

Young Adults' Attitudes Towards Marijuana Use

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1 INTRODUCTION

Marijuana is categorized as an addictive substance that increases the likelihood of substance abuse in the future and is one of the most used illicit drugs in the United States. Marijuana use at a younger age increases the likelihood of continued use into young adulthood (Feeney & Kampman, 2016; Keyes et al., 2016; Friese, 2017). Young adults that use marijuana are more likely to introduce other peers and family members to the drug due to peer pressure, curiosity, or as a socialization tool. Thirty-eight percent of college students aged 19-22 reported using marijuana at least once in the past 12 months, and 21% reported using at least once in the past 30 days (Schulenberg et al., 2018). The rise in marijuana prevalence can be associated with the decline in young adults' perceptions of the risk of harm from use. The rates of young adults' marijuana use may fluctuate within different states due to increases in community usage and changes in the attitudes and stigmas surrounding the prevalence of use. Forty-three percent of young adults, both attending college and not, have been found to use marijuana. Within the past 5 years, there has been a 7% increase in college students' marijuana use, and those who do not attend college are more likely to be frequent marijuana users (National Institute on Drug Abuse, 2019).

The dynamic of young adults' attitudes towards marijuana is a direct factor that influences the trends of college students' marijuana use. Marijuana can also result in impaired driving abilities. It was found that 253,137 fatal crashes and 20,980 marijuana-involved fatal crashes occurred from 2008 to 2015 in the U.S, approximately 8.3% of fatal crashes were marijuana-related (Lee, Abdel-Aty & Park, 2018). The prevalence of marijuana use among young adults has been gradually increasing in recent years and the perceived risk of marijuana has dropped significantly.

Marijuana has also been linked to negative cognitive impairments such as in areas of executive functioning and processing speed. Frequent marijuana users are more likely to have lower GPAs, an increased risk of not completing college, and delayed graduation (Suerken et al., 2016). Daily users show signs of dependency, lack of motivation, and decreased mental functioning (Suerken et al., 2016; Feeney & Kampman, 2016). Frequent marijuana use impacts the brain's structure and specific functions such as learning, impulse control, and memory. Marijuana users may lack knowledge about the side effects of long-term use, thus resulting in frequent use negatively affecting college students' performances. Constant changes in social norms could influence different perceived risks of marijuana. Young adults may lack information on marijuana; this contributes to the increase in the likelihood of suffering from negative health consequences. Individuals at age 38 with persistent marijuana use demonstrated more problems with attention and memory. Those with earlier onset of marijuana use, had the most cognitive impairments (Feeney & Kampman, 2016). Cognitive impairments can be affected by memory, learning abilities, decision-making, and mental functioning. Additionally, the immediate effects of marijuana on an individual's cognition can delay reaction and response times. Marijuana significantly impairs judgment, motor coordination, and reaction time, and studies have found a

direct relationship between blood THC concentration and impaired abilities (National Institute on Drug Abuse, 2021). Marijuana not only has short-term negative effects but long-term effects of continued use as well. The prevalence of marijuana smoking could lead to a decline in lung function and the development of lung diseases in later life. Long-term marijuana smokers have been connected to various immune-related effects such as chronic bronchitis. A study was performed using a video bronchoscopy to determine whether regular marijuana smoking is associated with visual and microscopic evidence of airway injury and inflammation (Tashkin et al., 2002). This procedure used a bronchitis index to examine the mucosal inflammation. All the smoking groups, including marijuana users, had significantly higher bronchitis index scores than non-smokers (Tashkin et al., 2002). Habitual smoking increased the frequency of cough, sputum, and wheezing (Tashkin et al., 2002). It can be assumed that the longer one smokes marijuana over a course of time, the likelihood of chronic bronchitis and other lung ailments in comparison to nonsmokers increases. In sum, long-term marijuana smokers have been linked to various negative biological and social impairments.

Additional studies have observed the negative consequences of long-term marijuana use through prospective observational cohort studies following participants over a course of time. Marijuana has been linked to causing respiratory symptoms. Data collected in a prospective study following 1037 children born in Dunedin New Zealand in 1972–73 looked at marijuana exposure, outcome data of self-reported respiratory symptoms, and pulmonary function test results over 15 years. The participants on average smoked once a week for a year. The data collected indicated that compared with nonsmokers, those who use marijuana had an increased risk for cough, wheezing, dyspnea, and sputum production. It was also found that quitting smoking marijuana led to significant reduction in respiratory symptoms (Ghasemiesfe et al., 2018). Another prospective observation looked at the association between marijuana use and chronic bronchitis. The study recruited participants in 1983–85 and reviewed individuals self-reported respiratory symptoms and pulmonary function test results over a course of 9 years. It was found that marijuana use in healthy participants increased their risk for bronchitis episodes (Ghasemiesfe et al., 2018). In conclusion, long-term marijuana smoking can be associated with cough, wheezing, and sputum production.

Other studies have also investigated marijuana use through structured interviews prompting young adults' marijuana use. A mixed-method study examining health behaviors among young adult survivors of childhood cancers interviewed participants via a semi-structured interview. The qualitative semi-structured interviews took place by telephone and were about an hour-long, 42.3% of those interviewed are currently college students that were diagnosed with cancer before the age of 18 (Lessem et al., 2006). The study focused on various behaviors such as one's engagement in risky health behaviors. Participants were asked direct questions regarding marijuana use such as "how do you think your earlier health problems impacted your marijuana use"; it was found that

young adults that engage in marijuana use have an odds ratio of 1.83 of later engaging in illicit drug use at some point (Lessem et al., 2006). The results showed that although young adults may have engaged in marijuana use, this does not indicate that the person will use other illicit drugs. Participants' responses to their own marijuana use seemed to vary based on their cancer treatment time and the extent of their condition. Another study examined the dynamic of young adult marijuana use and access in Los Angeles California by interviewing participants between 2014–2016. The qualitative interviews investigated marijuana use practices and sources among young adults who exhibited the criteria of frequent marijuana use, absence or presence of chronic conditions, and management of emotions (Reed, et al., 2020). The interviews focused on participants' patterns of use and promoted individuals to speak about their perceptions and knowledge about marijuana use; later participants were interviewed again in a follow-up focusing more on the health side of marijuana use. The interviews found that marijuana was popularly acquired through dispensaries, delivery services, friends or family, and persona cultivation (Reed et al., 2020).

This research study will focus on understanding young adults' attitudes and beliefs towards marijuana use. It is valuable to understand the relationship between marijuana use on biological and neurological effects within the adolescent population to expand community knowledge and properly educate young adults. Addressing the possible long-term health consequences of prolonged marijuana use can also benefit the community in proper marijuana education programs. The question's this research is aimed to answer are how are young adults receiving information about marijuana? Are beliefs of marijuana use changing due to policy/law changes or community norms? What are young adults' perceived risk of marijuana use? The purpose of this study is to explore young adults' attitudes and beliefs about marijuana use.

2 METHODS

Overall Study Design and Rationale

A qualitative cross-sectional approach, observations, qualitative interviews, and a focus group was used to better understand young adults' perceptions and behaviors related to marijuana use. The cross-sectional approach allows for the observation of variables without influencing them and the use of interviews to assess the University of Tampa student population's attitudes towards marijuana use. After the data was collected and analyzed, interpretations were made from the data using a grounded process. This research study was approved by the University of Tampa's Institutional Review Board (IRB).

Participant Eligibility and Consent Processes

Participants were students enrolled at The University of Tampa (UT), a private urban university located in South Tampa. To be eligible, students had to be actively enrolled at UT and 18 years of age or older. The methods and procedures were approved by the University of Tampa Institutional Review Board, and participants were required to provide their consent.

Procedures and Measures

Five naturalistic observations were completed prior to the interviews in September and October 2021. Observations took place at Kiley Garden Colosseum in the evening, each observation period lasted 30 minutes. The area in the evening is known by community members as an area for young adults to indulge in risky behaviors. Data was recorded through notetaking on the top steps of the colosseum.

Qualitative Interviews

Third-year student Abigail Strauss from the UT Department of Health and Human Sciences, Public Health Program conducted individual interviews on campus with UT students. The structured interviews posited unscripted reactions towards young adults' marijuana use and allowed for participants to express and explain their rationale towards usage and their perceptions. Ten UT students were interviewed, 5 males and 5 females. Interviews lasted a maximum of 15 minutes and occurred during a pre-scheduled time at the expense of the interviewee and were recorded using Apple Voice Memo. Interviews were conducted in October and November 2021.

3 RESULTS

Sample Characteristics

Ten individuals were interviewed, 5 females and 5 males. 80% of the participants were white, 10% Hispanic, and 10% African American. 100% of the females that were interviewed were white, while 60% of the males interviewed were white and the remaining 20% were minorities. Eighty percent of the interviewees were Juniors at the University of Tampa while 20% were freshmen. The ages of the participants varied; 10% were 18 years of age, 10% were 19 years of age, 70% were 20 years of age, and 10% were 21 years of age. Of the interviewees, 80% live off-campus while 20% live on-campus. All the interviewees responded that they were first exposed to marijuana by a peer; six out of the ten (60%) participants were under the age of 16 while the remaining 40% were 16 years of age or older. When asked if one perceives marijuana as a threat to your long-term health, 90% said that marijuana is not a threat while only one participant said that marijuana is a threat to their long-term health. Participants were then asked what their attitude is toward marijuana use by marking "in favor", "not in favor", or "other (specify)"; 9 out of the 10 interviewees were in favor of marijuana while one participant choose another and wrote in saying "it's not for everyone". The last pre-interview question asked was how often participants believed that other young adults use marijuana or do not use it by writing in one of the following terms: a lot, not many, somewhat, or half. Eight out of the ten (80%) said a lot while 20% of interviewees said half of young adults use marijuana.

Interview Themes

Alcohol When interviewees were asked scheduled question one about their opinion on the state's policy and law changes towards medical marijuana or the legalization, many individuals brought up the consumption and purchasing of alcohol. One interviewee said in response to the promoted question "I'm pro-marijuana both recreational and medical, I don't see why it should be scheduled as a schedule one drug and I think it's if something is socially

acceptable as alcohol is being able to be sold in retail settings". Similarly, another participant said, "why are we prohibiting people from pursuing things that they enjoy where we also have alcohol as a legal substance so why are they allowed to drink alcohol and we are not allowed to smoke weed legally". Many of the interviewees compared the legalization of marijuana to the laws and regulations surrounding alcohol purchasing. Another participant mentioned, "I think smoking and drinking are about the same and drinking [repeats self] drinking is legal so I think that marijuana should be legal as well". Therefore, many of the participants were able to apply the debate of the legalization of marijuana to the legality of alcohol consumption.

Lungs When interviewees were asked scheduled question 4 about what they believe are the negative health effects of marijuana, many of the participants mentioned the perceived negative effects marijuana causes in the lungs. One interviewee responded, "Definitely on your lungs like just smoking anything and obviously harm your lungs if not done in moderation". Another individual similarly said, "respiratory issues, like coughing and lungs it kind of depends what you are like, how often you're smoking or stuff like that". It appears that many of the interviewees are aware of the effects smoking in general can and have caused on the lungs. To add, an interviewee said, "I would think obviously it could affect your lungs if you're smoking everyday multiple times a day, but I've also known people who have smoked from a young age and are now old and healthy and don't have any health issues". Interviewees similarly mentioned the known effects smoking has on one's lungs but did not compare the smoking of marijuana to the smoking of tobacco. With more marijuana research now on the rise with recent policy and law changes, more studies can be conducted investigating the direct effects of smoking marijuana on the lungs.

Anxiety & Pain Relief When participants were asked schedule question 7 about what they believe are the benefits of marijuana use a common theme emerged, anxiety. Multiple interviewees mentioned how medical marijuana has benefited those with anxiety for example, "There's medicinal marijuana, like um medical, like people who have anxiety, or they can't sleep it's good for" and "It does help me calm down I have anxiety pretty bad it helps me relax and if I'm really stressed out, um it really helps me in that sense". The common mention of anxiety disorder varied from marijuana helping manage anxiety to marijuana use creating or worsening one's anxiety. Interviewees responded to the question saying what they believe are the benefits of marijuana but also added "I think that for some people it might give them anxiety, personally it gives me anxiety sometimes" and "anxiety is a very prominent problem in THC usage a lot of people get social anxiety when they use it". Overall, it can be presumed that interviewees believe that marijuana use can influence anxiety positively or negatively depending on the person.

Question 7 not only had the recurring mention of anxiety, but also multiple interviewees brought up how marijuana use can be used for pain relief. For example, an interviewee mentioned how marijuana is used in the treatment of chronic diseases, "I think that the benefits of it are physical pain relief and mental pain relief, like even for people going through chemo... people that are just terminally ill, they just have chronic pain and rather than getting addicted to say painkillers that they give you after surgeries and

you can use marijuana which has no addictive properties to it". Another interviewee mentioned components of marijuana that affect the body by saying, "pain reduction, it's anti-inflammatory aspects that are derived from the cannabinoid's; there's just a wide variety of medical purposes for THC and CBD that are very helpful to a lot of people". Therefore, marijuana has been known to alleviate pain for a variety of ailments.

Different High After asking interviewees scheduled question 14 "why do you think marijuana is considered a "gateway drug" that leads to the use of other hard drugs such as heroin and cocaine", many of the participants shared a similar idea that the classification of marijuana may be correlated to people looking for a so called "different high". One interviewee responded saying, "The whole thing with chasing the high, I mean smoking marijuana you do get a high but compared to some other drugs, it's not as good as a high, and some people they crave that to get like a higher high each time and marijuana you can only get so high, so they'd get curious about other drugs". A second interviewee claimed that "people enjoy the feeling that they get when they smoke marijuana that it just makes them curious to what other drugs feelings they could possibly get from those drugs". It seems that many young adults are aware of the possibility that once one starts using marijuana, they are more susceptible to wanting to try other types of drugs. A third participant similarly said, "everyone started out using marijuana, but I think that they are looking for a different high and like a more increase high, so I think that they go after other drugs". The association of marijuana as a "gateway drug" was not new knowledge to many of the interviewees due to popular stigmas still being prevalent in our culture associating cannabis with other clarifications of drugs.

War on drugs/1970s The last theme that emerged from the 10 interviewees was the mention of the 1970's war on drugs. When asked scheduled question 12 "marijuana is the most used illicit drug in the U.S why do you think marijuana is labeled as a schedule one substance according to the drug enforcement administration", two interviewees said similar responses acknowledging the United States history involving marijuana usage in the late 1900's. The first individual responded saying, "it kind of ties into the war on drugs and um and like the government agenda of the 70s to dismantle like black communities and like hippie communities that were against the war um because they were both very like tied into drugs". Another interviewee responded, "society is normalizing marijuana and the law just hasn't caught up to it because there was a war against drugs which was decades ago not great on my timeline but back then they had a war against all drugs including marijuana". The war on drugs took place during the 1970s and was aimed at decreasing illegal drug use by increasing penalties and incarceration times. Based on two of the participant's responses, they feel as if marijuana rules, and regulations need to be reevaluated now in the 21st century. A third interviewee also had a similar response when being asked scheduled question six asking "do you think the number of young adults that use marijuana has risen in the past five years if so why". The individual responded, "it probably fluctuates over the years because there seems to be fads that go in and out obviously in the 70s weed was a very huge thing that a lot of teenagers and young adults partook in um but as you can see like as the years go on their becomes different kind of trends". It can be concluded that multiple participants are aware of and acknowledged the subculture

Variable	Participant
Ethnicity	80% White 10% Hispanic 10% African American
Class/Year of Study	80% Juniors 20% Freshman
Age	10% 18 years 10% 19 years 70% 20 years 10% 21 years
Living	80% off-campus 20% on-campus

Table 1. Participant Demographics

of marijuana use 50 years ago and how perceptions have changed over time and new knowledge has been discovered.

4 DISCUSSION

Findings

Study findings outline how young adults perceive the effects of marijuana based on their health and built community. Most of the interviewees are frequent or occasional marijuana smokers and see marijuana as a tool to provide physical and mental pain relief. A study investigating teens' marijuana use to relieve or manage health problems found that teens directly linked their use of marijuana as a form of management to control difficult feelings such as anxiety and stress (Bottorff et al., 2009). In the UT study multiple of the interviewee's associated anxiety and pain relief as a benefit of marijuana use. Marijuana was able to provide individuals with a source of stress relief during difficult situations. Young adults that are occasional or regular marijuana smokers view marijuana as a therapeutic tool to alleviate mental distress. It was also found that young adults categorize the recreational use of marijuana to be like the purchasing of alcohol. It was expressed that marijuana is just as enjoyable as alcohol and should have different rules and regulations that accommodate to societal and policy changes. This finding has been supported by a study that found that some teens perceived marijuana to be safer than alcohol. Interviewees from the California study noted if marijuana was as harmful as some perceive it to be then it wouldn't be legalized medically and recreationally in certain states (Friese, 2017). The purchasing of alcohol was categorized similarly to the legal purchasing of marijuana and interviewees questioned the laws and limitations in place. Looking into the University of Tampa students' attitudes towards marijuana use, as the other study, individuals addressed the marijuana rules and regulations in comparison to alcohol laws. It was also brought to light how marijuana policy changes have made more progress in recent years after past controversies such as the 20th century "War

Variable	Participant
Exposed to marijuana	100% exposed by a peer 60% under the age of 16 40% 16 or older
Perceive long-term marijuana effects	90% not a threat 10% is a threat
Attitude toward marijuana use	90% in favor 10% say not for everyone
How often other young adults use marijuana	80% a lot 20% half

Table 2. Marijuana exposure, effects, attitude, and usage.

on Drugs" that has been reexamined for policy and educational purposes. This has had a major influence on marijuana reforms and communities' perceptions. Of key importance in the findings are that young adult marijuana smokers are aware of the perceived threat to their lungs and respiratory health. Young adults are aware of the negative effects of smoking on their lungs and how it can increase the likelihood of respiratory symptoms and poor health. In Los Angeles, marijuana smokers were examined over a period regarding their persisting respiratory symptoms. It was found that 18% of those in the study had a higher prevalence of chronic cough, 20% of chronic sputum production, and higher incidences of acute bronchitis (Tashkin et al., 2002). Young adults perceived smoking as a direct threat to their lungs if smoking is not done in moderation. Although the adverse effects to the lungs are known, this did not stop individuals from partaking in smoking activities. Another key finding that emerged throughout the duration of the study was that young adults perceived the reasoning for the classification of marijuana as a "gateway drug" due to users later craving or seeking a different high. Many of the interviewees believed that marijuana is a drug most people that use other hard drugs start with. These other hard drugs are LSD, cocaine, and amphetamine, substances that can be addictive and injectable. Marijuana, under the Controlled Substance Act, is classified as a schedule 1 substance, which is also in the same category as the previously stated "hard" drugs (?). A study was conducted assessing college students that were diagnosed with cancer before the age of 18 relationships between adolescent marijuana use and adult illicit drug use. After interviewing, it was found that 1.83 of young adults that engage in marijuana use will engage in illicit drug use at some point (Lessem & et al., 2006). This finding strengthens the association of marijuana being classified as a gateway drug that increases users' likelihood of using other substances later.

Limitations

I want to acknowledge multiple limitations throughout the study. Limitations are that the 10 interviewees that were interviewed may not have accurately represented the University of Tampa student population due to all of the interviewees admitting to being marijuana smokers and 80% were white. Further limitations that arose were that 80% of the interviewees were upperclassmen, while 20% were underclassmen, this could be disproportionate to the University of Tampa student body. While researching other similar marijuana studies involving young adults, studies among college students were limited. Popularly studies involving teenagers and drug use were conducted in states where marijuana use has become recreational. Studies investigated the adolescent population more possibly due to how behavior in adolescence can influence future behaviors and explore root causes. Another limitation that arose was the limited research following participants over a period examining the effects of long-term use of marijuana. States in the U.S did not start reviewing and changing policies until about 2016 thus resulting in a current call to action for more investigation to be done in more areas of the U.S regarding marijuana use. Despite limitations to the study, information that arose from the study was able to provide an outlook on college students' attitudes toward marijuana use and the University of Tampa's community regarding such.

5 CONCLUSION

Summary

These findings add important information to the small amount of literature that is available regarding young adults' attitudes towards marijuana use. Results found that young adults perceive the severity of marijuana use to be low and believe that marijuana laws should be reevaluated. Some marijuana smokers expressed their prior knowledge regarding the history of marijuana in the United States and the controversial movement of the "War on Drugs" that took place in the 1970s. It was conveyed that many rules and regulations in certain states have been outdated and align more with laws made 50 years ago that have not adapted to the 21st century.

Marijuana and alcohol were categorized both as popular substances used by students and were questioned how state regulations differ. Many perceived the long-term effects of alcohol and marijuana to be about the same and that alcohol may have more severe long-term effects. College students also viewed marijuana as a tool to provide physical or mental pain relief during times of distress. Marijuana has been not only used as a self-medicating therapeutic tool but also as a socialization factor while conversing with other young adults. Although students admitted to enjoying the benefits that come from their marijuana use, negative aspects were acknowledged as well. Students admitted that marijuana can have adverse consequences on their lungs and respiratory health. Despite this knowledge being known or has been experienced, this did not impact individuals from partaking in smoking activities entirely. Because the knowledge of short-term respiratory effects were known, this did change some individuals smoking behaviors for periods of time to better their health physically and mentally. Marijuana is also popularly associated as a gateway drug that leads to the use of other hard drugs. College students were aware of cannabis being a drug that can lead others to stronger drugs leading to addiction but acknowledged that this notion does not characterize

the entire marijuana user population. Despite this, there is an association between marijuana use and the likelihood of using other substances (Lessem et al., 2006).

Future Research

Further research should be conducted on college campuses regarding marijuana use and attitudes toward the changing marijuana regulations in varying states. Investigating more into college students' substance use may posit informational data regarding academic outcomes, other behaviors influenced, and health. By comparing college campuses in states where marijuana is recreational and in states where marijuana is not recreational could allow for researchers to examine how such regulations influence specific populations' behaviors. Now that marijuana is becoming more socially acceptable and more research proposals have been approved by the Institutional Research Board, additional long-term studies can be conducted regarding the long-term health effects caused by marijuana smoking. Continuing to investigate young adults' explanations for their marijuana use can raise awareness of the need for increased marijuana education during adolescence. In conclusion, young adults' attitudes and opinions regarding marijuana use on college campuses were viewed as prevalent and socially acceptable despite possible physical and mental setbacks.

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