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“Is Marijuana even a drug?” A qualitative study of how teens view marijuana use and why they use it

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Abstract

This qualitative study examines how youth in the San Francisco Bay Area perceive marijuana and their motives for using or not using marijuana. Current regular users were more likely to perceive marijuana smoking as an enjoyable activity, comparable to a hobby or sport. Current occasional users commonly reported smoking marijuana when it was offered to them, on special occasions, and sometimes as a result of not wanting to be left out. Most former regular users reported quitting marijuana use due to getting into trouble, being ordered into drug treatment and/or being drug tested. Former occasional users mostly reported that they did not like the somatic effects of marijuana and did not feel it enhanced their social interactions or activities. Teens who reported never having used marijuana did so out of concerns for their health. Except for never-users, marijuana was seen as safe to use. Teens mentioned the widespread use of marijuana by people they know and legalization for medical and recreational use as evidence that marijuana is not harmful. The findings suggest that normalization of marijuana use is taking place. Differences in motives for and against marijuana use should be taking into consideration when designing interventions and prevention messages.

Keywords

Marijuana; Adolescents; Perceptions; Motives for Use; Legalization

Introduction

National survey data indicate that marijuana is the most commonly used illicit drug among U.S. teens, with 12% of 8th graders, 25% of 10th graders and 35% of 12th graders having used marijuana in the past year (Johnston et al. 2016). In California, 10% of 7th graders, 26% of 9th graders and 42% of 11th graders have used marijuana in their lifetime (Wested 2016). Concurrently, the perceived risk of using marijuana has been declining. In a national survey in 2015, 58% of 8th graders, 43% of 10th graders and 32% of 12th graders reporting that regular marijuana use poses a great risk, compared to 74% of 8th graders, 66% of 10th graders and 58% of 12th graders in 2005 (Johnston et al. 2016).

Changes in marijuana-related policies may be related to changes in how marijuana is perceived which may have contributed to the normalization of marijuana use. A study using data from the National Survey on Drug Use and Health (NSDUH) found that youth from states with legalized medical marijuana perceived marijuana use to be less risky compared to those not allowing medical marijuana (Wall et al. 2011). Another study indicated greater acceptance and use of marijuana among youth in communities supportive of legalization of medical marijuana (Friese & Grube 2013). However, it is unclear whether policy changes are driving changes in beliefs and use, or whether community norms are driving changes in policy and marijuana use and beliefs. It may be that legalization of marijuana is a reflection of more liberal community norms regarding marijuana use, which in turn could affect adolescents' use of and beliefs about marijuana. A study that examined the legalization of medical marijuana in California concluded that policy changes were a result of attitudes rather than attitudes being a reflection of policy change (Khatapoush & Hallfors 2004). Alternatively, it may be that both processes are at work.

It has been suggested that marijuana is no longer used just by a subculture (Mostaghim & Hathaway 2013). Instead, marijuana use may have become the "default option" for some youth and occasional marijuana use may signify a willingness to fit in rather than a desire for marijuana use, while opting out of marijuana use may require a conscious effort (Mostaghim & Hathaway 2013). Evidence of this normalization was found in a study of 31 countries that showed that adolescents who use marijuana occasionally and live in countries with high marijuana use frequency are less likely to exhibit some of the typical risk factors for marijuana use (Sznitman et al. 2015). However, the case for normalization should not be overstated as the majority of youth have not used marijuana in their lifetime. Even in California, almost 60% of 11th graders have not used marijuana in their lifetime (Wested 2016).

Whether a result of normalization or other processes, motives for marijuana use are likely to change and are therefore important to study. Motives for marijuana use have been established primarily through quantitative survey studies. For example, one study of adolescents found that common motives for marijuana use included wanting to have a good time with friends, boredom, a desire to relax, and seeking insight (Patrick et al. 2011). Another study found that adolescent marijuana users reported using because they wanted to fit in with a social group, avoid social rejection, relieve pain, and reduce stress (Dash & Anderson 2015). Furthermore, teens have been found to use marijuana in order to facilitate group interactions (Anderson; Sitney & White 2015).

This current, qualitative study examines how youth in Northern California perceive marijuana and their motives for use. In particular, this study comprised a sample of teens who have previously consumed alcohol. Concurrent and/or simultaneous use of alcohol and marijuana may be more risky than using either alcohol or marijuana. A study of high school seniors found that 44% used alcohol only, less than 1% reported only marijuana use, 10% reported concurrent use of alcohol and marijuana, and 24% reported simultaneous use of alcohol and marijuana (Terry-McElrath; O'Malley & Johnston 2014). That same study found that youth who engaged in simultaneous use were more likely to report unsafe driving, followed by youth who report concurrent use of alcohol and marijuana.

Marijuana has a long policy history in California. California was the first state in the U.S. to legalize medical marijuana in 1996, allowing medical marijuana card holders to possess up to 8 ounces (226.8 grams) of marijuana and/or six mature (or 12 immature) marijuana plants (ProCon.org 2016). Marijuana and related products can be purchased at medical marijuana dispensaries for those with a medical marijuana card. In 2010, California's state government decriminalized the possession of up to one ounce of marijuana for recreational use. That same year, California voters defeated Proposition 19 which would have legalized marijuana for recreational use with 53.5% voting "no" and 46.5% voting "yes" to legalization. In November 2016, Proposition 64 (California Marijuana Legalization Initiative) was on the ballot and passed with 57.1% of Californians voting to legalize use of marijuana use.

Considering the liberalizing marijuana norms across the U.S., it is important to monitor youth's motives for and against using marijuana. In particular, there is a need for qualitative studies that can explore motives for use and perceptions that may change as a result of shifting marijuana norms. Qualitative studies, even though typically done with small sample sizes, can provide in-depth explanations of why youth use, quit using, or abstain from marijuana. Having a better understanding of why youth use or not use marijuana can aid in the design of effective intervention and prevention programs and messaging. Such qualitative examination should consider how motives and perceptions may differ by use frequency, as well as examine the perceptions of former marijuana users and their motives for quitting marijuana use. This qualitative study examines how teens in an environment where medical marijuana is legal and marijuana has been decriminalized perceive marijuana and their reasons for or against use. The findings examine themes related to motives and perceptions based on use frequency (regular, occasional, and never) and whether the teen is a current or former user.

Methods

Teens, ages 15 to 18, were recruited to participate in qualitative semi-structured interviews. The initial list of potential respondents was generated from participants in Wave 1 of a longitudinal computer-assisted telephone interview (CATI) survey of teens in 50 California cities selected to be geographically representative of medium sized cities in California. Teens who had reported drinking alcohol on at least four occasions in the past 12 months were selected for recruitment into the qualitative study because the primary focus of the study was on alcohol. The geographic distribution of the sample was limited to respondents residing within 150 miles of the San Francisco Bay Area in Northern California, and the sample was stratified based on sex.

In total, 47 teens took part in the study out of 60 teens who were invited to participate (response rate: 78%). The sample consisted of 25 males and 22 females, the slight disproportion explained by a shortage of potential female respondents that fit the recruitment criteria. Trained interviewers conducted semi-structured interviews with teens in their homes. Prior to the interview, a parent/legal guardian was asked to sign a consent form and the teen was asked to sign an assent form to participate. The interviewers followed an interview guide to direct the questioning, and used probes to elicit richer responses. Each interview lasted about an hour and was digitally recorded. Institutional review board

approval for this research was obtained from the Pacific Institute for Research and Evaluation.

Due to the sensitive nature of the questions being asked in the interview, Interviewers participated in an all-day training to familiarize them with the study methodology, research questions, and techniques used to discuss sensitive issues with youth. Interviewers also received training on how to protect the confidentiality of youth responses. First, interviewers assured teens that everything they said was completely confidential and would not be disclosed to anyone. When interviewers arrived at the home, they asked the teen where they could talk without being disturbed. When parents were at home, they were instructed that the interview was confidential and asked about a private place to conduct the interview. Interviewers made sure that the suggested private place was indeed private. In the rare cases when the parent entered the room where the interview took place, the interviewer would stop the interview and waited until the parent left before resuming the interview.

Using a critical incident approach, teen respondents were asked about recent experiences with using illegal drugs: *Think about the last time that you used any kind of drug. What kind of drug(s) did you take? Tell me about the occasion when this happened. Where did you get high? Who did you get high with?* The narratives focused primarily on marijuana because it was the most commonly used drug among the youth. Youth's frequency of use, reasons for using marijuana and perceptions of marijuana emerged as part of those narratives. In addition, interviewers were instructed to probe reasons for getting and using marijuana (e.g., *Tell me what made you decide to use marijuana on that occasion. Tell me what made you decide to buy marijuana on that occasion. What made you quit using marijuana?*) If the drug discussed initially was not marijuana, respondents were asked specifically about their marijuana use. A small number of youth discussed using multiple types of drugs on the last occasion they used drugs. However, this paper will only focus on marijuana.

Interview audio recordings were transcribed verbatim and imported into ATLAS.ti (Muhr 2009). The transcripts were first coded for *a priori* themes created in conjunction with the interview guide (e.g., "reason," "perceived norm," "context"). One team member coded the transcripts for these themes, and every fifth transcript was double coded by another team member for reliability testing (kappa scores ranged from .69 to .85). Discrepant codes were resolved through discussion. Data were analyzed using pile sorts, in which, four researchers grouped coded segments for thematic similarity, then wrote descriptions of how the groupings were related. This process required discussion and consensus on resulting clusters of coded transcript segments. Brief quotations illustrate some of the prominent and recurring themes that were identified.

Results

Marijuana was the most commonly used illicit drug among the teens who were interviewed. In our sample of 47 youth respondents, 40 (85%) youths reported having smoked marijuana at least once in their lifetime and 7 (15%) reported that they have never used marijuana. The respondents who reported having used marijuana were further classified based on their narrative as regular user, occasional user, former regular user and former occasional user. A

regular user was defined as someone who used marijuana more than once every two weeks. An occasional user was defined as someone who used marijuana up to once every two weeks. Former occasional and former regular users were defined as youth who have used marijuana at the corresponding frequencies in the past but have since stopped using. Categorization as past users was based on respondents' reports of not having used marijuana in the past three months. Some of the youth classified as former users stated explicitly that they were not interested in using marijuana again. Responses included: *"I don't like the feeling at all. So I've never smoked since then"* and *"I don't want to get high—I mentally don't want to, it's just like burning money for me. Why would I even do it?"* It should be noted that even when teens stated their intentions to not use marijuana again it is no guarantee that they will remain former users. However, at the time of the interview they considered themselves former users. Based on teens' responses, 13% were categorized as regular users, 29% as occasional users, 9% as former regular users, 33% as former occasional users, and 16% as never having used marijuana. The frequency of use for two users could not be determined based on the information gained from their interview. These classifications were used to examine differences in perceptions about marijuana and motives for using by frequency of use.

Regular marijuana users

Regular marijuana users frequently did not perceive marijuana as a hard drug or even a drug. One youth when asked about the last time he had used any drug, asked the interviewer: *"Is marijuana considered a drug?"* Several regular marijuana users described smoking marijuana as an activity or hobby. One male youth explained: *"Smoking weed, that's just like playing a sport. There are tricks you can do."* The tricks he was referring were blowing smoke rings. This respondent also mentioned that he used marijuana regularly primarily because there was nothing else more engaging to do in his community. Furthermore, he viewed using marijuana as an experience that he would reflect on fondly when he was older: *"Me and my friends just get together and smoke some weed, and just have a good time [...]. I like it because I'm just creating memories and something to look back on when I'm old."*

Smoking marijuana with friends was perceived by some as an enjoyable activity that enhanced social interactions. One male teen explained the difference between hanging out to do drugs and using drugs to enhance the experience of hanging out with friends: *"We're not just doing drugs. I'm sure there are kids that are just doing drugs, but between me and my friends it's not like, 'Aw, let's go get high, I need weed.' It's just like, 'Hey man, you want to smoke this weekend? Okay, let's get a good sack and just kick back and burn.'" One male teen spoke about how marijuana helps teens to socialize. He explained: "It's an easy way to socialize or get people loosened up. Some of my friends who tend to be shy at parties become the guy that everyone wants to talk to. So it's an easy way of socializing."*

Regular users in this study generally perceived marijuana as safe to use. One male teen when asked about why he thought marijuana was safe to use responded: *"Well, it's an herb."* Furthermore, the fact that medical marijuana is legal in California and that there have been attempts to legalize marijuana for recreational use were mentioned by some teens. One youth explained: *"You know, 'cuz cancer patients do smoke marijuana, some do. So if it was*

all that bad of a drug they wouldn't be trying to legalize it. It's not like they're trying to legalize crack or anything like that. I definitely would rather have my kid smoking marijuana than drinking [alcohol]." Another teen explained that marijuana use is common and will eventually become legal: *"People should know that kids are doing it and they're going to continue to do it 'cuz it's a way of socializing. It's a common thing. [...] marijuana's becoming [legal]. It didn't pass [during the last election], but eventually it's probably going to pass, you know?"*

Some teens considered marijuana safer than other drugs, including alcohol. One male youth explained: *"Marijuana isn't too, too harmful. They say it's a gateway drug, but I don't believe it's a gateway drug if you have the right mindset. I would not do any other drugs. I've done ecstasy once but I've been smoking pot for a couple of years now and nothing has seemed to change. [...] I'm less stressed out [...] but I still am who I am even with pot, but alcohol, that's why I don't drink too much alcohol because it'll make you do things that you wouldn't normally do."* Another teen who lamented that his mother was against marijuana use and held unfavorable views of marijuana users, explained the benefits of marijuana over alcohol: *"I realize it's not necessarily healthy for you to smoke, [but when people smoke] they're not going outside trying to start fights with people. They're not driving insanely drunk. When I get high, I just want to sit there and have a good time. I want to laugh, I don't want to go fight. I don't want to go rob somebody or steal from my mom or anything. It doesn't make me want to be a bad person. I just want my mom to figure that out. Because she kind of looks at it like you smoke weed, [then] you're obviously getting into trouble and you're a bad person."* Another teen explained that even though there are some negative aspects to marijuana use, alcohol is worse because it affects a person's mind: *"In certain cases [marijuana is] a bad thing, the drug cartel and stuff like that and selling it, that's not cool. But if you're a person that wants to kick back and smoke a little marijuana, smoke a little weed, I think beer is a lot worse than marijuana because of the fact that it tampers with your mindset. You're not in the right mindset when you're drinking."*

Occasional marijuana users

Occasional users in our sample often smoked marijuana when it was presented to them by friends or on special occasions. For example, one teen explained that he only used marijuana when he visited his brother's house: *"I don't go out and ask for [marijuana], or look for it, or buy it [...] but my brother smokes and I'll join in every once in a while."* A female teen also reported smoking marijuana when the opportunity presented itself: *"It all depends. Sometimes I could go a whole month like once a week [using marijuana], or sometimes I could go a month without. It just depends. [...] my friends, they're the ones that usually have [marijuana], and I'll just smoke off that."*

Special occasions for occasional marijuana users included parties, music festivals, 4/20 (April 20th is a day for marijuana appreciation), and other special activities. One teen explained that he used marijuana during outdoor sporting occasions, such as when he goes snowboarding or river rafting. He explained: *"I just wanted [to smoke marijuana]. I was going up to [ski resort] so I wanted to smoke up there. Go snowboarding and smoke."* The same youth also reported using marijuana in edible forms while river rafting: *"One time I*

went river rafting with two of my friends and it was the craziest experience that I've ever had in my life. We ate [marijuana edible] half an hour before so it kicked in right as we got in the water." [...] So we knew it was like a two dose [amount of marijuana] so a third of it should get us just a little bit lit, but when we hit the water, we were just rowing like we were in the Olympics."

Occasional marijuana users reported that the desire to fit in with their peer group played a role in their use of marijuana. One male teen explained that hanging out with people who use marijuana means that you have to use it, as well: *"I mean once you start hanging out with people and start smoking with them on a regular basis, you end up just chillin' with them 'cuz they're smoking and they're only chillin' with you 'cuz you're smoking.' So if you don't smoke, they're gonna go find someone else to smoke with."* Another teen explained that he felt left out when his friends started to smoke marijuana and did not hang out with him anymore. Eventually his friends invited him to smoke with them.

Some occasional users explained that they viewed marijuana as safer than other drugs, in part because they know others who use marijuana. One female youth explained *"I don't think of weed as bad, just because so many of my friends do it. There're props [propositions to legalize marijuana] almost getting passed now, and there's medical marijuana and you don't see medical cocaine or anything. That stuff just kind of scares me whereas weed and alcohol I'm completely fine with. I think it's also just how I've done them and I haven't had like bad trips with them, so I'm fine with them."* Another male teen said: *"It wasn't like at first I was anti-drugs and then I was like 'oh, drugs are great.' [Laughter] That's not what it was. I have an older sibling and my dad was definitely a stoner and it always kind of seemed like there are worst things that you could be doing than smoking pot."*

Former regular marijuana users

Among former regular users, the primary reasons for discontinuing use of marijuana were getting in trouble with parents, law enforcement, or the school, and in some cases having to submit to drug testing. For example, one teen was caught at school being under the influence of marijuana and sent to outpatient treatment for marijuana dependence. Following his treatment he was being drug tested by his parents. Another former regular user mentioned a number of reasons for quitting, including that drug testing can be a job requirement and that he was concerned about his driving because of the paranoia he experienced while under the influence of marijuana. This respondent was preparing to apply for a job and was in the process of getting his driver's license. Moreover, he explained that he was unable to *"balance work, school, and having a girlfriend, and whatever else, and be smoking pot because [I] would not do anything. I [don't] know how anyone [could be] smoking pot, and maintain the rest of their life."*

Former occasional users

The majority of former occasional users in our study discontinued use of marijuana primarily because of the somatic effects they experienced. Teens in this group described feeling *"sick," "paranoid," "stupid," "lazy," "anxious,"* and *"uncomfortable"* when smoking marijuana. One teen said using marijuana made him *"feel nothing,"* a feeling he disliked.

Some former occasional users reported experiencing negative physical effects from marijuana use. One youth explained: *“I took one or two hits just to try it, I tried it one time before that and it got me sick last time, too. So I’m just like, ‘okay, I’m never doing it again’ ‘cuz the first time I tried it I got really sick too, and I threw up. It just didn’t agree with me.”* Another teen explained how he viewed marijuana’s effect on his body: *“I just don’t like to smoke marijuana because I don’t like the way it makes me feel. So, personally, it has a negative effect on me. Well, I know a lot of people...some of my close friends smoke every day. For me it’s a personal choice. [Smoking] weed, I just feel like I’m dying away because [of] all the toxins in my body. I don’t know, I just don’t really like the way it feels, it’s not enjoyable at all for me.”* One former occasional user reported quitting marijuana after accidentally running a red light while driving his car.

Some of the former occasional users did not view marijuana as a means to improve their social interactions. For this group of teens smoking marijuana was not a good way to have fun, even if their friends engaged in smoking. One teen explained that marijuana made him withdrawn: *“Another reason I stopped smoking is just I didn’t like it that much. I never had that much fun when I was high. Like I would rather be sober and hang out with my friends than be high and just sit around. ‘Cuz when I’d get high I wouldn’t talk. I’d just sit there and be in my own mind.”* Another teen explained why he quit using marijuana: *“I tried [marijuana] and I liked it for a while and but I don’t know. I’m the kind of person, I do it for a while and I feel like I get over it. I just kind of got tired of it and it made me feel stupid, so I decided to stop.”*

However, even in cases where teens experienced negative side effects, some of these teens reported that they did not stop using marijuana after their first negative experience. For example, one female youth reported smoking marijuana six times before deciding that she did not like it.

Never used marijuana

Teens who had never used marijuana were not interested in drug use, in general. In particular, these youth were concerned about the consequences of using marijuana such as negative impacts on their health. One female respondent explained: *“I don’t feel like I need to do it. I don’t find [drugs] a good way to have fun. I think that they are a little overboard in my opinion. They’re kind of scary. Well, just like the effects. Like what I have learned in health [class] and stuff like that. I don’t think I’d want to do that to my body.”* A male teen gave a similar reason for not using marijuana: *“Well, me personally I think that [marijuana is] a waste of time. It destroys your body. I would never think of doing anything like that.”*

Discussion

This study’s findings outline how youth perceive marijuana, why they use it and how perceptions and motives differ based on frequency and status (current vs. former) of marijuana use. Current regular users were more likely to perceive marijuana smoking as an enjoyable activity, comparable to a hobby or sport, to engage in with friends. This finding has been supported by studies that found frequency of use to be linked to motivation for use, with heavier users more likely to cite activity enhancement (Lee et al. 2007, Chabrol et al.

2005). Current regular users expressed little concern about the damaging effects of the drug and it was seen by some as more benign than alcohol. Current occasional users reported smoking marijuana when it was offered to them, sometimes as a result of experiencing peer pressure. Like regular users, occasional users did not view marijuana as harmful, and perceived it to be socially acceptable. There were few differences between regular and occasional users in their perception of harm of marijuana. Both groups viewed marijuana as safe to use. However, contrary to regular users, some current and former occasional users discussed experiencing negative somatic effects. Though there was little concern about marijuana being harmful, a surprising number of teens perceived the effects of marijuana to be unpleasant. Prevention messages could focus on validating these negative experiences which may have more credibility for youth than discussions of marijuana related harms. Psychological and physical relief motives for marijuana use which have been found in prior studies (e.g., Botorff et al. 2009) were infrequently mentioned by youth in our study. One possible explanation is that teens may have multiple motives for using marijuana and did not disclose relief related motives. An alternative explanation is that this could be due to normalization of marijuana where occasional users are less likely to exhibit the typical risk factors for marijuana use (Sznitman et al. 2015).

Most of the former regular users reported quitting marijuana use due to intervention from others, such as getting in trouble with law enforcement or school officials, and being ordered into drug treatment and/or being drug tested. Former occasional users primarily reported that they did not like the somatic effects of marijuana, and did not feel that it enhanced their social interactions or activities. Some current occasional users also reported that they did not like the somatic effects but continued to use marijuana when with their friends. Teens who reported that they had never used marijuana were not interested in drug use in general, viewed marijuana as harmful to their health, and were concerned about what it would do to their body.

The findings highlight that except for some teens who had never used marijuana, marijuana use was seen as safe and not harmful to health. The widespread use of marijuana by friends, peers, and siblings, and knowing that parents currently use or have used marijuana in the past were seen as reasons for not viewing marijuana use as harmful or dangerous. Some teens suggested that marijuana cannot be very harmful because there is medical marijuana but there are no other “medical” illicit drugs, and because marijuana will likely be legalized in the near future. This suggests that the legalization of marijuana for medical and recreational use may play a role in teens’ perceptions of marijuana and give the impression that marijuana is not harmful.

Contrary to teens’ beliefs that marijuana is safe to use, research suggests that marijuana use, particularly among adolescents, is associated with negative health and psychosocial outcomes. Marijuana use has been linked to impaired driving and to significant increases in automobile crash risk, especially for fatal crashes (Asbridge et al. 2014, Hartman & Huestis 2013). Initiation of marijuana use in adolescence has been associated with negative outcomes in adulthood, including poorer educational attainment, greater risk of intimate partner violence, lower work commitment, greater risk of drug dependence, and greater involvement in crime (Reingle et al. 2012, Hyggen, 2012, Green et al. 2010, Chen, Storr &

Anthony 2009, Hall 2009, Hall & Degenhardt, 2009). However, few of the marijuana users in this study expressed any concerns about harm that could come from marijuana use.

Limitations of this study are that youth in the San Francisco Bay Area may not be representative of youth in other areas of the U.S. or other countries. In particular, it is not clear how perceptions of marijuana may differ in states with stricter punishments for possession of marijuana and states where medical marijuana is not legal. It is also noteworthy that a number of San Francisco Bay Area counties, where this study was conducted, had more votes for the legalization of marijuana for recreational use than against it in the 2010 election and in the 2016 election (California Secretary of State 2010; California Secretary of State 2016), suggesting that the normative environment in this area may be more pro-marijuana than other areas of California. Because this is a qualitative study with a non-representative sample, it is unclear how pervasive these views about marijuana are. In addition, we did not find any differences in motives and perception by gender, and we were not able to explore differences by race/ethnicity which have been found in large quantitative studies (e.g., Terry-McElrath et al. 2008). Furthermore, the categorization of teens' marijuana use frequency was based on respondents' narratives, not a structured, quantitative assessment.

However, in spite of its limitations, this study provides in-depth information about how teens living in an environment where marijuana use is seen as normative perceive marijuana, and how these perceptions differ based on their frequency and status of use. These differences in motives for and against marijuana use should be taken into consideration when designing interventions and prevention messages. For example, the perceptions of occasional former users could inform messages that may resonate with current users. Some youth who experienced negative somatic effects continued to use marijuana believing that their experience was unique. Confirming to youth that somatic effects of marijuana use are possible and may be unpleasant could validate youth's negative experiences and may help them refrain from continued marijuana use. Occasional users who use marijuana only when others are using may benefit from learning skills that could help them say no to marijuana use in group settings. Overall, there was little concern about marijuana's potential negative health effects among current regular and occasional users. Concerns about health and marijuana's effect on the body were only mentioned by those who had never used marijuana. It may be that messages about health effects of marijuana do not resonate or have no credibility with users. In addition, it appears that some youth believe medical marijuana to be medicinal. Prevention messaging might want to inform youth about marijuana's limited medical applications for treating symptoms, such as nausea. The experiences of former regular users indicate that it may take a traumatic event such as getting caught, getting into trouble, or receiving treatment to get them to quit using marijuana. Decriminalization of marijuana decreases the chances of youth getting into trouble with law enforcement because of marijuana use. Furthermore, involving youth in the criminal justice system is not an effective way of dealing with what may be marijuana dependence. Parents and schools should be aware that regular marijuana use may be indicative of dependence requiring treatment.

It has been suggested that the Institute of Medicine's continuum of care model, including universal, selected or indicated prevention, should be applied to prevention of adolescent marijuana use (Cermak & Banyas 2016). The findings of this current study suggest that prevention approaches and messages will have to be tailored based on youth marijuana use frequency. Youth who have never used marijuana may be more receptive to messages about harm than youth who have used marijuana. Youth who are users may be more receptive to messages about legal and social consequences and should be encouraged to use marijuana in moderation.

Marijuana-related policies will continue to evolve. Given these policies changes and changes in the normative climate related to marijuana use, it is important to monitor use motives and perceptions as they may be responding to policy changes. It is imperative to develop interventions that are effective within this rapidly changing context in order to prevent, delay and reduce marijuana use.

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References

- Anderson KG, Sitney M, White HR. Marijuana motivations across adolescence: impacts on use and consequences. *Substance Use & Misuse*. 2015; 50(3):292–301. [PubMed: 25396758]
- Asbridge M, Mann R, Cusimano MD, Trayling C, Roerecke M, Tallon JM, Whipp A, Rehm J. Cannabis and traffic collision risk: findings from a case-crossover study of injured drivers presenting to emergency departments. *International Journal of Public Health*. 2014; 59(2):395–404. [PubMed: 24061594]
- Bottorff JL, Johnson JL, Moffat BM, Mulvogue T. Relief-oriented use of marijuana by teens. *Substance Abuse Treatment, Prevention and Policy*. 2009 Apr.:4–7.
- California Secretary of State. Statewide General Election: Proposition. 2010. p. 19 Retrieved from <http://www.sos.ca.gov/elections/sov/2010-general/maps/prop-19.htm>
- California Secretary of State. Statewide General Election: Proposition. 2016. p. 64 Retrieved from <http://vote.sos.ca.gov/returns/maps/ballot-measures/prop/64/>
- Cermak TL, Banyas P. Prevention of youthful marijuana use. *Journal of Psychoactive Drugs*. 2016; 48(1):21–3. [PubMed: 26891015]
- Chabrol H, Ducongé E, Casas C, Roura C, Carey KB. Relations between cannabis use and dependence, motives for cannabis use and anxious, depressive and borderline symptomatology. *Addictive Behaviors*. 2005; 30:829–40. [PubMed: 15833585]
- Chen CY, Storr CL, Anthony JC. Early-onset drug use and risk for drug dependence problems. *Addictive Behaviors*. 2009; 34:319–22. [PubMed: 19022584]
- Dash GF, Anderson KG. Marijuana use, motives, and change intentions in adolescents. *Journal of Psychoactive Drugs*. 2015; 47(2):100–6. [PubMed: 25950589]
- Friese B, Grube JW. Legalization of medical marijuana and marijuana use among youths. *Drugs: Education, Prevention, and Policy*. 2013; 20(1):33–9.
- Green KM, Doherty EE, Stuart EA, Ensminger ME. Does heavy adolescent marijuana use lead to criminal involvement in adulthood? Evidence from a multiwave longitudinal study of urban African Americans. *Drug and Alcohol Dependence*. 2010; 112:117–25. [PubMed: 20598815]
- Hall W. The adverse health effects of cannabis use: What are they, and what are their implications for policy? *International Journal of Drug Policy*. 2009; 20:458–66. [PubMed: 19362460]

- Hall W, Degenhardt L. Adverse health effects of non-medical cannabis use. *Lancet*. 2009; 374:1383–391. [PubMed: 19837255]
- Hartman RL, Huestis MA. Cannabis effects on driving skills. *Clinical Chemistry*. 2013; 59(3):478–92. [PubMed: 23220273]
- Hyggen C. Does smoking Cannabis affect work commitment? *Addiction*. 2012; 107(7):1309–315. [PubMed: 22276981]
- Johnston, LD., O'Malley, PM., Miech, RA., Bachman, JG., Schulenberg, JE. Monitoring the Future national survey results on drug use, 1975–2015: Overview, key findings on adolescent drug use. Ann Arbor: Institute for Social Research, The University of Michigan; 2016. Retrieved from <http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2015.pdf>
- Khatapoush S, Hallfors D. Sending the wrong message: Did medical marijuana legalization in California change attitudes about and use of marijuana? *Journal of Drug Issues*. 2004; 34:751–70.
- Lee CM, Neighbors C, Woods BA. Marijuana motives: Young adults' reasons for using marijuana. *Addictive Behaviors*. 2007; 32:1384–94. [PubMed: 17097817]
- Mostaghim A, Hathaway AD. Identity formation, marijuana and “the self”: A study of cannabis normalization among university students. *Frontiers in Psychiatry*. 2013; 4(160):1–7. [PubMed: 23346060]
- Muhr, T. ATLAS.ti, Version 5. Berlin: Scientific Software; 2009.
- Patrick ME, Schulenberg JE, O'Malley PM, Johnston LD, Bachman JG. Adolescents' reported reasons for alcohol and marijuana use as predictors of substance use and problems in adulthood. *Journal of Studies on Alcohol and Drugs*. 2011; 72(1):106–16. [PubMed: 21138717]
- ProCon.org. Should marijuana be a medical option?. 2016. Retrieved from <http://medicalmarijuana.procon.org/view.resource.php?resourceID=000881>
- Reingle JM, Staras SA, Jennings WG, Branchini J, Maldonado-Molina MM. The relationship between marijuana use and intimate partner violence in a nationally representative, longitudinal sample. *Journal of Interpersonal Violence*. 2012; 27(8):1562–578. [PubMed: 22080574]
- Sznitman SR, Kolobov T, ter Bogt T, Kuntsche E, Walsh SD, Harel-Fisch Y. Investigating cannabis use normalization by distinguishing between experimental and regular use: A multi-level study in 31 countries. *Journal of Studies on Alcohol and Drugs*. 2015; 76(2):181–89. [PubMed: 25785792]
- Terry-McElrath YM, O'Malley PM, Johnston LD. Alcohol and marijuana use patterns associated with unsafe driving among U.S. high school seniors: High use frequency, concurrent use, and simultaneous use. *Journal of Studies on Alcohol and Drugs*. 2014; 75(3):378–89. [PubMed: 24766749]
- Terry-McElrath YM, O'Malley PM, Johnston LD. Saying no to marijuana: Why American youth report quitting or abstaining. *Journal of Studies on Alcohol and Drugs*. 2008; 69(6):796–805. [PubMed: 18925337]
- Wall M, Poh E, Cerdá M, Keyes KM, Galea S, Hasin DS. Adolescent marijuana use from 2002 to 2008: Higher in states with medical marijuana laws, cause still unclear. *Annals of Epidemiology*. 2011; 21:714–16. [PubMed: 21820632]
- Wested. Query CHKS. 2016. Retrieved from <http://chks.wested.org/query-chks/>