in adults from 2003–2012. *Addict Behav*. 2015;49:26–32. [PubMed: 26036666]
56. Haardörfer R, Berg CJ, Lewis M, et al. Poly tobacco, marijuana, and alcohol use patterns in college students: a latent class analysis. *Addict Behav*. 2016;59:58–64. [PubMed: 27074202]
57. Sutfin EL, Reboussin BA, McCoy TP, Wolfson M. Are college student smokers really a homogeneous group? a latent class analysis of college student smokers. *Nicotine Tob Res*. 2009;11(4):444–454. [PubMed: 19264866]
58. Cohn A, Villanti A, Richardson A, et al. The association between alcohol, marijuana use, and new and emerging tobacco products in a young adult population. *Addict Behav*. 2015;48:79–88. [PubMed: 26042613]
59. Rath JM, Villanti AC, Abrams DB, Vallone DM. Patterns of tobacco use and dual use in US young adults: the missing link between youth prevention and adult cessation. *J Environ Public Health*. 2012;2012:679134. [PubMed: 22666279]
60. Richardson A, Williams V, Rath J, et al. The next generation of users: prevalence and longitudinal patterns of tobacco use among US young adults. *Am J Public Health*. 2014;104(8):1429–1436. [PubMed: 24922152]
61. Holmes LM, Popova L, Ling PM. State of transition: marijuana use among young adults in the San Francisco Bay area. *Prev Med*. 2016;90:11–16. [PubMed: 27346757]
62. Simons J, Correia CJ, Carey KB. A comparison of motives for marijuana and alcohol use among experienced users. *Addict Behav*. 2000;25(1):153–160. [PubMed: 10708331]
63. Wills TA, Sandy JM, Shinar O. Cloninger's constructs related to substance use level and problems in late adolescence: a mediational model based on self-control and coping motives. *Exp Clin Psychopharmacol*. 1999;7(2):122–134. [PubMed: 10340152]
64. Piko BF, Wills TA, Walker C. Motives for smoking and drinking: country and gender differences in samples of Hungarian and US high school students. *Addict Behav*. 2007;32(10):2087–2098. [PubMed: 17317024]
65. Swift W, Coffey C, Carlin JB, et al. Adolescent cannabis users at 24 years: trajectories to regular weekly use and dependence in young adulthood. *Addiction*. 2008;103(8):1361–1370. [PubMed: 18855826]
66. Swift W, Coffey C, Carlin JB, et al. Are adolescents who moderate their cannabis use at lower risk of later regular and dependent cannabis use? *Addiction*. 2009;104(5):806–814. [PubMed: 19344439]
67. Roussell A, Omori M. Normalising desistance: contextualising marijuana and cocaine use careers in young adults. *Sociol Health Illn*. 2016;38(6):916–938. [PubMed: 27037510]
68. Derefinko KJ, Charnigo RJ, Peters JR, et al. Substance use trajectories from early adolescence through the transition to college. *J Stud Alcohol Drugs*. 2016;77(6):924–935. [PubMed: 27797694]

69. Hennink MM, Hutter I, Bailey A. Qualitative Research Methods. London, UK: Sage; 2011.

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Figure 1.
Participant Flowchart

Sociodemographic and Substance Use Characteristics of Semi-structured Interview Participants (Study 1)

Table 1

Variable	Never Users N = 11	Current Users N = 26	Former Users N = 20
Age (SD)	20.8 (1.9)	20.9 (2.0)	21.1 (2.2)
Sex (%)			
Female	6 (54.5)	16 (61.5)	10 (50.0)
Male	5 (45.4)	10 (38.5)	9 (45.0)
Race (%)			
Black	3 (27.3)	9 (34.6)	7 (35.0)
White	8 (72.7)	17 (65.4)	13 (65.0)
Other	0 (0.0)	0 (0.0)	0 (0.0)
Hispanic (%)	0 (0.0)	0 (0.0)	0 (0.0)
School Type (%)			
Public university	6 (54.5)	7 (26.9)	5 (25.0)
Private college/university	0 (0.0)	6 (23.1)	4 (20.0)
HBCU	1 (9.1)	5 (19.2)	1 (5.0)
Technical college	4 (36.4)	8 (30.8)	10 (50.0)
Residence Type (%)			
University-affiliated housing	2 (18.2)	7 (26.9)	3 (15.0)
Other	9 (81.9)	19 (73.0)	17 (85.0)
Past 30-day Substance Use (%)			
Cigarettes	10 (90.9)	17 (65.4)	10 (50.0)
LCCs	2 (18.2)	15 (57.7)	8 (40.0)
Smokeless tobacco	5 (45.5)	5 (19.2)	6 (30.0)
E-cigarettes	3 (27.3)	10 (38.5)	13 (65.0)
Hookah	4 (36.4)	12 (46.2)	8 (40.0)
Marijuana	0 (0.0)	26 (100.0)	0 (0.0)
Alcohol, number of days* (SD)	7.2 (8.0)	7.9 (7.1)	8.2 (9.3)

Note.

Abbreviations: HBCU = Historically Black College or University; LCCs = little cigars/cigarillos

* Past 30 days

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Table 2

Themes and Sample Responses Regarding Reasons for Marijuana Initiation, Continued Use, and Cessation among Young Adult Never, Current, and Former Marijuana Users (Study 1)

Theme	Sample Quote
Factors Influencing Marijuana Use Initiation	
Psychological factors	
Boredom	Being bored, just having nothing else to do and being around it...One day, I just decided what the heck. I might as well try it – one of those things. – <i>Black female, current marijuana user</i>
Curiosity	I started using it out of curiosity because I had heard so much about it, like the experience and stuff like that, and decided to try it. – <i>Black male, current marijuana user</i>
Socio-contextual factors	
Siblings' influence	My sister was the first person to introduce me to marijuana, and she was the first person to introduce me to cigarettes. So, I looked up to her a lot....it's just a sibling complex. Anything your older sibling does you want to do, too. – <i>White female, current marijuana user</i>
While using alcohol/[Friends' influence]	I tried [marijuana] after I had been drinking. It was just a small get together with some friends, and I was under the influence of alcohol. – <i>White male, current marijuana user</i>
Availability/[Friends' influence]	A lot of my friends were guys, and they would give it to me for free, so I rarely, rarely ever paid for weed. – <i>White female, current marijuana user</i>
Rebellion/[Friends' influence]	My boyfriend told me that he had been smoking for a while, and I was really upset with him. And he was just like, 'you've never tried it. You don't know what it's like. You just don't like it because your parents told you not to like it.' I was still kind of like in this rebellious stage, and so I smoked it with him just to try it for the first time. – <i>White female, current marijuana user</i>
Transition to college	I'd say it's far more prevalent while you're at school and you're kind of independent. No parents and you have no one really checking up on you. – <i>White male, current marijuana user</i> I don't think I never really smoked a cigarette until I got to college. Marijuana, that's the first thing I used. I was a freshman in college, so about 18. – <i>Black male, current marijuana user</i>
Reasons for Marijuana Use	
Psychological effects	
Stress relief	I use them to manage stress because I am a college student. I'm a wife. I'm a homeowner. There's a lot of stress that comes into my life, and those are basically my outlets. If I'm not reading a book, then I'm usually smoking marijuana or having a cigarette while I'm reading a book with a cup of coffee. – <i>White female, current marijuana user</i>
Relaxation	It definitely makes you relaxed. It helps you sleep. In times when you're stressed out, having trouble sleeping, that's a pretty good example. – <i>White male, current marijuana user</i>
Concentration	Normally sometimes I use it when I'm about to practice just so I could focus. – <i>Black male, current marijuana user</i>
Social context	
Relaxing with friends	You're not quite going out. You're not drinking...just you and a few friends. You chill out, take it easy at the end of the day. – <i>White male, current marijuana user</i>
Bonding	You can be sitting around wherever you're at, and your friend will be like, 'hey, come smoke a bowl with us', and you get high, and you all feel the same and have some crazy conversations, very in depth and really good conversations while using. – <i>White male, current marijuana user</i>
Perceptions of Marijuana	
Physical health effects	

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Unclear about cancer or lung damage risks	When you smoke it, it does put tar into your lungs, and it is very bad for you, but I don't think it is as bad for you as tobacco products are. Of course, there are also other ways, too. You can ingest marijuana and things like that. You can lessen the effect on your body of marijuana if you take different steps to do so. – <i>White female, current marijuana user</i>
Lack of concern about physical risks	I personally don't believe that there is much scientific data that proves that marijuana causes cancer or anything or diseases that are definitely linked to tobacco use. – <i>White male, current marijuana user</i> The cannabis plant itself does not release as many carcinogens. You don't see people getting lung cancer from pot. You see them getting lung cancer from cigarettes and cigars just because...you don't inhale [marijuana] into your lungs. You just inhale it into your mouth. – <i>White male, never marijuana user</i>
Natural	I haven't really seen any studies that prove that marijuana has all of these different health risks at all, because it's a natural thing. It's not picked, and dried, and cured, and it's not a bunch of chemicals thrown together mixed with water vapor. It's just a plant that people dry and grow. – <i>White female, current marijuana user</i>
Medicinal/therapeutic use	Marijuana has stuff in it that has been shown to cure cancer, so I mean, if you're not driving or something like that, then that's probably safer than regular cigarettes. – <i>White female, never marijuana user</i> Growing up I've always been told it's a gateway drug and everything else. I have doctors in my other ear telling me that you should get some for your grandmother. There's got to be some sort of good influence, good potential from it. – <i>White female, never marijuana user</i>
Lack of overdosing risk	It doesn't really have super terrible side effects like other drugs, like cocaine or heroin. You can't overdose on marijuana. – <i>White male, never marijuana user</i>
Psychological effects	
Effect on brain	I'm pretty sure it kills some brain cells or something like that due to the fact of the changed personality that you see. I'm pretty sure it has something to do with some killed brain cells or some brain cells that have died. – <i>Black female, never marijuana user</i>
Effect on personality	With prolonged use, maybe a little brain damage, memory loss, lack of motivation to do things, lack of initiative. – <i>White male, never marijuana user</i>
Lesser behavioral effects than other drugs	I think that it's all a money thing with the government why it's illegal, but I've known plenty of people that use it not in a bad way. I've never seen anyone get violent or angry while using [marijuana] like I have alcohol. And I see something about it almost every day, whether it be like oh, new effects, new benefits, new this, new that. – <i>White male, current marijuana user</i>
Addiction potential	
Very addictive	I could put marijuana in the same category as cigarettes because it's not as easy as people think it is [to quit], because you'll say you'll quit, but then you'll go buy some the next day or something. – <i>Black female, former marijuana user</i>
Psychological vs. physical addiction	I think people begin to tell themselves that they need it, but I don't think that the body necessarily grows a physical need for it like nicotine. There's no withdrawal from smoking marijuana, but there's withdrawal from the nicotine in tobacco. There's no like addictive additive in marijuana, but I think that the mind can create an addiction where it says you need to smoke. – <i>White male, current marijuana user</i> I don't think that it's addictive. I had absolutely no problem quitting it. I never was pining for it or felt like I absolutely had to have it right then. The feeling of it is nice, but I would never say marijuana is addictive. – <i>White female, former marijuana user</i>
Reasons/Potential Reasons for Marijuana Use Cessation	
Health concerns	Because it's pretty much the same risk, like smoking. You don't know the health benefits and you don't know the risks either, until it happens to you. – <i>Black female, current marijuana user</i>
Social influence	My parents, they really don't like it, and they actually disowned me because I was smoking. But after a year of being without them, I just kind of decided that it was more important to have my family than to smoke, so I gave it up so we could be a family again. – <i>White female, current marijuana user</i>
Illegality	A lot of people I know are getting in trouble for weed, and I know that it is not a good look. A lot of jobs in a lot of areas, as far as you go in life, they're not going to tolerate it so might as will stop while I have the chance. – <i>Black female, never marijuana user</i> [I might quit], probably because of the risk, because it's illegal. – <i>White male, current marijuana user</i>
Maturation/life transitions	
Social transition	I was starting to get a little old and getting sick of it, stopped hanging out with those kind of people. – <i>White male, lifetime marijuana user</i>
Graduating from college	[I'll quit] when I graduate college, when I finally start getting my life together. – <i>Black female, current marijuana user</i>

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Career focus	I am trying to work on my career, and I know that the only way that's going to be possible is if I start cutting back on smoking. Marijuana gives you a high effect but also makes you feel lazy. – <i>Black female, former marijuana user</i>
Starting a family	The whole reason is so that we can start trying to grow our family. – <i>White female, current marijuana user</i>

Survey Participant Characteristics and Bivariate Analyses Examining Differences among Marijuana Never Users, Current Users, and Former Users (Study 2)

Table 3

	Total sample M (SD) or N (%) N = 2866	Never users M (SD) or N (%) N = 1759	Current users M (SD) or N (%) N = 500	Former users M (SD) or N (%) N = 607	p
Socio-demographics					
Age (SD)	20.53 (1.93)	20.37 (1.89)	20.46 (1.89)	21.05 (1.98)	<.001
Sex (%)					
Female	1846 (64.4)	1138 (64.7)	304 (60.8)	404 (66.6)	
Male	1020 (35.6)	621 (35.3)	196 (39.2)	203 (33.4)	
Race (%)					.002
White	1824 (63.6)	1139 (64.8)	294 (58.8)	391 (64.4)	
Black	645 (22.5)	364 (20.7)	134 (26.8)	147 (24.2)	
Asian	192 (6.7)	137 (7.8)	29 (5.8)	26 (4.3)	
Other	205 (7.2)	119 (6.8)	43 (8.6)	43 (7.1)	
Hispanic (%)	218 (7.6)	123 (7.0)	49 (9.8)	46 (7.6)	
Type of School (%)					<.001
Public	804 (28.1)	506 (28.8)	130 (26.0)	168 (27.7)	
Private	1224 (42.7)	762 (43.3)	234 (46.8)	228 (37.6)	
Technical college	516 (18.0)	327 (18.6)	58 (11.6)	131 (21.6)	
HBCU	321 (11.2)	163 (9.3)	78 (15.6)	80 (13.2)	
Current Tobacco Use (%)					
Cigarettes	337 (11.8)	104 (5.9)	131 (26.2)	102 (16.8)	<.001
LCCs	275 (9.6)	84 (4.8)	112 (22.4)	79 (13.0)	<.001
Smokeless tobacco	97 (3.4)	37 (2.1)	34 (6.8)	26 (4.3)	<.001
E-cigarettes	292 (10.2)	107 (6.1)	100 (20.0)	85 (14.0)	<.001
Hookah	336 (11.7)	124 (7.0)	119 (23.8)	93 (15.3)	<.001
Alcohol, number of days^a (SD)	3.83 (5.63)	2.59 (4.27)	6.93 (7.75)	4.88 (5.81)	<.001

Note.

Abbreviations: HBCU: Historically Black College or University; LCCs: little cigars/cigarillos

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Table 4

Reasons for Marijuana Cessation Scale Items and Factor Loadings (Study 2)

Factors and Items	1	2	M (SD)
Instrumentality			
I didn't like the smell.	.94	-.09	3.25 (2.21)
I didn't like the taste.	.94	-.12	3.18 (2.21)
I didn't like the buzz.	.92	-.16	3.10 (2.21)
I don't like the idea of using any kind of drug.	.76	.05	3.61 (2.20)
It was messy.	.74	.12	2.63 (2.07)
I think it's unhealthy.	.70	.13	3.31 (2.15)
It is too expensive.	.56	.21	3.25 (2.15)
Social/Legal			
I didn't like the image it projected about me.	.02	.83	3.53 (2.23)
I got into legal trouble because of it.	-.19	.75	1.50 (1.40)
Someone important to me asked me not to use marijuana.	.01	.73	2.48 (2.07)
My friends don't use marijuana.	.09	.71	2.79 (2.03)
It hasn't come up in social situations.	.05	.67	2.81 (2.08)
I was worried about using an illegal drug.	.21	.52	3.65 (2.18)

Note.

Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.

Rotation converged in 3 iterations

Cronbach's α = .92; Subscale Cronbach's α : Instrumentality: .93; Social/Legal: .75

Average subscale scores: Instrumentality 3.26 (SD = 1.77); Social/Legal: 2.65 (SD = 1.40)

Correlations among Reasons for Marijuana Cessation Subscales and Related Factors (Study 2)

Table 5

Variable	Instrumentality		Social/Legal	
	Correlation	p	Correlation	P
Reasons for Marijuana Cessation				
Instrumentality	--	--	.67	<.001
Social/Legal	.67	<.001	--	--
Social Factors				
Parental use of marijuana ^a	-.04	.293	-.02	.527
Friend use of marijuana ^a	-.07	.080	-.17	<.001
Attitudinal Factors				
Addictiveness of marijuana	.12	.002	.09	.020
Harmfulness of marijuana	.25	<.001	.14	<.001
Social acceptability of marijuana	-.08	.045	-.13	.001
Substance Use & Mental Health				
Cigarettes ^a	-.11	.007	-.05	.100
LCCs ^a	-.16	<.001	-.10	.007
Smokeless tobacco ^a	-.08	.050	-.09	.015
E-cigarettes ^a	-.10	.011	-.10	.013
Hookah ^a	-.05	.195	-.08	.032
Days of alcohol use, past 30 days	-.07	.071	-.06	.089
Depressive symptoms ^b	-.01	.873	.05	.186

Note.

^aPoint biserial correlations; all others are Pearson correlations.^bPer PHQ-9

Abbreviations: HBCU: Historically Black College or University; LCCs: little cigars/cigarillos.